Chapter II
Performance Audit

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This Chapter presents the performance audits of 'Implementation of *Sarva Shiksha Abhiyan* in Rajasthan', 'Modernisation of Police Force in Rajasthan' and 'Quality of Drinking Water'.

Elementary Education Department

2.1 Implementation of Sarva Shiksha Abhiyan in Rajasthan

Executive Summary

Government of India launched (2000-01) *Sarva Shiksha Abhiyan* (SSA) as a flagship programme with the objective of universalisation of elementary education. Right of Children to Free and Compulsory Education Act 2009 (RTE Act, 2009), extended the objective of SSA for providing free, compulsory and accessible education to all children in the age group of 6-14 years. The literacy rate in Rajasthan increased from 60.41 (2001 Census) to 66.1 *per cent* (2011 Census). It is, however, still lower than the all India literacy rate of 73 *per cent* (2011 Census). 'Rajasthan Council for Elementary Education (RCEE)' was responsible for implementation and monitoring the programme in the State. SSA envisaged a bottom-up-approach of planning (at the school level) for preparing district level plans. However, this approach was not universally adhered to by RCEE.

Main objective of SSA was to provide education to all the children between the age group of 6 to 14 years and increase their enrolment/ retention. However, the enrolment rate of children in both government and private schools remained practically constant during the review period, with hardly any improvement in these areas in the State. The retention rate also did not improve during the period 2009-13. There remained 9.07 lakh children 'out of school' in the State at the end of 2013-14.

Revised Framework under SSA envisaged preparation of 'Individual Education Plan (IEP)' for each Child with Special Need (CWSN) and teaching them with the help of specified equipments. While in 2009-10, six percent CWSN out of the total identified were out of school, in 2013-14, it was still seven percent who were not enrolled. IEPs were prepared for only 793 out of 43,365 CWSN in 19 test-checked blocks. Most of the equipment which were supposed to be used for CWSN were lying unserviceable in resource rooms of schools.

SSA guidelines envisaged bridging of gender gap at the elementary level in the age group of 6-14 years, by the end of 2013-14. Audit observations revealed that the gender gap declined by only 1.11 *per cent* during the period 2009-14. Even after implementing the National Programme for Education of Girls at Elementary Level for ten years (2003-13), female literacy rate in the

State remained at 52.1 *per cent* which was still below the national level (64.6 *per cent*) and the State stood lowest in female literacy rate among all the States/Union Territories. The growth in female literacy in the State was 8.22 *per cent* which was also less than the national growth of 10.18 *per cent*, when compared to Census 2001.

The RTE Act, 2009 and SSA scheme emphasised providing of quality education. Quality of education depends largely on maintenance of Pupil Teacher Ratio, and the infrastructure provided. It was seen that the enrolment in government schools declined during the period 2009-14 with an equivalent increase in enrolment in private schools. Further, 141 schools were running without students and 12,782 (17 *per cent*) schools were running with a single teacher. Pupil -teacher ratio was adverse in 1,526 PSs (13.48 *per cent*) in test-checked districts. In addition, there was shortage of subject teachers at upper primary level.

Mostly, schools had buildings and also had provision for drinking water and separate toilets for girls. Joint inspection by audit revealed that in a number of places, the toilets were not connected with water supply and some of these were not in use as they were damaged. In more than half the schools, no playground was provided and there was no library in nearly 40 *per cent* of schools. Boundary wall was not constructed in about 18 *per cent* of schools. Construction of boundary wall is important in providing safety and security to children, especially girls, and could go a long way in improving the retention of the girl child in schools. Audit also noticed that due to land disputes and non availability of land, 113 civil works of constructing additional rooms and boundary walls were lying incomplete, for more than one year.

SMC meetings were not held as per prescribed norms at the school level and there was distinct shortfall in the visits undertaken for monitoring process at the district level. At the state level, while some EC meetings were held, the Governing Council had not conducted any meeting since inception of the scheme.

Introduction

The Government of India (GoI) launched (2000-2001) in partnership with the State Government, a flagship programme namely *Sarva Shiksha Abhiyan* (SSA) to focus on the universalisation of elementary education in the country in a mission mode. The programme laid special emphasis on universal enrolment and retention of children in the age group of 6 to 14 years and provision of quality education.

The 86th Constitutional amendment inserting Article 21A in the Constitution of India makes education a fundamental right. To enable the implementation of this fundamental right, the Government of India (GoI) enacted the Right of Children to Free and Compulsory Education Act, 2009 (RTE Act) in April 2010 which provided that every child in the age group of 6-14 years should have a right to free and compulsory education in a neighbourhood school, till completion of elementary education by March 2013, with the overall objective of holistic view of education *i.e.* equity and quality, access, gender concern, centrality of teachers and convergent and integrated system of educational

management. The SSA now acts as the programmatic vehicle for the delivery of the RTE Act.

After passing of RTE Act, the guidelines of SSA were amended by GoI (March 2011) to focus on universalisation of elementary education and improvement in its quality. Accordingly, as per the powers conferred under Article 38 of RTE Act-2009, Government of Rajasthan (GoR) issued Notification dated 29 March 2011 framing rules for providing free and compulsory education to all children in the age group of 6 to 14 years. Though the literacy rate in Rajasthan increased from 60.41 (2001 Census) to 66.1 *per cent* (2011 Census), it is still lower by 6.9 *per cent* than the all India literacy rate of 73 *per cent* (2011 Census). Despite improvement in the literacy rate in the State, the gender gap is very high with the male literacy rate being 79.19 *per cent* and the female literacy rate at 52.12 *per cent*.

2.1.1 Objectives of the programme

The main objectives of the SSA were:

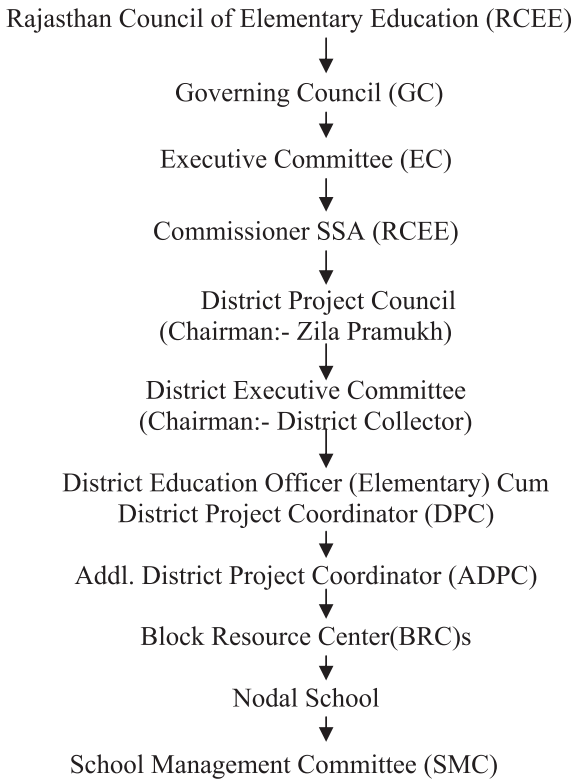
- To have universal access and enrolment by making education free, compulsory and accessible to all the children of 6 to14 years age group to neighbourhood schools;
- Universal retention of children by making sure that all children compulsorily complete eight years elementary education cycle**.**
- To focus on substantial improvement in the quality of education so as to enable all children to achieve essential competence levels of learning;
- To bridge all social and gender gaps at the elementary level.

2.1.2 Organisational setup

The Rajasthan Council for Elementary Education (RCEE), a registered society under Rajasthan Society Registration Act 1958 and headed by Commissioner, SSA (RCEE), is responsible for the implementation of the programme. It has two apex committees namely Governing Council (GC) and Executive Committee (EC) at the state level. The Chief Minister is the chairman of GC and the Chief Secretary, GoR and the Principal Secretary (School and Sanskrit Education) are chairman and vice-chairman of EC respectively.

State Project Office (SPO), headed by Commissioner, monitors the implementation of the programme. District Project Coordinators (DPCs) are responsible for coordination and implementation of the programme at district level. Block Resource Centres (BRCs) have been set up in each block to assist DPCs in implementation of the programme. School Management Committees (SMCs), constituted in all government schools are also responsible for implementation and monitoring at school level. In addition, RTE Act envisaged setting up of State Advisory Council (SAC) to render advice on the implementation of the Act.

The organisational setup is depicted in the following organogram:-



2.1.3 Audit Objectives

The main objectives of conducting the performance audit were to assess whether:

- The planning process for implementation of the programme was adequate and effective;
- Objectives of SSA to provide free and compulsory elementary education to all children between 6 to 14 years in neighbourhood schools, with special focus on children with special needs, are being achieved;
- Pupil-teacher ratio was as per norms and infrastructure facilities were adequate and
- Internal control and monitoring of SSA were effective.

2.1.4 Audit Criteria

The criteria adopted for performance audit were:

- *Sarva Shiksha Abhiyan* Guidelines/Framework 2011;
- Right of Children to Free and Compulsory Education (RTE) Act, 2009;

- Rules regulations and circulars issued by GoI, GoR and State Project Office (SPO);
- Annual Work Plan and Budget for 2009-14;
- District Habitation Annual Plans for 2009-14;
- Survey Reports of SPO for 2009-14.

2.1.5 Scope of Audit

At the State level, Audit reviewed the records relating to SSA of the State Project Office (SPO). At the field level, audit reviewed the records of eight[1] out of 33 District Project Coordinators and 19[2] out of 69 Block Resource Centres, selected on the basis of random sampling. In addition, five schools and one *Kasturba Gandhi Balika Vidhyalaya* (KGBV)[3] from each BRC was also test checked**.** Test check covered the period from 2009-10 to 2013-14.

2.1.6 Audit Methodology

An in-depth examination/analysis of the records maintained at state, district, block and school level was done during field visits. Joint physical inspection of 95 selected schools and one KGBV in selected blocks along with representatives of Block Resource Centre (BRC), was also done by audit team. An entry conference with the Commissioner, SSA was held on 16 April 2014, wherein the audit objectives and scope of PA were explained and assistance in gathering data/ information from auditee unit was sought. An exit conference with the Controller of Finance (CF) and other departmental officers was held on 19 November 2014, wherein the findings of the audit were discussed in detail.

Audit Findings

Audit findings on performance of implementation of SSA in the state are discussed below:

2.1.7 Planning

Guidelines of SSA envisaged a bottom-up-approach towards planning *i.e.* the plans to be initially prepared at the bottom line (school level) for preparing district level plans. Annual Work Plan and Budget (AWP&B) prepared by RCEE at state level were to be based on district level plans. This would ensure

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1 Alwar, Bhilwara, Jhalawar, Jhunjhunu, Jodhpur, Karauli, Sikar and Tonk.

2 Tizara, Ramgarh, Behrore, Mundawar (Alwar); Aasind, Shahpura, Saharda (Bhilwara); Jhalrapatan, Sunel (Jhalawar); Jhunjhunu, Nawalgrh (Jhunjhunu); Karauli (Karauli); Bilara, Mandaora, Jodhpur city (Jodhpur); Neem Ka Thana, Laxmangarh (Sikar); Newai, Deoli (Tonk).

3 *Kasturba Gandhi Balika Vidhyalaya* is a type of residential Upper Primary School (class 6 to 8) opened in 200 blocks of the State for the out of school girls mainly from the category of SC, ST, OBC and minority communities, who could not complete their elementary education.

that the special focus areas of educational and infrastructural requirement of schools are kept in view. The rules framed under the RTE Act 2009 also emphasised setting up of School Management Committees (SMCs)[4] consisting of elected representatives of local authorities, representatives of parents or guardians, teachers, students, etc.

2.1.7.1 School development plans

SMC is required to prepare a School Development Plan (SDP), which is a three-year plan comprising three annual sub-plans and contains the requirements of infrastructure, manpower and funds. District level plans are required to be based on these SDPs and are finally compiled at state level.

Out of 95 schools test-checked, 22 schools[5] did not prepare SDPs at all. In the absence of these plans their grassroots level requirements (*i.e.* infrastructure facilities like number of rooms, toilets, boundary wall and drinking water facilities, etc.) could not be estimated.

State Government stated (December 2014) that Annual Plans are being prepared at state level on the basis of plans prepared at SMC, block and district levels. However, the fact remains that school level inputs were not fully being taken into account while preparing the district level plans.

2.1.7.2 Deficiencies in Annual Work Plan and Budget

As per the SSA framework, an Annual Work Plan and Budget (AWP&B) was required to be prepared by RCEE based on district level plans for approval and release of funds by GoI. The districts level plans are prepared based on SDPs and the data entered in the District Information System of Education (DISE) in respect of each school.

Scrutiny of AWP&B revealed following deficiencies:

- Clause (2) of section 3 of RTE Act envisaged that no child shall be liable to pay any kind of fee or charge or expenses which may prevent him or her from pursuing and completing his elementary education. However, as the State Government did not include provision for school uniform in the notification under RTE rules, the same was also not included in AWP&B. This has also been pointed out by Project Approval Board (PAB) while approving the AWP&B of the State.

- Out of 33 districts, 20 districts (60 *per cent*) had been identified as special focus districts by GoI to provide additional inputs for improvement in education. During scrutiny of proposals for the year 2013-14, it was observed that approved outlay for special focus districts was only ₹ 1,306.47 crore (40.*23 per cent*) against the total outlay of ₹ 3,247.34 crore.

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[4] SMC are empowered to monitor school functioning and managing its finances.

[5] Jhalawar: 7, Jodhpur: 6, Karauli: 2, Sikar: 7.

2.1.8 Programme implementation

The main objective of SSA is to provide free and compulsory education to all children in the age group of 6 to 14 years of age. This covers provision of education up to class eight *i.e.* at primary (class one to 5) and upper primary (class 6 to 8) level. To ensure universal access to education, SSA stipulated for opening of new schools and directed for improvement in enrolment and retention of children in schools. Audit scrutiny of the implementation of the programme, revealed the following:

2.1.8.1 Enrolment of school children

The primary focus of the SSA was to implement the RTE Act 2009 which envisaged improvement in enrolment of children and increase in their retention**.** The position of enrolment is discussed below:

- ***Out of School Children***

Under Section 4 of the RTE Act 2009, where a child above six years of age has not been admitted in any school or though admitted, could not complete his or her elementary education, then such child shall be admitted in a class appropriate to his/her age. Child Tracking Survey (CTS) conducted by the Elementary Education Department (EED) in the year 2010, revealed that 12,10,917 children in the age group 6 to 14, were out of school. On verification of this data by EED, 2,90,335 children (including expired, migrated, over age or under age) were reduced and only 9,20,582 children remained 'out of school' at the end of 2010-11 session.

As per guidelines, 100 *per cent* enrolment of 'out of school children' was to be achieved by 2013. The Department started enrolling such 'out of school' children in regular schools through special enrolment programme (*praveshotsav*) starting from 2011-12 sessions. RCEE projected the number of 'out of school children' in 2013-14 on the basis of CTS and the data of children enrolled/ dropped out during the period, as given in the table below:

Year	Number of out of school children in the beginning of the year	Number of enrolled children in the main stream	Number of drop out children during the year	Number of out of school children at the end of the year
1	2	3	4	5(2-3+4)
2011-12	9,20,582	6,28,578	1,62,457	4,54,461
2012-13	4,54,461	1,07,432	66,428	4,13,457
2013-14	4,13,457	1,72,060	59,893	3,01,290

Source: Data provided by RCEE

From the above table, it is seen that there were 3,01,290 'out of school children' at the end of 2013-14 session.

It was also noticed that as per CTS Report 2010, 13.32 lakh children were of three years of age. Of these, only 7.26 lakh children were enrolled (in private and government schools) in class first after attaining the age of six years during 2013-14 session, leaving 6.06 lakh children un-enrolled by the end of

this session. This indicates that the *praveshotstav* was not effective and the number of 'out of school' children remained almost constant.

State Government stated (December 2014) that 1.77 lakh children have been enrolled during 2014-15 session, leaving 4.29 lakh children un-enrolled. Efforts are being made to enrol these children.

Every school was required to maintain a Village Education Register (VER) containing data of non-enrolled/out of school children in surrounding areas of the school so that efforts may be made to enroll these out of school children. During physical inspection of 95 selected schools, it was noticed that VER was not maintained in 37 schools, in absence of which effective monitoring of out of school children could not be done.

State Government, while accepting the facts, stated (December 2014) that efforts are being made to maintain VERs in all schools.

- ***Decreasing trend of enrolment in government schools***

Scrutiny of data provided by RCEE revealed that enrolment in government schools declined by 12,18,939 children (15.71 *per cent),* whereas there was an increase of 12,04,915 children (26.51 *per cent*) in private schools over the same period as per details given below:

Category of School	Enrolment during		Decrease(-) /Increase(+)	*Per cent*
	2008-09	2013-14		
Government Schools	77,59,455	65,40,516	(-)12,18,939	(-)15.71
Private Schools	45,44,574	57,49,489	(+)12,04,915	(+)26.51
Total	**1,23,04,029**	**1,22,90,005**	**(-) 14,024**	**(-)0.11**

The above table shows that the overall enrollment has decreased marginally (0.11 *per cent*).

State Government stated (December 2014) the reason for decreasing trend of enrolment in government schools was opening of private schools in villages and preference of parents towards educating their children in English medium private schools due to facilities available with them.

- ***No improvement in retention rate***

SSA guidelines provide for universal retention of children by making sure that all children compulsorily complete eight years elementary education cycle.

The overall retention rate in the State has remained constant and less than 50 *per cent* in the last four years. As per the information provided by RCEE, retention rate at state level was 49.60 *per cent* during 2009-10 and 49.25 *per cent* during 2012-13.

State Government, while accepting the facts, intimated (December 2014) that efforts are being made to increase the retention rate.

2.1.8.2 Access to Schools

To ensure universal access to schools, it is essential that schools provided are adequate and located near habitations. Efforts need to be made to ensure universal enrolment and improve retention of children in schools.

Adequacy of Schools

As per guidelines of SSA, new Primary Schools (PSs) and Upper Primary Schools (UPSs) were to be opened only in those areas where there is no school within the radius of one/three kilometer of any habitation. Alternative Education Guarantee Schools at primary level could be opened in un-served habitations where no school exists within a radius of one km where at least 15 school going children in the age group of 6-14 are available.

As per Geographical Information System (GIS) Mapping (2010-12), at primary level out of 1,24,101 habitations, 72,960 (59 *per cent*) habitations were being served and 51,141 (41 *per cent*) were not being served. At upper primary level, out of total 1,23,521 habitations, 34,164 habitations (28 *per cent*) were being served and 89,357 (72 *per cent*) were not being served. Out of total un-served habitations, only 1,411 (one *per cent*) and 1,402 (one *per cent*) habitations were found eligible for opening of new PSs and UPSs respectively as per state neighbourhood norms. It may be mentioned here that in 2009-10, PAB had approved opening of new schools, both PS and UPS, taking into account the ratio of 2:1 between PSs and UPSs and uncovered habitations from UPs. It was, however, noticed that State Government had opened 2,901 PSs and 2,253 UPSs during 2012-14. On the other hand, there were 141 schools with zero students enrolled.

State Government, while accepting the facts, stated (December 2014) that schools with enrolment between 1 to 15 have been merged in August 2014. They further added that opening of new schools and adequacy of schools are policy matters.

2.1.8.3 Inclusiveness

Concept of inclusiveness under SSA covers addressing inclusion of girls for bridging the gender gaps and children with special needs, among others. Review by audit revealed the following:

- ***Non-Bridging of Gender Gap***

SSA guidelines envisaged bridging of all social and gender gaps at the elementary level of age group of 6-14 years, by the end of 2012-13. For bridging the gaps 'National Programme for Education of Girls at Elementary Level (NPEGEL)' and KGBV schemes were implemented in educationally backward blocks.

(i) NPEGEL introduced by GoI in 2003, as an additional component of SSA, in those Educationally Backward Blocks (EBBs) where rural female literacy rate was below national average (46.13 *per cent*) as per Census 2001.

Accordingly, 4,710 Model Clusters Schools (MCS) of 186 EBBs in 31 districts were selected for implementation of NPEGEL.

Though the data of rural female literacy rate prior and after implementation of scheme were not available with RCEE, scrutiny of Census data (2011) revealed that rural female literacy rate in 20 districts[6] (out of 31 districts) ranged between 33.02 and 45.92 *per cent* (Census 2011), which was less than the national average of 46.13 *per cent* (Census 2001) and 57.9 *per cent* (Census 2011).

Thus, even after implementing the programme for ten years (2003-13), female literacy rate in the State remained at 52.12 *per cent* which was still below the national level (64.64 *per cent*) and the State stood lowest in female literacy among all the states/Union Territories. The growth in female literacy in the State was 8.22 *per cent* which was also less than the national growth of 10.18 *per cent*, when compared to Census 2001.

(ii) Scrutiny of records at state level revealed that gender gap in 2009-10 was 9.17 *per cent*. Though the gender gap has declined to 8.06 *per cent* in 2013-14, it is still fairly high. Enrolment ratio of boys and girls has also improved marginally from 1: 0.83 to 1: 0.85.

In eight test-checked districts, the position of gender gap was as under:

S. No.	Name of Districts	2009-10 (*in per cent*)	2013-14 (*in per cent*)
1.	Alwar	8.33	8.10
2.	Bhilwara	12.13	7.55
3.	Jhalawar	9.14	7.48
4	Jhunjhunu	7.81	8.76
5	Jodhpur	7.66	9.96
6	Karauli	5.49	8.32
7	Sikar	6.04	7.25
8	Tonk	9.20	5.90

Source: As per DISE data

Above table shows that gender gap in four test-checked districts (Jodhpur, Jhunjhunu, Karauli and Sikar) actually increased as compared to year 2009-10, in spite of an overall declining trend. State Government, while accepting the facts, intimated (December 2014) that effort is being made for enrolment of girls to decrease the gender gap.

- ***Provision of inclusive education to 'Children with Special Needs'***

The major thrust of SSA was to provide quality education to children with special need (CWSN) in general schools. The inclusion was to be in terms of physical, social and quality access. Para 3.12 of Revised Framework under

[6] Ajmer (41.87), Banswara (40.47), Barmer (38.92), Bhilwara (41.08), Bikaner (44.81), Bundi (41.56), Chittorgarh (40.68), Dungarpur (44.75), Jaisalmer (36.06), Jalore (37.03), Jhalawar (42.01), Jodhpur (41.99), Nagaur (45.92), Pali (43.74), Pratapgarh (39.05), Rajsamand (43.77), Sawai Madhopur (42.65), Sirohi (33.02), Tonk (40.14), Udaipur(40.46).

SSA envisaged that the key thrust would be to ensure that every CWSN, irrespective of any kind, category and degree of disability, is provided quality education in an appropriate environment. CWSN were to be identified and enrolled and taught suitably in formal schools. An Individual Education Plan (IEP) was to be prepared for each CWSN and should be taught accordingly. CWSN with special disabilities (totally visually challenged, multiple disability, autism and cerebral palsy) were to be taught at their home under home-based education.

Position of 'out of school' CWSN during 2009-14 is depicted below:

Year	Identified	Enrolled	Not enrolled	*Percentage* (not enrolled to identified)
2009-10	249551	234301	15250	6
2010-11	234121	220626	13495	6
2011-12	117180	94525	22655	19
2012-13	130327	115857	14470	11
2013-14	116358	107806	8552	7

Source: Data provided by RCEE

From the table above, it can be seen that while in 2009-10, six percent children out the total identified were out of school, in 2013-14, it was still seven *per cent* who were not enrolled. Accepting the facts, State Government stated (December 2014) that efforts to reduce the number of 'out of school' CWSN children have been made during 2014-15.

SSA guidelines envisaged that IEP should be prepared for all CWSN. Test check of 19 blocks revealed that though 43,365 CWSN were enrolled during the period 2009-14, but IEP was prepared only for 793 CWSN, who were either under home-based education or enrolled in those schools where resource rooms existed. Thus, IEP was not prepared for CWSN who were enrolled in schools, which did not have resource rooms.

Moreover, '*Samblan'* (it includes physical and mental exercises for CWSN carried out in resource room) which was required to be provided to all 43,365 CWSN in 19 test-checked blocks, was provided only to 14,625 (including 793 CWSN with IEP) under home-based education.

State Government intimated (December 2014) that IEP was prepared for 2,351 CWSN instead of 793. The reply was not supported by details as the same were also not available in test-checked blocks. Most of equipment *viz.* tread mill, wheel chair, tri-cycle, physio ball and group hearing aid, etc. were not functional in resource rooms established for CWSN. In absence of these equipment, physical exercise to CWSN could not be ensured. State Government (December 2014) stated that most of the equipment have been repaired and are being used, but no such detail has been furnished.

Audit further noticed that 2,46,467 children were suffering from special disability and required home based education. RCEE stated (April 2014) that 20,511 (8.32 *per cent*) CWSN with special disability could be enrolled during the period 2009-14 under home-based education. Further, out of 10,090 CWSN under visually challenged category, Braille books could be provided to

only 7,341 children. In addition, out of 91,339 CWSN with low vision, large print books were made available only to 1,231 (1.35 *per cent)* children during this period.

2.1.8.4 Quality of Education

The quality of education imparted in a large part depends on adequate deployment of teachers and availability of infrastructure facilities. Audit observations on quality of education being imparted, are discussed below:

Deployment of teachers

The RTE Act, 2009 emphasised the provision of quality education. SSA scheme also emphasised this aspect. To ensure this, it is essential that adequate number of teachers is provided in schools. Review in Audit revealed that:

- ***Schools with zero enrolment***

At the State level, there were a total of 141 schools where enrolment of student was zero, while 248 teachers were posted in these schools at the end of the year 2013-14. Due to zero enrolment, the Government had to incur unfruitful expenditure on items like infrastructure facilities and salary of teachers. No steps have been taken to redeploy these teachers to deficient schools. During a joint survey by Audit with representatives of DPC, the reasons for zero enrolment, emanating as per information provided by guardians, local peoples and teachers, were the inclination of parents towards English medium private schools, non availability of children in the nearby habitations for primary classes, poor educational standard in government schools, engagement of teachers in collection of census data, more than one government school in the same village, etc.

The details of schools with zero enrolment and teachers posted in test-checked districts at the end of 2013-14 were as under:

S. No.	District	Schools with zero enrollment	Teachers working in school
1.	Alwar	15	26
2.	Bhilwara	01	01
3.	Jhalawar	09	07
4	Jhunjhunu	32	66
5	Jodhpur	10	17
6	Tonk	01	01
	Total	**68**	**118**

Source: Information furnished by DPCs

The table shows that 68 schools were in operation with zero enrolment, while there were 118 teachers posted in these schools at the end of 2013-14. State Government, while accepting the facts (December 2014), stated that schools having zero enrolment have been merged and teachers posted in these schools have now been redeployed with other schools.

- ***Schools running with single teacher***

As per prescribed norms of SSA and provisions of RTE Act 2009, there should be at least two teachers for each PS and one teacher each for every class in UPS. Scrutiny (April 2014) of records of RCEE revealed that during the period 2013-14, out of 73,069 schools (PSs/UPSs), 12,782 schools (17 *per cent*) were running with single teacher. Similarly, in eight test-checked districts, out of total 19,357 schools (PSs/ UPSs), 2848 schools (15 *per cent*) were running with single teacher.

As per information provided by DPCs, in Alwar and Jodhpur districts, there were 17 schools with more than 150 students, but were being run by a single teacher during 2013-14. Thus short deployment of required number of teachers was adversely affecting the objective of providing quality education under SSA. State Government, while accepting the facts (December 2014), intimated that posting/transfer of teachers is being done and efforts are being made for providing teachers as per requirement of the schools.

- ***Shortage of teachers***

Section 25(1) of RTE Act 2009 prescribed that within six months from the date of commencement (April 2010) of this Act, the appropriate government and the local authority should ensure that the pupil-teacher ratio (PTR), as specified in the schedule, is maintained in each PS. Accordingly, the ratio was fixed as two teachers for up to 60 children (30:1), one additional teacher for every additional thirty children up to 120 children, five teachers for up to 200 children (40:1). This ratio should not exceed 40:1 above 200 children. PTR should be 30:1 (up to 120 students) and 40:1 (above 120 students).

The position of shortage of teachers in test-checked districts is depicted in the table below:

Districts	No of PS	No of teachers required	No. of teachers posted	Shortage	Schools with high PTR	PTR
1	2	3	4	5 (3-4)	6	7
Enrolment up to 120 (PTR 30:1)						
Alwar	1,601	3,808	3,437	371	454	36:1 to 42:1
Bhilwara	2,040	4,611	3,709	902	428	33:1 to 38:1
Jhalawar	1,072	2,482	2,220	262	-	29:1
Jodhpur	2,498	5,636	5,041	595	147	29:1 to 35:1
Karauli	1,094	2,466	2,246	220	65	29:1 to 33:1
Sikar	1,449	3,135	3,071	64	-	25:1 to 27:1
Tonk	1,055	2,286	2,185	101	26	28:1 to 31:1
Enrolment above 120 (PTR 40:1)						
Alwar	170	869	605	264	170	48:1 to 52:1
Bhilwara	67	335	230	105	67	43:1
Jhalawar	69	354	251	103	09	40:1 to 82:1
Jodhpur	111	568	407	161	111	42:1 to 58:1
Karauli	47	235	197	38	47	43:1
Sikar	30	152	145	07	02	29:1 to 65:1
Tonk	14	70	61	09	-	33:1
Total	**11,317**	**27,007**	**23,805**	**3,202**	**1,526**	**-**

Analysis of above data revealed that in test-checked districts (except Jhunjhunu), 11,317 primary schools had a shortage of 3,202 teachers and thus were unable to maintain PTR. In educationally backward districts like Bhilwara and Jhalawar having literacy rate almost five points below the state average, the shortage of teachers was 1,007 and 365 respectively. PTR was adverse in 1,526 PSs (13.48 *per cent*) out of 11,317 PS against prescribed norms, even after four years of commencement of RTE Act-2009 **(*Appendix 2.1*).**

State Government, while accepting the facts (December 2014), stated that efforts are being made for providing teachers as per requirements of the schools. For maintaining the PTR, it was stated that teachers have been redeployed.

- ***Availability of subject teacher in upper primary classes***

As per schedule of RTE Act 2009, at least one teacher each for subject of Science, Mathematics, Social Studies and language was required to be posted in upper primary classes.

Scrutiny of records of 34 UPSs of eight test-checked districts revealed that Science teacher in 13 schools (12 from 2009-10 and 1 from 2013-14), Mathematics teacher in 18 schools (15 from 2009-10, one from 2010-11 and 2 from 2013-14), Social Science teacher in 06 schools (from 2009-10), and language teacher in 03 schools (2 from 2009-10 and 1 from 2011-12) were not posted. Accepting the facts, State Government stated (December 2014) that recruitment of teacher by Rajasthan Public Service Commission is in process.

Infrastructure facilities

- ***Inadequate infrastructure facilities in schools***

As per Paragraph 1.5 of Implementation of SSA Framework, 'every school (PS and UPS both) should have all weather building, at least one class room for every teacher, barrier free access, separate toilets for boys and girls, safe and adequate drinking water facility, play ground, boundary wall and library by 31 March 2013'.

The position of availability of infrastructure facilities at state level at the end of 2013-14 was as under:

	No. of schools PS/UPS	**Without Building**	**Single room**	**No separate toilet for girls**	**No drinking water**	**No play Ground**	**No boundary wall**	**No library**
Total	80074	1313	2089	3214	3967	48285	14644	31677
Percentage		(1.64)	(2.61)	(4.01)	(4.95)	(60.30)	(18.29)	(39.56)

Source: Data provided by RCEE.

By and large, these schools are being run with buildings, drinking water facility and separate toilet for girls. It was, however, seen that a large number

of schools were without boundary wall, play ground and library. Construction of boundary wall is important in promoting a sense of security and safety among children, especially girls and could go a long way in bringing improvement in the retention of girls in schools.

A joint inspection by audit along with departmental officers, of 95 schools in eight test-checked districts revealed that 78 toilets were not connected with water supply, of which 11 toilets were not in use due to damaged conditions.

Accepting the facts, State Government stated (December 2014) that efforts are being made for providing the required infrastructure facilities.

- ***Unfruitful expenditure on incomplete civil works***

As per directions of RCEE, analysis of requirement for construction and assurance of availability of space in school compound should be according to school mapping, so that sanctioned works need not be cancelled or remain pending at a later stage. As per annual work plan, all civil works were to be completed within the time period of two to six months from the date of sanction. SMC was responsible for the timely completion of all constructions.

At state level, out of 1,19,431 works approved by PAB during the period 2009-14, only 93,897 works were sanctioned, 86,382 works were completed and 7,515 works (eight *per cent*) were either incomplete or not taken up (as of 31 March 2014).

Position of incomplete works[7] in eight test-checked districts was as under:

(₹ in crore)

Year of sanction	No. of pending works	Sanctioned amount of pending works	Expenditure incurred	Reasons of non completion
2009-10	16	0.20	0.17	Works remained incomplete due to land dispute, non availability of land and works not started at SMC level
2010-11	45	0.75	0.62	
2011-12	29	0.55	0.47	
2012-13	23	0.94	0.66	
Total	**113**	**2.44**	**1.92**	

Source: Information provided by concerned DPCs

Thus, 113 works were lying incomplete due to land dispute, court cases and negligence of SMC, for more than one year, with an expenditure of ₹ 1.92 crore incurred by the concerned executing agencies against the sanctioned amount of ₹ 2.44 crore.

State Government admitted (December 2014) the facts and stated that efforts are being made to resolve land disputes.

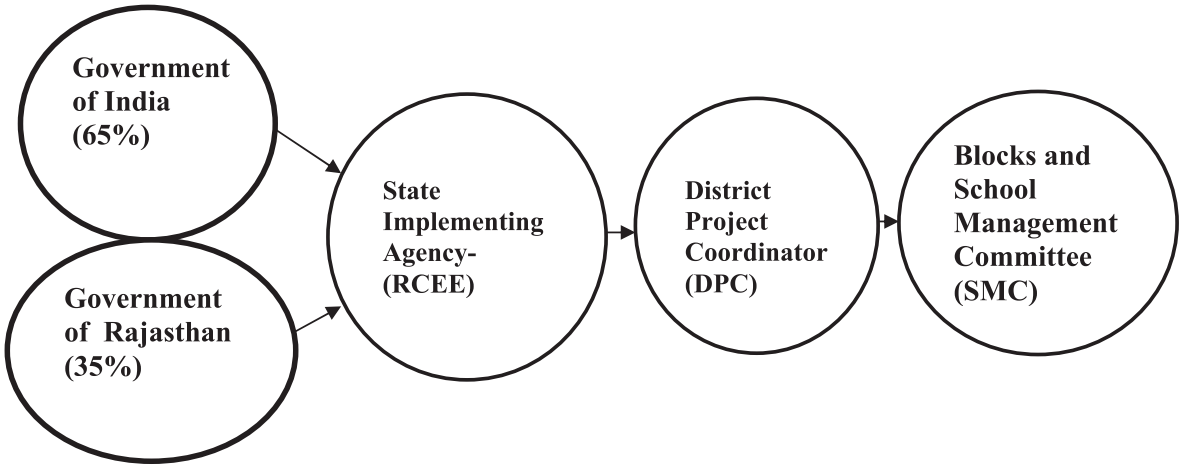
2.1.8.5 Financial management

Annual Work Plan and Budget (AWP&B) was prepared by RCEE and submitted to Project Approval Board (PAB) for approval. The funds were

[7] Additional classrooms, Boundary Wall, Drinking Water facilities, Electrification, Ramps and toilets.

released by GoI directly to the State Implementing Agency (SIA) in two instalments. As per SSA guidelines, funds were to be provided by GoI and GoR in the ratio of 65:35 except during 2009-10 when the ratio was 60:40. The grants-in-aid awarded by the XIII Finance Commission (ThFC) for elementary education to the State is included in the total outlay but the funds to be divided between GoI and GoR was arrived at after deducting the funds given by ThFC from total outlay.

Fund flow chart of SSA is given below:



The position of funds released by GoI /GoR to SIA and expenditure incurred during the period 2009-14 is depicted in the following table:

(₹ in crore)

Years	Approved outlay	Grants -in-aid (ThFC)	Opening Balance	Funds released by		Other Receipts	Total	Total Expen-diture	Closing Balance	*Per-centage*
				GoI	GoR					
2009-10	2172.69	-	255.27	1271.24	702.58	9.81	2238.90	1992.31	246.59	11.01
2010-11	3023.83	-	246.59	1461.82	1180.73	16.48	2905.62	2644.25	261.37	9.00
2011-12	3525.62	320.00	261.37	1485.81	1222.10	21.15	3310.43	3047.69	262.74	7.94
2012-13	3784.31	356.00	262.74	1535.20	1417.57	19.68	3591.19	3405.54	185.65	5.16
2013-14	3247.34	394.00	185.65	2424.89	1129.00	8.05	4141.59	3541.00	600.59	14.50

Source: Year-wise Audited Statements of Accounts.

Non-adjustment of advances

During review of Balance Sheet of RCEE for 2013-14, it was observed that advances of ₹ 160.24 crore paid to District Project Coordinators and State Project Office were pending for adjustment as on 31 March 2014 for want of UCs from concerned authorities. In absence of expenditure statements/ UCs, utilisation of the funds could not be ascertained in audit. State Government, while accepting the fact, stated (December 2014) that due to non-receipt of UCs from SMCs, the advances could not been adjusted timely. However, efforts are being made for adjustment of advances.

Though the PAC, in its 48th Report 2011-12 had recommended for necessary arrangements to stop repetition of the same, pendency of advances still continues.

2.1.9 Internal Control

Lack of internal control on assets created under SSA

- As envisaged in Manual on Financial Management and Procurement-2010 issued by Ministry Of Human Resource Development, GoI, a register of assets in the prescribed format for the assets created wholly or substantially out of GoI grant was to be maintained at RCEE and other levels. It was observed that valuation of assets created is being shown in CAs report/annual accounts, but the assets registers were not being maintained in prescribed format by the RCEE as well as by any DPCs in all 8 test-checked districts. As a result, maintenance and safety of the assets acquired/created out of the programme funds could not be ascertained in audit. Accepting the facts (December 2014), State Government intimated that instructions have been issued (February 2014) to SMCs for maintaining assets register.

- No system of internal audit had been set up in SPO though envisaged in manual of Finance Management and Procurement for SSA. Government stated (December 2014) that internal audit of DPCs/BRCFs/KGBVs and SMCs is being conducted. Fact remains that internal audit of State Project Office and RCEE is not being done.

2.1.10 Monitoring

As per Para 101 of 'Manual on Financial Management and Procurement' issued by Ministry of Human Resource Development (MoHRD), GoI, monitoring is to be a continuous process for both programme implementation and outcome indicators. Monitoring under the programme (SSA) in the state is being conducted at three levels (i) at the local community/school level (ii) the district level and (iii) the state level. State Government was required to monitor the programme.

- ***At school level***

As per Paragraph 4(3) of Notification dated 29 March 2011, meetings of SMC[8] should be held once in a month for reviewing the progress of activities of SSA at school level. During test check of selected schools, it was observed that SMC meetings were not being held as per prescribed norms. Only 11 to 53 meetings were held during 2009-14 against 60 meetings required by each SMC.

State Government stated (December 2014) that most of the female members and parents could not spare time to attend SMC meetings, due to agricultural activities. Therefore, the same could not be conducted as per norms.

[8] SMC are empowered to monitor school functioning and managing its finances.

- ***At district level***

The District Officers-in-charge (DOI) were to make visits for monitoring purpose for two days in a month, covering district headquarter, one block, one nodal centre and three schools at field level. They were to submit monthly progress reports within seven days to Monitoring Cell at the State level. Monitoring Cell was to analyse the monthly progress report and to issue the necessary directions for removing deficiencies.

On being pointed out, District Project Coordinators informed (July 2014) that no record of visit of DOI was being maintained at district level, indicating lack of monitoring at that level. At District level, monthly targets of 14 local visits by DPCs, 28 by ADPCs and 36 by Assistant Engineers were fixed (2010-11) by RCEE. In the test-checked districts, these targets were not achieved during 2010-14, as shown below:

S. No.	Name of District	Norms of visit			Actual visit		
		DPC (14x12x4)	ADPC (28x12x4)	AEN (36x12x4)	DPC	ADPC	AEN
1.	Alwar	672	1344	1728	NA	NA	326
2.	Bhilwara	672	1344	1728	NA	28	36
3.	Jhalwar	672	1344	1728	NA	NA	NA
4.	Jhunjhunu	672	1344	1728	232	233	330
5.	Jodhpur	672	1344	1728	NA	460	1065
6.	Karauli	672	1344	1728	287	691	1056
7.	Sikar	672	1344	1728	NA	856	1518
8.	Tonk	672	1344	1728	NA	85	383

Source: Information provided by DPCs

Government stated (December 2014) that reports of visits are being submitted by DOI to monitoring cell at state level. No such record was found maintained in test-checked districts and in the State Project Office (SPO). Government further stated due to dual charge of DEEO and DPCs, visits as per norms could not be performed by DPCs.

- ***At State level***

As per Paragraph 15 of memorandum of association of RCEE, meetings of Governing Council (GC) presided by Chief Minister, should be held at least twice a year to review the implementation of the projects and to give over all policy guidance and directions. Further, as per rule 34, meetings of Executive Committee (EC) under chairmanship of the Chief Secretary should be held at least once in a quarter to endeavour to achieve the objectives of the council. Though GC was constituted in November 1998, not a single meeting was held. Thus, the GC failed to discharge the function of reviewing the implementation of the Project and give overall policy guidance and direction. Further, EC held only seven meetings as against 20 meetings required to be held during 2009-14. The main issues discussed in the meetings of EC, were approval of work plan and budget, annual reports, annual accounts, appointment of officials, etc.

State Government, while accepting the facts, stated that EC meetings were conducted as per requirement and therefore were in less numbers.

As per Paragraph 6.10.2 of framework for implementation of SSA, an independent third party evaluation of civil works during construction was mandatory to ensure quality of civil works and MoHRD also directed that third party evaluation should be carried out in 100 *per cent* sites for the works approved in a particular year.

Scrutiny of records revealed that in the year 2012-13 and 2013-14, no civil work was evaluated by third party. Thus, the quality of civil works could not be ascertained. RCEE stated (May-2014) that third party evaluation of civil works was not the only option to ensure quality of works. During this period, third party evaluation works was not done due to insufficient funds provided by GoI or sanction not accorded by GoI. The reply was not acceptable as third party evaluation of civil works was mandatory.

GoI nominated three outside agencies *viz.* Institutes of Development Studies, Social Policy Research Institutes and Centre for Development and Communication Studies, for effective monitoring of various activities of SSA in the State. The reports submitted by the above agencies showed that trained teachers for CWSN were not available in any of the inspected schools. Their reports stated that the teachers were not aware about the roles and responsibilities of teachers under RTE Act, awareness levels about SSA and Mid-day-Meal (MDM) was poor in schools, schools report cards were not displayed in any inspected schools, the school records were not updated, etc.

2.1.11 Conclusions and Recommendations

The SSA has helped the State in taking giant steps towards universalisation of elementary education. The overall literacy rate of Rajasthan has increased from 60.41 *per cent* in 2001 to 66.10 *per cent* in 2011. The position of availability of infrastructure facilities revealed that of the total number of PS/UPS of 80074 in the State, by and large, the schools were having buildings, drinking water facilities and separate toilet for girls. However, several concerns and gaps still remain to be addressed, which are highlighted below:

The target to enrol all children in school within three years from the commencement (April 2010) of the RTE Act was not achieved. While in 2009-10, six *per cent* 'Children with Special Needs' (CWSN) out of the total identified were out of school, in 2013-14, it was still seven *per cent* who were not enrolled.

State Government should make efforts to enrol more and more 'out of school' children towards achieving the goal of universalisation of elementary education. Special efforts for enrolment of CWSN also need to be made.

The overall gender gap in the State has declined by 1.11 *per cent*, but it still remains high at 8.06 *per cent*. The female literacy rate remained at 52.12 *per cent*

and was the lowest among all States. In fact, in 4 test-checked districts (Jodhpur, Jhunjhunu, Karauli and Sikar) the gender gap has actually increased.

This highlights the need for the State to focus on programmes bring to improvement in the enrolment of girls and bridge the gender gap. The State Government also needs to create greater awareness among girls, parents and the community, through educational tours, exhibitions, documentary films, street plays, etc. to get the girls enrolled in schools.

There were 12,782 schools which were running with single teacher. This was adversely affecting the objective of providing quality education. In addition, there was inadequate pupil-teacher ratio, with consequential effect on providing quality education to students. There was also shortage of subject teachers at upper primary level.

State Government should take necessary steps to speed up the process of filling up the vacancies of teachers in a time bound manner, make concerted efforts towards improving the inadequate pupil-teacher ratio as well as appointing teachers for separate subjects at upper primary level.

Monitoring is to be a continuous process with emphasis on both programmes implementation and outcome indicators. While SMC meetings were not held as per prescribed norms at the school level, there was distinct shortfall in the visits undertaken for monitoring the progress at the district level. At the state level, while some EC meetings were held, the governing council (GC) had not conducted any meeting since inception of the scheme.

To ensure quality education and proper implementation of the scheme, the State Government may ensure that monitoring is improved through regular meetings at the school level, more field visits by the district officer-in-charge and holding of GC meeting to give overall policy directions and guidance.

Home Department

2.2 Modernisation of Police Force in Rajasthan

Executive Summary

Government of India (GoI) launched the Scheme of 'Modernisation of Police Force' to improve the operational efficiency of the state police forces and to adequately equip them to effectively face the emerging challenges of internal security and law and order. It was seen that the Government of Rajasthan did not prepare a perspective plan to implement the scheme and to derive optimal benefit out of it. Annual Plans were also submitted to GoI with delay. State Government did not contribute its matching share to the scheme as the State Government was separately purchasing items of police modernisation. Further, the State Government could not utilise available funds under the central scheme ranging between 36 and 79 *per cent*.

State Government required 15,884 modern weapons during the period 2009-14, against which only 3,962 weapons (25 *per cent*) were received resulting in shortage of modern weapons. Most of the weapons procured under the scheme were not distributed to field units and remained idle. Against requirement of 8,132 vehicles in the State, shortage of 2,252 vehicles remained as on 31 March 2014. This was despite the facts that funds were available.

Test check of police stations revealed that there was a substantial shortfall in basic equipment like *lathis*, shield, body protectors, etc.

Different response times have been prescribed for the rural and the urban police teams to reach the crime site, police stations were also required to record the response time in crime register. In maximum cases police response time could not be worked out as necessary information was not recorded in crime register by Station House Officer.

Large number of samples were pending for analysis in 'Forensic Science Laboratories (FSL)', adversely affecting police investigations. The pendency was attributed to a shortage of technical staff.

The State Government accorded high priority to construction of residential/non-residential building. However, there was a delay in construction of residential/non-residential building for staff. There was huge shortage of staff quarters as there were only 25,649 staff quarters against 81,804 men-in-position as on 31 March 2014. In a number of instances there was delay in handing over of completed buildings. Two-hundred and thirty five works were not started due to delay in finalising drawings, selection of sites *etc*.

Due to less numbers of SLEC meetings, crucial issues like mobility, weapons, constructions of buildings/quarters, *etc*. were not getting proper attention of the Government.

Introduction

'Law and order' is a State subject and it is primarily the responsibility of the State Governments to modernise and adequately equip their police forces for meeting the challenges to law and order.

The scheme of 'Modernisation of Police Force (MPF)' was introduced (1969) by Government of India (GoI) with an objective to improve the operational efficiency of the State Police Forces and to adequately equip them to effectively face the emerging challenges of internal security and law and order. The scheme aims to modernise police forces in terms of mobility, weaponry, communication systems, training, Forensic Science Laboratory/ Finger Print Bureau, equipment and buildings.

The scheme was revised in 2000-01 and extended for a period of ten years. Up to 19 November 2003, the cost sharing of the scheme between the GoI and the States was on 50:50 basis. With effect from 20 November 2003, the funding pattern was modified to 60:40. The scheme was reviewed in September 2005 and the States were divided in two groups[9], namely 'A' and 'B' with central assistance of 100 and 75 *per cent* respectively, Rajasthan was placed under Category 'B'. This was subsequently revised to 90 and 60 *per cent* respectively with effect from the year 2012-13. As Rajasthan was grouped under category 'B' states, it was therefore, entitled to 60 *per cent* central assistance. MPF Scheme under operation till 2011-12, was approved for a further period of five years till 2016-17.

Desert policing, for the first time, was included in Annual Action Plan 2005-06 and remained in force up to 2010-11. Subsequently, it was dropped from the modernisation scheme in 2011-12.

2.2.1 Previous Audit Coverage

The scheme was earlier reviewed by audit in 2006-07 and included as paragraph 3.2 of the Audit Report (Civil) Government of Rajasthan for the year ended 31 March 2007. Issues covered in the report were mainly non-contribution of matching share by the State Government, non-completion of construction works, shortage of staff quarters, use of purchased vehicles for replacement of unserviceable vehicles, delay in deployment of modern weapons, procurement of costly equipment by forensic science laboratories without planning adequate manpower for their operation. The Performance Audit was examined by the Public Accounts Committee (PAC) in 2011-12 (117th Report) and action taken by Government on the recommendations further examined by PAC (185th Report of 2012-13) have been included in paragraph Nos. 2.2.8.3 and 2.2.9.

[9] Category A: State of J&K and all eight north-east states including Sikkim and category B: remaining states.

2.2.2 Audit objectives

The audit reviewed implementation of the scheme with a view to assess whether:

- adequate plans had been prepared to achieve the objectives of the scheme viz. operational efficiency, capacity building and infrastructure augmentations;
- financial management was efficient;
- there was effective modernisation of the State police force, and
- the system of effective monitoring was in place.

2.2.3 Audit Criteria

The audit criteria used to benchmark the implementation of the scheme were drawn from:

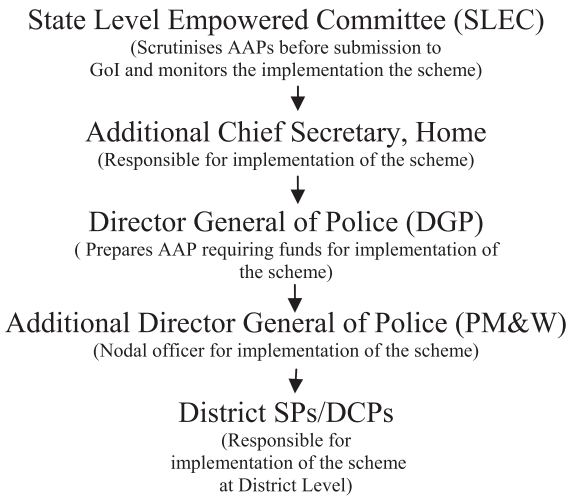
- Scheme Guidelines and instructions issued by the GoI and GoR from time to time;
- Norms and scales prescribed by Bureau of Police Research and Development (BPR&D) for various operational parameters like weapons, mobility, etc;
- Provisions of General Financial and Accounting Rules (GF&ARs), Rajasthan Budget Manual and
- Prescribed monitoring mechanism, as envisaged in the scheme guidelines.

2.2.4 Organisational set up

Home Department under Government of Rajasthan (GoR), headed by Additional Chief Secretary (ACS), is responsible for implementation of the scheme. State Level Empowered Committee (SLEC) under the chairmanship of the Chief Secretary monitors the implementation of the scheme. The chairman is assisted by ACS and Director General of Police (DGP) as members of the committee.

DGP is the head of police establishment and Additional Director General of Police (ADGP) (Planning, Modernisation and Welfare) is the nodal officer for implementing MPF scheme. There are seven police ranges headed by Inspector General of Police (IGP) and two police ranges (Jaipur and Jodhpur) headed by Commissioner of Police. There are 34 police districts, each headed by Superintendents of Police (SP) and six police districts, each headed by Deputy Commissioners of Police (DCP) under two police commissionerates. All construction works related to the scheme have been entrusted to Rajasthan State Road Development and Construction Corporation (RSRDCC) Limited

and Public Works Department (PWD). Organisational Setup is further depicted in the following diagram:



2.2.5 Scope of Audit and Methodology

The Performance Audit (PA) for the period 2009-10 to 2013-14 was conducted in June-July 2014. Records of the Home Department, DGP Office, in addition to nine (23 *per cent*) Police Districts (one from each of the nine ranges[10]) along with 35 police stations[11] (20 *per cent*) under selected districts were selected on simple random basis. In addition, records of Forensic Science Laboratories[12], Finger Print Bureau Jaipur, Rajasthan Police Academy, Jaipur, Rajasthan Police Training Centre and Police Training School, Jodhpur and Jhalawar, Director Communication, Jaipur, Director General (Home Guards), Additional Directors General of Police, Crime and Traffic Police were also test-checked. Audit also examined the records of RSRDCC Limited and PWD to assess the progress of construction works.

An entry conference with the Additional Chief Secretary, Home Department was held on 26 May 2014 wherein the audit objectives and scope and criteria of audit were discussed. An exit conference was held on 12 November 2014 with the Additional Chief Secretary, Home Department, discussing the findings in detail. The Government's views and replies have suitably been incorporated in the PA.

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[10] Ajmer (Tonk), Bharatpur (Karauli), Bikaner (Churu), Jaipur (Jhunjhunu), Jaipur Commissionerate (Jaipur West), Jodhpur (Jodhpur Rural), Jodhpur Commissionerate (Jodhpur West), Kota (Jhalawar) and Udaipur (Chittorgarh).

[11] Tonk: 4 (Uniara, Aligarh, Pachewar and Kotwali); Karauli: 4 (Surauth, Nadoti, Karanpur and Keladevi); Churu: 4 (Rajgarh, Dudwa Khara, Sujangarh and Hamirwas); Jaipur West: 3 (Jhotwara, Bhankrota and Murlipura); Jhunjhunu: 4 (Buhana, Udaipur Wati, Bagar and Surajgarh); Jodhpur West: 2 (Choupasni Housing Board and Jhanwar); Jodhpur Rural: 4 (Bilara, Pipar City, Jamba and Borunda); Jhalawar: 5 (Misroli, Jawar, Pirawa, Kamkheda and Dug) and Chittorgarh: 5 (Jawda, Badsora, Nikumbh, Rawatbhata and Nimbahera).

[12] Jaipur and Jodhpur.

Audit Findings

2.2.6 Planning

Paragraph 1 of the MPF guidelines envisaged preparation of a strategic plan incorporating an equipment acquisition-perspective plan for five years, identifying and analysing the gaps in various components under MPF scheme, in conjunction with the Bureau of Police Research and Development (BPR&D) norms (State Government adopted its own norms[13] against BPR&D norms).

The Annual Action Plans (AAPs) requiring funds for implementation of the scheme are to be prepared by DGP and scrutinised by the SLEC, before submission to GoI for approval. As per directions of GoI, State Government has to formulate its AAPs in accordance with the guidelines issued by GoI every year. AAPs should be in accordance with the five-year Perspective Plan which identifies the gaps in various components under MPF scheme.

2.2.6.1 Lack of long term planning

As per MPF guidelines, State Government was required to prepare five year Perspective Plans 2005-10 and 2010-15, as long term planning. Contrary to this, State Government did not prepare any perspective plan, indicating that respective AAPs were prepared without identifying and analysing the gaps in various components under the scheme and without properly assessing requirement of the State.

Though Strategic Plan 2011-16 was prepared by DGP and sent (February 2012) to State Government for approval but the same was not forwarded to GoI. State Government stated (November 2014) that as per discussions held with the Principal Secretary during the conference (23 March 2012) organised by GoI, it was suggested that only AAP 2012-13 may be sent to GoI instead of five year strategic plan. Reply is not in consonance with the MPF guidelines as the Strategic Plan 2011-16 was required to be prepared in 2009-10, while the conference was held in March 2012. Moreover, GoI also requested (December 2010) all state governments to prepare five-year strategic plan for the period 2011-16 to improve the operational efficiency and professional skills of state police force by analysing and identifying the gaps in various components of MPF scheme and forwarded to GoI for approval. In absence of strategic plan, GoI could not be informed about the strategy of the State Government to improve operational efficiency.

[13] Building (March 2000): 100 *per cent* accommodation; Mobility (December 2011): one four wheeler and four Motor cycle for commissionerate, three Motor cycle for urban and two Motor cycle for rural per police station; Weaponry (May 2006): Inspector/Sub Inspector/Assistant Sub Inspector (9 mm pistol) Head Constable (INSAS /AK Rifle) and Constable (7.62 SLR) etc. and equipment (August 2007) 50 *per cent* FRP Helmets, 50 *per cent* Poly Carbonate Lathi, 40 *per cent* Poly Carbonate Shield and 40 *per cent* body protector of sanctioned strength.

2.2.6.2 Delay in submission of Annual Action Plan

Scrutiny of records of DGP office revealed that during the period 2009-14, the State Government delayed submission of AAPs to GoI as shown below:

Year	Due date of letter from the PM Division, MHA	Actual date of letter from the PM Division, MHA	Due date of submission of AAP to the PM Division, MHA as per Guidelines	Due date of submission of AAP to the PM Division, MHA as per letter of PM Division, MHA	Actual date of submission of AAP to the PM Division, MHA	Period of delay (in days) of submission of AAP to the PM Division, MHA
2009-10	1st Week of October 2008	22 December 2008	31 December 2008	7 January 2009	2 January 2009	-
2010-11	1st Week of October 2009	30 December 2009	31 December 2009	22 January 2010	21 January 2010	-
2011-12	1st Week of October 2010	2 December 2010	31 December 2010	27 December 2010	17 February 2011	53 days
2012-13	31 December 2011	20 March 2012	15 January 2012	15 April 2012	13 May 2012	29 days
2013-14	31 December 2012	25 March 2013	15 January 2013	15 April 2013	26 June 2013	73 days

Source: Information furnished by Director General of Police (DGP)

From the above table it is seen that AAPs for 2011-12 to 2013-14 were submitted to GoI with delays ranging between 29 and 73 days from the due date of submission. MHA had also indicated that serious efforts were not made in preparing and submitting AAPs to GoI.

It was further observed that High Power Committee (HPC) constituted by MHA directed (3 July 2012) the State Government to send a revised AAP for 2012-13. It was noticed that the revised AAP was sent to the GoI in January 2013, *i.e.* with a delay of six months.

2.2.7 Financial Management

2.2.7.1 Fund flow and financial position

During the period 2009-12, GoI and the State Government were required to fund the scheme in the ratio of 75:25. This ratio was modified to 60:40 from 2012-13 onwards. After approval of the AAPs, GoI directly released its share to three implementing agencies namely State Government, Ordnance Factory Board (OFB) and RSRDCC Limited.

The details of funds released by the GoI/State Government and the expenditure incurred there against during the period 2009-14 were as under:

(₹ in crore)

Year	Approved Action Plan	Opening balance	Amount released by		Total amount available (3+4+5)	Expenditure incurred during the year	Closing Balance (percentage)	Matching share not released by State Government
			GoI	State Government				
1	2	3	4	5	6	7	8	9
2009-10	119.91	17.54	51.18	0.00	68.72	34.01	34.71 (51)	17.06
2010-11	111.73	34.71	47.88	0.00	82.59	52.63	29.96 (36)	15.96
2011-12	96.95	29.96	33.10	0.00	63.06	38.58	24.48 (39)	11.03
2012-13	161.22	24.48	15.88	0.00	40.36	22.65	17.71 (44)	10.59
2013-14	179.41	17.71	62.83	0.00	80.54	17.31	63.23# (79)	41.89
Total	**669.22**		**210.87**	**0.00**		**165.18**		**96.53**

Source: Annual Action Plan and Information furnished by DGP

Rajasthan State Road Development Construction Corporation Limited: ₹ 58.06 crore, Forensic Science Laboratory: ₹ 0.64 crore, Government of Rajasthan: ₹ 4.53 crore.

From the above table, following issues were noticed:

- State Government did not contribute its matching share of ₹ 96.53 crore during the period 2009-14.

The State Government stated (November 2014) that they had initiated a residential scheme for which a loan of ₹ 563.61 crore was obtained from Housing Urban Development Corporation (HUDCO) and ₹ 96 crore is being repaid every year. State Government further informed (November 2014) that funds (₹ 194.70 crore) were released for purchase of various components of modernisation of police, under state plan. The fact remained that State Government did not contribute its share to the central scheme.

- Department could not utilise funds ranging between 36 and 79 *per cent* during the period 2009-14. This indicated that the Departmental machinery was not geared up to implement various components of the scheme.

State Government accepted (November 2014) that inspite of its all out efforts, delay occurred in procurement of items. The Government stated that it will make sincere efforts to utilise the funds under the scheme.

- Scrutiny of records of DGP office revealed that though sufficient amount was available with the department during the period 2009-14, the Department incurred most of its expenditure (ranging between 21 and 77 *per cent)* in the last month (March) of each financial year, as shown below:

(₹ in crore)

Year	Funds Available as on 1st April	Expenditure incurred during the year	Expenditure incurred in the month of March	Percentage of expenditure incurred in March
2009-10	17.54	13.14	10.11	77
2010-11	34.71	20.49	9.43	46
2011-12	29.96	27.74	11.49	41
2012-13	24.48	17.25	3.61	21
2013-14	17.06*	9.45	4.33	46
Total	**123.75**	**88.07**	**38.97**	**44**

*Revalidation of ₹ 0.65 crore was not done by the State Government
Source:-Information furnished by DGP (Central Store)

2.2.8 Programme Implementation

The scheme aimed to modernise police forces in terms of mobility, weaponry, communication systems, training, FSL, equipment, and buildings. State Government was required to assess and acquire all components of scheme as per the adopted norms[13].

An analysis of various components proposed in the AAPs for the years 2009-14 vis-à-vis actual procurement during the period revealed that physical shortfall in procurement of equipment ranged between 17 and 100 *per cent,* while financial shortfall ranged between *3* and *100 per cent*. The details of the major components of AAP like mobility, weapons, communication equipments, etc. are given in ***Appendix 2.2***. State Government stated (November 2014) that they had also released funds separately for purchase of various items of police modernisation. Notwithstanding availability of funds, the department could not achieve their physical and financial targets.

Performance of the Department in implementation of the programme is discussed in the following paragraphs:

2.2.8.1 Weaponry

GoI approved ₹ 44.44 crore during 2009-14 for purchase of modern weapons like 7.6 mm self loaded rifles (SLR), 5.56 insas rifles, 9 mm carbine, rocket launcher (RL), 51 mm mortar, light machine guns (LMG), AK rifles, under barrel grenade launcher (UBGL), tear gas guns etc. Against this, the Department procured weapons worth ₹ 19.82 crore as of March 2014. Deficiencies in assessment of requirement, procurement and utilisation of modern weapons are detailed below:

- ***Shortfall of modern weapons***

As per approved AAPs, 15,884 numbers of modern weapons were required during the period 2009-14. Against this, State Government ordered 4,956 (31 *per cent*) modern weapons and as of March 2014 only 3,962 (25 *per cent*) weapons were received from various agencies[14]. While the overall shortfall was 75 *per cent*, the year-wise shortfall was 99 *per cent* (2009-10), 22 *per cent* (2010-11), 17 *per cent* (2011-12), 76 *per cent* (2012-13) and 47 *per cent* (2013-14).

State Government clarified (November 2014) that due to not receiving weapons during the same financial year in which order was placed and due to increase in their prices, fewer quantity of weapons were purchased. Moreover, funds are directly transferred to OFB by GoI.

The reply was not convincing as of the 15,884 weapons, 12,992 weapons were to be purchased by the State Government from the designated agencies like Ordnance factories and central para-military forces like CRPF.

- ***Weapons lying idle due to non-distribution to units***

Scrutiny of records of Central Store, Jaipur, revealed that while on the one hand there was shortage of weapons in the Department, on the other hand modern weapons purchased under the scheme were not issued to Police Stations (PSs) and remained stock piled in Central Store as under:

(₹ in crore)

S. No.	Name of Weapons	Number of weapons received	Value	Number of weapons distributed	Number of weapons lying in Central Store	Proportionate Value
1	Carbine 9 mm/1A1	190	0.66	326[15]	0	0
2	9 mm Pistol/Auto	624	1.91	124	500	1.53
3	SLR 7.62 mm	196	0.94	196	0	0
4	Insas/5.56 Insas	559	2.39	454	105	0.45
5	12 Bore Pump Action Gun	929	4.61	605	324	1.61
6	Rocket Launcher	11	1.32	16[15]	0	0
7	51 mm Mortar	14	0.19	37[15]	0	0

[14] Rifle Factory, Ishapore, Gun Carriage Factory, Jabalpur, Small Arms Factory, Kanpur, CRPF, Rampur and import by Ministry of Home Affairs, GoI

[15] 164 Weapons (Carbine 9 mm/1A1: 136, Rocket Launcher: 5 and 51 mm Mortar: 23) were procured in excess in earlier period and had not been distributed.

S. No.	Name of Weapons	Number of weapons received	Value	Number of weapons distributed	Number of weapons lying in Central Store	Proportionate Value
8	LMG 5.56 mm	33	0.39	18	15	0.18
9	Pistol Glock	626	1.28	0	626	1.28
10	MP5 –A3,	196	2.47	0	196	2.47
11	MP5 –K	36	0.55	0	36	0.55
12	MP5 –SD	36	0.88	0	36	0.88
13	Gas Gun/MBL	80	0.17	0	80	0.17
14	AGL 30 mm	7	1.20	0	7	1.20
15	AK Series	425	0.86	0	425	0.86
	Total	**3,962**	**19.82**	**1,776**	**2,350 (59%)**	**11.18**

Of 3,962 numbers of weapons received during the period 2009-14, 2,350 numbers of weapons were lying in the Central Store as on 31 March 2014. Thus, 59 *per cent* of weapons procured were not distributed to the field units.

It was also seen that the DGP issued (August 2012, January and May 2013) directions that as some of the weapons procured were new (Rocket Launcher, Rifle SMG, MP5 SD, MP5 K, MP5 A3) they should be distributed only after training has been provided to field offices. However, these weapons were not included in the training courses.

Records of 35 test-checked PSs in nine selected police districts revealed (July 2014) that as against requirement of 1,227 weapons, only 309 weapons were available with a shortage of 918 (75 *per cent*). This indicated that the field level police units which are responsible for operation were not strengthened and remained either unequipped or equipped with old weapons.

State Government replied (November 2014) that weapons were allotted to field units/districts after inspection by 'Departmental Inspection Committee'. Weapons are distributed to field units as soon as they are received. Necessary instruction for completion of process within three months has been issued, and at present there is zero stock.

- ***Purchase of ammunition after expiry of warranty period of guns***

General Manager, Gun Carriage Factory (GCF), Jabalpur supplied (February 2011) 99 guns (₹ 44.50 lakh) to DGP. Audit scrutiny revealed that warranty period of these guns was up to February 2012 and was subject to proper storage and use of the product by the user in accordance with the prescribed condition of the products. However, the department placed an order with Ammunition Factory, Khadki, Pune for supply of ammunition (anti-riot rubber bullets) to be used in these guns in July 2012. Supply of ammunition was received in February 2014 *i.e.* after two years of expiry of warranty period. This resulted in non-testing of the guns within the warranty period.

Accepting the facts, State Government stated (November 2014) that guns were received in February 2011 and proforma invoice for ammunition was received in March 2012. Accordingly, order for purchase of ammunition was placed in July 2012.

2.2.8.2 Equipment

For handling communal, political and other agitational activities that could lead law and order problems, the police need to be well equipped.

As per State Government norms[13] (August 2007), 2,772 number of equipments[16] were required in 35 test-checked police stations, of which only 422 (15.23 *per cent*) number of equipments were available. Thus, there was a shortage of 2,350 (84.77 *per cent*) number of equipment. This indicates that police personnel were not fully equipped for their field duties.

State Government stated (November 2014) that police stations shall be equipped step-by-step in future.

2.2.8.3 Mobility

As per paragraph 7.7 (f) of MPF scheme guidelines (November 2010) the financial allocation for mobility support should be 25 *per cent*. Audit scrutiny revealed that allocation for mobility support remained at 18 *per cent*[17].

Mobility of police forces is essential for enhancing its operational efficiency in tackling law and order situations as well as for prevention and detection of crimes and ensuring security and surveillance. Increased mobility reduces response time and enhances operational efficiency of police forces.

GoI approved ₹ 120.91 crore for purchase of new vehicles in AAPs for the period 2009-14, against which, expenditure of ₹ 50.33 crore only was incurred. Scrutiny of procurement and utilisation of vehicles revealed the following deficiencies:

- ***Shortage of vehicles***

Scrutiny of records of DGP office revealed that against the total requirement of 8,132 vehicles as per State Government norms (December 2011)[13], only 5,880 vehicles were available leading to a shortage of 2,252 vehicles. Position as on 31 March 2014 is indicated in the table below:

S. No.	Particulars (as on 31 March 2014)	Number of Vehicles					Total
		Heavy Vehicle (HV)	Medium Vehicle (MV)	Light Vehicle (LV)	Motor Cycles (MC)	Others	
1	Requirement	438	575	2,287	4,585	247	8,132
2	Available	220	480	2,274	2,759	147	5,880
3	Shortage (Percentage)	218 (50)	95 (17)	13 (1)	1,826 (40)	100 (40)	2,252 (28)

Source: Information furnished by DGP

The maximum shortage was in HV (50 *per cent*) followed by MCs and other vehicles (40 *per cent* each).

[16] FRP Helmets: 771, Poly Carbonate *Lathi*: 771, Shield: 615 and Body Protector: 615.

[17] GoI approved ₹ 669.22 crore during 2009-14, out of which ₹ 120.91 crore approved for Mobility which was 18 *per cent* of total approved funds.

State Government replied (November 2014) that efforts are being made to fulfil the shortage of vehicles.

- ***Purchase of new vehicles for replacement purposes***

As per approved AAPs and scheme guidelines, replacement of unserviceable vehicles was to be met from State Budget and not from the funds provided under the scheme. Public Accounts Committee (PAC), under Recommendation No.4 of 185th Report of 2012-13 (Paragraph 3.2.9.1 of Audit Report–Civil 2006-07 - Government of Rajasthan), had recommended that in case of adjustment for replacement of unserviceable vehicles, documents in support of approval of GoI be submitted to PAC as the plan did not envisage replacement of unserviceable vehicles. No action had since been taken by the department and similar irregularity still persists.

It was, however, seen in Audit that of 1,203 vehicles (₹ 50.33 crore) purchased from scheme funds, 222 vehicles (18 *per cent*) costing ₹ 7.97 crore were used for replacement of old vehicles. Details of such replacement are shown in following table:

S. No.	Name of vehicle	Number of vehicles available as on 31.3.2009	Number of vehicles purchased during 2009-14	Total number of vehicles as on 31.3.2014	Actual number of vehicles available as on 31.3.2014	Number of old vehicles replaced
1	Heavy vehicles (HV)	174	19	193	193	-
2	Medium vehicles (MV)	399	112	511	480	31
3	Light vehicles (LV)	1,828	563	2,391	2,274	117
4	Motor cycles (MC)	2,355	478	2,833	2,759	74
5	Others	108	31	139	139	-
	Total	**4,864**	**1,203***	**6,067**	**5,845**	**222**

*Does not include the vehicles purchased by Sate Government (HV: 27; Others: 8)
Source: Information furnished by DGP

State Government, accepting the facts, stated (November 2014) that replacement of unserviceable vehicle was done in public interest. Reply was not in conformity with the guidelines as replacement of vehicles was to be met from state budget.

- ***Purchase of vehicles not covered under the scheme***

As per Paragraph 7.6 (g) of scheme guidelines, only operational vehicles like jeeps, motor cycles, medium /heavy vehicles were allowed to be purchased. Purchase of vehicles such as cars was not approved under the scheme guidelines. Audit scrutiny revealed that 66 cars[18] costing ₹ 3.78 crore were irregularly purchased during the period 2009-14, in contravention of approved AAPs and scheme guidelines despite shortage of operational vehicles.

State Government clarified (November 2014) that cars were purchased for special operations. Reply is not in consonance with the MPF Guidelines, because purchase of cars was inadmissible and the same was not approved in AAPs. Only operational vehicles like jeeps, motor cycles, medium/heavy vehicles for field units were approved by the GoI.

[18] Indigo: 29, Ambassador: 04, Swift Dzire: 32 and Maruti SX4: 01

- ***Vehicles retained by the Central Store***

Basic objective of the scheme is to augment the operational efficiency of the staff of field units. Audit scrutiny revealed that 11 operational vehicles[19] costing ₹ 0.53 crore were retained (2009-10: 4, 2010-11: 1, 2011-12: 1, 2012-13: 3 and 2013-14: 2) by the Central Store and not issued to the field units despite a shortage of 2,252 (28 *per cent)* operational vehicles.

State Government replied (November 2014) that a few vehicles were retained by DGP, based on necessity of police for special duties, emergency, breakdown, etc. Position has to be reviewed in the context of GoI instructions of February 2010 for ensuring that the vehicles are deployed in police stations, outposts and other operational areas only.

- ***Delay in allotment of vehicles***

Twenty-seven vehicles[20], purchased under the scheme, were allotted to the field units by the Central Store with a delay of 12 to 41 months. This indicated that before purchasing the vehicles, timely utilisation of vehicles was not ensured.

State Government stated (November 2014) that allotment of vehicles is made after assessing the ground position. In a few cases, allotment of vehicles was stopped in view of special circumstances.

2.2.9 Forensic Science Laboratories (FSL)

The State Forensic Science Laboratory (SFSL) at Jaipur and five Regional Forensic Science Laboratories (RFSLs) at Jodhpur, Udaipur, Kota, Bikaner and Ajmer were set up to help generate scientific evidence for criminal justice delivery systems. The FSLs provide valuable aid to investigation through analysis of forensic evidence. The MHA also suggested from time to time that the State Government ensure necessary trained manpower and fill up all vacant posts in FSLs. Scrutiny of the records of State Forensic Science Laboratory (SFSL), Jaipur and RFSL Jodhpur, revealed the following:

- ***Pendencies in analysis of samples***

PAC, under Recommendation No. 6 of 185th Report of 2012-13 (against Paragraph 3.2.11 of Audit Report (Civil) 2006-07) - Government of Rajasthan, had recommended for early settlement of pending crime cases, however, pendencies are still persisting. The Department replied (June 2014) that due to shortage of staff, cases could not be examined. However, sincere efforts were being made. Scrutiny of records of SFSL revealed that there were still 12,907

[19] LV: 9 and M/C: 2.
[20] 2009-10: 8 and 2010-11: 19.

cases pending for examination as on 31 December 2013. These are detailed below:

Year	Opening balance	Cases received during the year	Total cases	Cases examined during the year	Pending cases
2009	10,765	23,675	34,440	22,670	11,770
2010	11,770	23,533	35,303	21,468	13,835
2011	13,835	24,229	38,064	23,010	15,054
2012	15,054	25,565	40,619	26,847	13,772
2013	13,772	25,991	39,763	26,856	12,907

Source: Information furnished by State Forensic Science Laboratory (SFSL), Jaipur

The number of cases examined by the laboratories remained almost same in the last two years indicating stagnation in their capacity to handle additional cases. The pendency was attributed to shortage of technical staff which varied from 37 *per cent* to 53 *per cent* in various laboratories.

State Government stated (November 2014) that efforts are being made to fill up the vacant posts on contract basis. During 2012 the achievement was higher than 2011, which was the result of extra efforts made by the available staff.

- ***Delay in procurement of Gene Sequencer***

GoI approved (September 2006) ₹ 1.25 crore for procurement of 'Gene Sequencer', the main equipment of Deoxyribo Nucleic Acid (DNA) laboratory. State Government, however, released (October 2008) only ₹27.60 lakh. Subsequently, GoI was requested to issue a sanction (February 2010) to purchase the equipment against some of the items dropped from the scheme. GoI issued (March 2010) sanction and ordered purchase from State Trading Corporation (STC). STC supplied this equipment in January 2011 at a cost ₹ 1.22 crore. Thus, there was a delay of more than four years in placing order and the laboratory started functioning w.e.f. February 2011. It was seen at the state level that nine posts[21] sanctioned (October 2006) for running the DNA laboratory were not filled up till date (November 2014).

State Government stated (November 2014) that delay was due to non-earmarking of required funds for SFSL.

- ***Non-utilisation of forensic equipment for want of repairs/ maintenance***

During scrutiny of records of RFSL, Jodhpur, for the period 2009-14, it was noticed that various types of equipment worth ₹ 0.55 crore were lying out of order for lack of repairs and maintenance. Details are given in the table below:

(₹ in crore)

S.No.	Name of equipment	Not working since	Cost of equipment
1	High Performance Liquid Chromatograph	August 2011	0.23
2	Fourier Transform Infra Red Spectrometer	December 2010	0.15
3	High Performance Thin Layer Chromatograph	March 2012	0.17
	Total		**0.55**

Source: Information furnished by Joint Director, RFSL, Jodhpur

State Government stated (November 2014) that efforts are being made to get the equipment repaired.

[21] Assistant Director: 1; Senior Scientific Officer: 2; Senior Scientific Assistant: 2; Laboratory Assistant: 2 and Laboratory Attendant: 2

2.2.10 Availability of Infrastructure

- ***Residential and non-residential buildings***

Police stations symbolise the presence of the administration in the society. Buildings are the most important infrastructure of the police. The State Government accorded high priority to this component. As per Paragraph 7.7 (f) of MPF scheme guidelines (November 2010), the financial allocation of construction related activities should be limited to 50 *per cent* of total allocation.

Under the scheme, GoI released ₹ 97.28 crore to the executing agencies (RSRDCC/PWD) during the period 2009-14 for civil works. State Government also provided funds of ₹ 13.94 crore to RSRDCC. The position of 542 items of work allotted to RSRDCC (104 works: ₹ 34.82 crore) and PWD (438 works: ₹ 84.53 crore) during 2009-14, is given below:

(₹ in crore)

Name of Construction Agency	Number of works allotted	Sanctioned amount	Expen-diture	Period of delay in months against year in which work was sanctioned (as on 31 March 2014)
1	2	3	4	5
A. RSRDCC				
Works completed and handed over	45	10.89	10.08	2 to 12
Works completed but not handed over	19	3.56	3.23	2 to 15
Works remaining incomplete	2	1.10	0.89	8 to 35
Works not started	38	19.27	0.04	12 to 60
Total	**104**	**34.82**	**14.24**	
B. PWD				
Works completed and handed over	205	30.55	27.50	2 to 12
Works completed but not handed over	23	4.54	4.66	36 to 60
Works remaining incomplete	13	2.22	1.43	24 to 60
Works not started	197	47.22	1.93	12 to 60
Total	**438**	**84.53**	**35.52**	
Grand Total	**542**	**119.35**	**49.76**	

Source: Information furnished by RSRDCC Ltd.

It may be seen from the above table that 42 works (RSRDCC: 19 and PWD: 23) completed at a cost of ₹ 7.89 crore were not handed over (March 2014) even after 2 to 60 months of their completion. Further, 15 works (RSRDCC: 2 and PWD: 13) on which expenditure of ₹ 2.32 crore was incurred remained incomplete and 235 works (RSRDCC: 38 and PWD: 197) estimated to cost ₹ 66.49 crore were not started due to delay in finalising drawings, selection of sites *etc.,* though an expenditure of ₹ 1.97 crore had already been incurred.

Admitting the facts, State Government (November 2014) stated that 19 works have been completed and handed over and 21 works have now been started against 235 works. However, work wise details were not furnished.

- ***Shortage of staff quarters***

The National Police Commission had recommended (March 2000) provision of 100 *per cent* accommodation to police personnel. It was noticed that against 81,804 men-in-position as on 31 March 2014, there were only 25,649 staff quarters (31 *per cent)* available.

In the test-checked nine Police Districts, against men-in-position of 12,096, only 2,707 quarters (22 *per cent*) were available as of March 2014 leaving a shortage of 9,389 (78 *per cent*) quarters, as shown below:

S. No.	Name of SP Office	Men-in-position			No. of quarters available			Shortage of quarters		
		US*	LS*	Total	US*	LS*	Total	US*	LS*	Total
1	Tonk	121	1,307	1,428	32	421	453	89	886	975
2	Karauli	106	1,127	1,233	34	69	103	72	1,058	1,130
3	Churu	82	1,219	1,301	34	355	389	48	864	912
4	Jaipur West	134	713	847	27	102	129	107	611	718
5	Jhunjhunu	117	988	1,105	22	357	379	95	631	726
6	Jodhpur West	223	2,038	2,261	0	0	0	223	2,038	2,261
7	Jodhpur Rural	78	1,009	1,087	49	373	422	29	636	665
8	Jhalawar	96	1,243	1,339	64	389	453	32	854	886
9	Chittorgarh	143	1,352	1,495	48	331	379	95	1,021	1,116
	Total	**1,100**	**10,996**	**12,096**	**310**	**2,397**	**2,707**	**790**	**8,599**	**9,389**

*US: Upper Subordinate *LS: Lower Subordinate

Test check of 35 police stations revealed the position of the staff residing away from their respective duty points as under:

S.No.	Name of SP office	Selected Police Stations	Number of police personnel who are staying away from PSs	Distance from Police Stations			
				0 to 1 km	1 to 3 km	3 to 5 km	5 to 10 km
1	Tonk	4	69	44	25	0	0
2	Karauli	4	67	55	12	0	0
3	Churu	4	86	73	13	0	0
4	Jaipur West	3	134	4	0	38	92
5	Jhunjhunu	4	93	87	6	0	0
6	Jodhpur West	2	51	16	0	0	35
7	Jodhpur Rural	4	59	34	25	0	0
8	Jhalawar	5	66	48	0	0	18
9	Chittorgarh	5	103	84	19	0	0
	Total	**35**	**728**	**445**	**100**	**38**	**145**

Due to shortage of staff quarters the police staff had to stay far away from their working places, which could have an impact on their operational efficiency by way of attending to emergent cases.

State Government stated (November 2014) that for providing 100 *per cent* residential facilities to police personnel, proposals have been sent to BPR&D and further action will be taken on receipt of their sanction.

2.2.11 Monitoring

As per GoI letter dated 25 April 2001 and scheme guidelines, the State Level Empowered Committee (SLEC), headed by Chief Secretary of the State,

should hold meetings once in every month to monitor the preparation of AAPs, their implementation and monitoring of programmes. Audit, however, noticed that SLEC held only 10 meetings during the period 2009-14 as against the stipulated 60 meetings. As a result, crucial issues like mobility, weapons, incomplete constructions of buildings/quarters etc. were left unaddressed.

State Government stated (November 2014) that progress of police modernisation scheme is being monitored by the State Government and Department from time to time. Reply was not convincing as in absence of SLEC meetings monitoring could not be ensured.

2.2.12 Impact assessment

2.2.12.1 Increase in crime cases

The State Crime Branch is charged with the responsibility of detection and prevention of crime in the State. As part of this function, it supervises the investigation of all important cases. Audit reviewed the status of crime cases and revealed increasing trend of crimes and low pace of investigation as indicated below:

Increase in crime cases during 2009 and 2013 in the State

S.No.	Type of crimes	No. of cases reported during 2009 (January to December)	No. of cases reported during 2013 (January to December)	Percentage increase in crimes
1	Robbery	53	59	11
2	Loot	886	1,065	20
3	Cheating	5,294	5,783	9
4	Theft	22,144	28,928	31
5	Kidnapping	2,870	4,986	74
6	Misbehaviour	2,485	4,829	94

Source: Information furnished by Director General of Police

The above table shows that there was an increase in cases of robbery, loot, cheating, theft, kidnapping and misbehaviour, ranging from 9 to 94 *per cent* during the period 2009 and 2013. Though an expenditure of ₹ 165.18 crore had been incurred during 2009-14 from MPF scheme funds for modernisation of police force to equip them to effectively check the emerging challenges of internal security, there was increase in the number of crime cases.

State Government while accepting the facts stated (November 2014) that main increase was in misbehaviour cases though there was also an increase in false cases, due to which other cases are also delayed.

2.2.12.2 Response Time

To maintain law and order situation, it is necessary to prescribe maximum response time for police to reach the crime site. The DGP (Headquarters), Rajasthan, Jaipur fixed (November 2007 and July 2010), different response times for the rural and the urban police teams to reach the crime sites. For rural police, 15 minutes were allowed to the investigation officer for preparation and 5 minutes per kilometre to reach the site. For big cities (urban

areas) where police mobile van is connected to police control room the investigating officer is required to reach the crime site at once. Time allowed being three minutes per kilometre only. No time for preparation is allowed. In cases of serious nature of crimes *viz.* robbery, murder, rape, terrorism, serious road accidents etc, police should reach at the crime site immediately. Police stations were also required to record the response time in the crime register.

Test check of records of 35 police stations (1,000 cases) in nine selected districts for a period of two months (December 2009 and December 2013), revealed the following:

(in hours)

S. No.	Name of District	Number of selected Police Stations	Total number of cases reported in December 2009 and December 2013	Cases where response time was as per norms	Cases where response time was not as per norms				
					Reached within 12 hours	Response time taken between 12 and 48 hours	Response time taken between 48 and 120 hours	Response time taken between 120 and 412 hours	Cases where response time not recorded
1	Tonk	4	111	11	29	25	3	2	41
2	Karauli	4	98	-	10	16	18	6	48
3	Churu	4	160	-	2	-	-	-	158
4	Jaipur West	3	174	26	27	-	-	-	121
5	Jhunjhunu	4	142	-	-	-	-	-	142
6	Jodhpur West	2	77	-	-	-	-	-	77
7	Jodhpur Rural	4	61	-	9	3	3	-	46
8	Jhalawar	5	86	5	4	-	-	-	77
9	Chittorgarh	5	91	2	31	43	4	6	5
	Total	**35**	**1,000**	**44**	**112**	**87**	**28**	**14**	**715**

Source: Information furnished by PSs

The above table reveals that only in 4 *per cent* of cases police reached the crime sites well in time. Further, in 715 cases (72 *per cent*) police response time could not be worked out as necessary information was not recorded in crime register by Station House Officer (SHO). This shows deficiency in maintaining the crime register, registering and recording the response time. It also indicates that in most of the cases, instructions had not been followed which could have adversely affected the investigation process.

State Government admitted the facts (November 2014) and stated that instructions have been issued to the districts to reach the crime sites within the prescribed time.

2.2.12.3 Evaluation of the Scheme

Though the scheme has been in operation for the last 14 years, its evaluation was not undertaken at any stage by the State Government. An impact assessment in 8 States and 2 Union Territories[22] was conducted (January to March 2010) by BPR&D through Ernst & Young Private Limited, Gurgaon for the period 2000-10. As per their findings for the contiguous States of Rajasthan and Gujarat, which have international borders, following deficiencies were required to be fulfilled:

[22] Andhra Pradesh, Assam, Chhattisgarh, Jammu & Kashmir, Maharashtra, Orissa, Rajasthan, Uttar Pradesh, Chandigarh and Daman & Diu.

- timely completion and upgradation/maintenance of buildings was required;
- all weapons needed to be met through 'Modernisation of Police Force', weapon quality was not good and delivery was not timely;
- some more buses and trucks were needed;
- quality and quantity of equipment needed improvement;
- more communication equipment besides wireless were needed.

This broadly corroborates the conclusions drawn by audit in foregoing paragraphs.

State Government stated (November 2014) that the items are purchased on the basis of the availability of budget and quality of the items purchased is ascertained as per prescribed procedure.

2.2.13 Conclusions and Recommendations

The pace of modernisation of the police force was slow. Long term strategic plan was not prepared for effective implementation of the scheme.

The State Government needs to prepare a long-term strategic plan in view of the fact that Rajasthan has a long international border and its police force needs to remain prepared at all times.

There was a persistent shortage of modern weapons. Moreover, the weapons were largely lying in the Central Store which affected the functioning of police force at field level. There was a major shortage of basic equipment (like helmets, *lathi*, shield, body protectors) which provide the minimal support to the police force during their field duties and situations like movements, *dharnas*, rallies etc. Shortage of vehicles hampers mobility of police force which has adversely affected investigation processes and reduction in response time. Purchase of vehicles mainly for replacing unserviceable vehicles was the major reason for the shortage.

State Government should ensure procurement of modern weapons as per requirements of the scheme and their proper distribution to field units. State Government should also ensure that police personnel in field duties are provided with sufficient basic equipment.

The FSL procured costly equipment without planning for adequate manpower which has resulted in pendency of analysis of samples and consequential delay in investigation process.

State government should fill up the vacant posts in a time bound manner to improve the efficiency of the laboratories.

Department was facing shortage of staff quarters. Due to shortage of staff quarters, the police staff had to stay far away from their working places and

therefore was not readily available to attend emergent cases, which is not conducive for discharge of their duties. Works relating to residential buildings were either incomplete or were also not started.

State Government may strive to construct adequate numbers of staff quarters in a time bound manner to reduce the shortage, by pursuing the matter with BPR&D for sanction of additional residential facilities.

Due to fewer numbers of SLEC meetings, crucial issues like mobility, weapons, constructions of buildings/quarters, *etc.,* were not getting proper attention.

To ensure proper monitoring and implementation of the scheme, the SLEC should be headed by the functional head, directly responsible for implementation of the scheme.

Public Health Engineering Department

2.3 Quality of Drinking Water

Executive Summary

Rajasthan is basically dependent on ground water for drinking purposes. Large geographical areas of the state have chemical contaminants such as fluoride, nitrate, salinity *etc.* in water, making it unsafe for drinking purposes. Fast depletion in ground water reserves is deteriorating the water quality on chemical parameters. Most of the habitations of Rajasthan are problematic from the point of view of drinking water. Government of Rajasthan adopted the State Water Policy (SWP) in 2010, for water resource planning on a sustainable basis to balance demand and supply and improving quality. Though an initial survey by Government of India (GoI) named 'National Habitation Survey' was conducted in 2003, State Government did not conduct any state specific survey for upgradation of water quality in habitations.

Fluoride is prevalent in all districts of Rajasthan and has become a serious health hazard in 21 districts. For de- fluoridation of water State Government initiated 'Rajasthan Integrated Fluorosis Mitigation Programme (RIFMP)' in 2005, to be completed in three phases. However, targets of Phase-I of RIFMP were not achieved, while results of the Phase II were not compiled by the Government. Cases of non-operation/maintenance, non-monitoring of performance of de-fluoridation units under Phase II/III were noticed in Audit. Even after completion of phases-I and II of the programme, test results revealed that the problem of fluoride was persisting.

To address the problem of other contaminants, a project of Reverse Osmosis was undertaken belatedly by the department during 2012-13. A pilot project for installation of Reverse Osmosis (RO) plants was undertaken in four districts and subsequently, programme of installation of 1000 RO plants in 12 districts was taken up. Cases of improper working of such RO plants and non-monitoring of their performance were noticed.

Proper cleaning of drinking water reservoirs was not carried out. Assessment of chlorine demand for purchasing bleaching powder was not done before placing supply orders. Required standard tests, appropriate sampling for testing and periodic tests of available bleaching powder in stock were not conducted.

The laboratories set up for testing water samples did not have sufficient infrastructure/test facilities and qualified staff. Laboratories at block level were established in only 69 of 237 blocks. Targets of testing water samples

with Field Testing Kits were not achieved. The mobile laboratory was also not performing properly.

Introduction

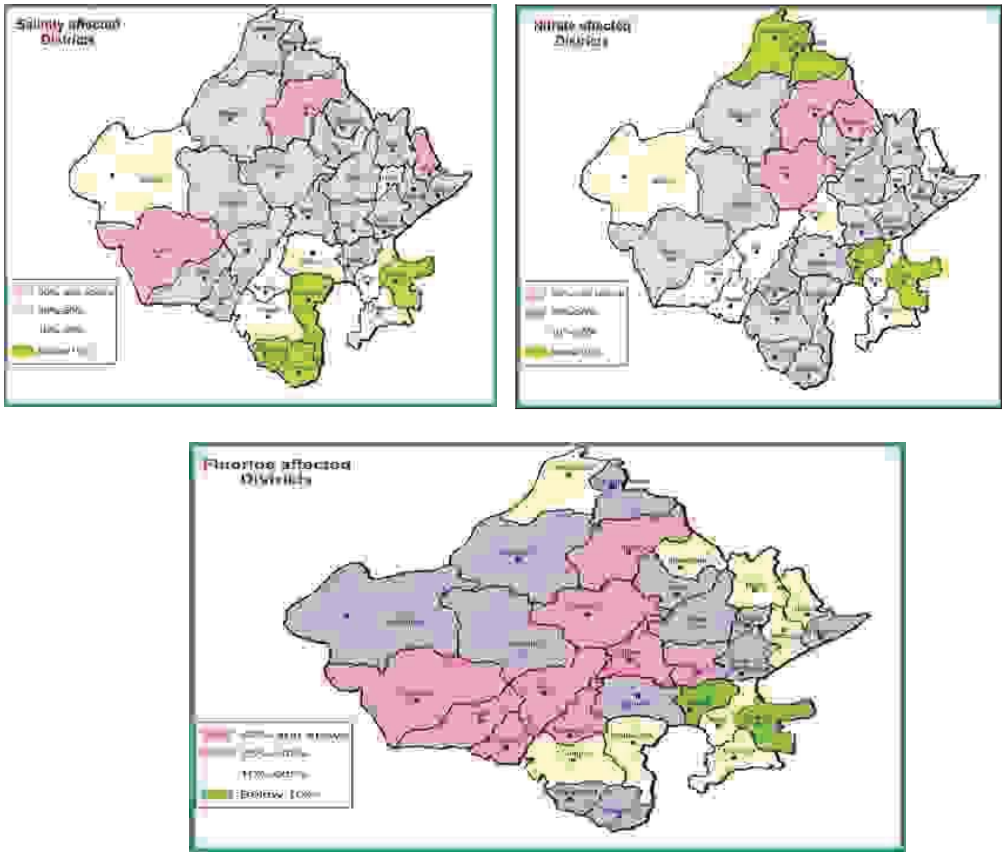
Potable water or drinking water is water, safe enough to be consumed by humans. Potable water should be free from pathogenic and chemical constituents, pleasant to taste and usable for domestic purposes. The quality of water depends on its chemical, physical and biological characteristics and is assessed against the standards framed to judge water quality. Excess of chemical contaminants causes chronic health risks through built up of heavy metals, whereas physical contaminants affect the aesthetics and taste of drinking water. Bacteriological contaminants in drinking water are a major cause of gastrointestinal diseases having significant impact on infant mortality rate and diarrhoeal deaths. Typically water drawn from any source (surface water or ground water) should be purified before its distribution for consumption.

The water supply schemes in Rajasthan are primarily dependent on ground water. Large geographical areas have chemical contaminants such as fluoride, salinity, nitrate *etc.* in water, making it unsafe for drinking purpose. The increased demand of water for agriculture, industrial and domestic uses is fast depleting the ground water reserves and deteriorating its quality on chemical parameters. Most of the habitations of Rajasthan are problematic from the point of view of potable water, and therefore, constant monitoring of the water quality in the water supply schemes is essential for safeguarding potability of water from chemicals and biological contaminations.

Status of water quality in Rajasthan

Rajasthan is a water scarce state with regard to availability of surface as well as ground water. It is largely dependent on ground water where quality does not generally confirm to the standards laid down for potable water. State Government adopted the 'State Water Policy (SWP)' on 17 February 2010, with the objective of integrating multi-sectorial approach to water resource planning, development and management of water resources on a sustainable basis to address critical issues of growing imbalance between demand and supply, depleting ground water resources, deteriorating quality, etc. Due to water scarcity and depleting ground water level, the quality of ground water is generally poor. State Government had evaluated (2000-2002) the quality of ground water, available in various districts, on the basis of their salinity, nitrate and fluoride values.

The position of contamination in habitations of various districts is depicted in the following maps:



Source: https://communities.acs.org/docs/DOC-4537

It may be seen from the above maps that there is large scale formation of salinity, nitrate and fluoride concentrations in a large number of habitations. To test the water quality, a network of laboratories has been setup by the State Government. Both State Government and Government of India (GoI) are implementing programmes for improving water quality in the state.

2.3.1 Organisational Structure

Public Health Engineering Department (PHED) is responsible for supply of safe drinking water in the State. The Principal Secretary, PHED is the Administrative Head of the Department, who is assisted by Chief Engineer (HQ), Chief Engineer (Rural) and Chief Engineer (Special Project).

Chief Engineer (HQ) is mainly responsible for 'Urban Water Supply and Sewerage Schemes' and also responsible for centralised procurement and supervision of other affairs. Chief Engineer (Rural) is responsible for 'Rural Water Supply Schemes' and drilling of wells. Chief Engineer (Special Project) supervises the activities of all the major urban and rural projects costing more than ₹ 25 crore.

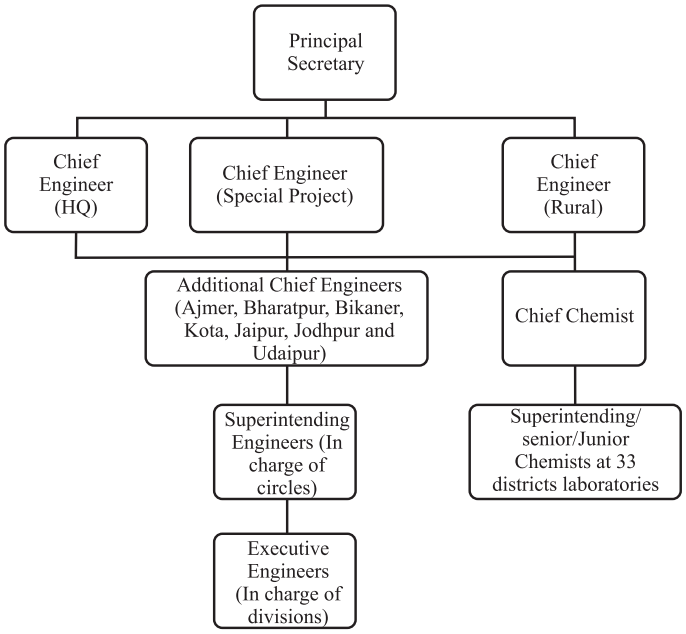
Rajasthan is divided into seven regions[23], each being looked after by Additional Chief Engineers (ACEs). The regions are further divided into

[23] Ajmer, Bharatpur, Bikaner, Kota, Jaipur, Jodhpur and Udaipur.

circles headed by Superintending Engineers (SEs) who are assisted by Executive Engineers (EEs) at Divisional level.

The Public Health Engineering Laboratory branch at state level is headed by Chief Chemist (CC) who is responsible for chemical and bacteriological testing of water supplied to the public and monitoring of its quality. District Laboratories in all 33 districts are headed by Superintending Chemists/Senior Chemists/Junior Chemists.

The organisational set up of the department is depicted in the following diagram:



2.3.2 Audit Objectives

Government of Rajasthan (GoR) adopted the 'State Water Policy (SWP)' to address critical issues of growing imbalances between demand and supply, depleting ground water resources, deteriorating quality and uncertainty in availability of water with increase in population. In the background of SWP, Performance Audit of quality of drinking water was conducted with the objectives to ascertain whether:

- Planning for providing quality drinking water was appropriate;
- Potable water was being provided as per norms laid down in 'Standard Specifications for Drinking Water' issued by 'Bureau of Indian Standards (BIS)' and 'Manual on Water Supply and Treatment' issued by 'Central Public Health and Environment Engineering Organisation (CPHEEO)';
- Adequate laboratory facilities had been provided for testing of drinking water; and
- The consumers' complaint/grievance redressal system was effective.

2.3.3 Audit Criteria

The sources of audit criteria were derived from the following:

- State Water Policy 2010;
- Indian Standard Specifications for Drinking Water, Methods of Sampling and Microbiological examination of water and Methods of sampling and testing (physical and chemical) for water issued by BIS;
- Implementation Manual on National Rural Drinking Water Quality Monitoring and Surveillance Programme (NRDWQM&SP);
- Manual on Water Supply and Treatment issued by CPHEEO; and
- Orders, Circulars and Notifications issued by PHED from time to time.

2.3.4 Audit Scope, Sampling and Methodology

Performance Audit (PA) covered the programmes and activities carried out by PHED during the period 2011-12 to 2013-14, for improving quality of drinking water. Ten districts were selected randomly after arranging all 33 districts in descending order, with maximum contaminated habitations (in terms of Fluoride, Salinity, Nitrate, Iron, Arsenic, etc.). Further, 23 blocks[24] (25 *per cent* of the total blocks in selected districts) having maximum contaminated habitations, were selected by arranging them in order of contaminated habitations. In addition, all offices of Superintending Chemists/Senior Chemists/Junior Chemists and divisions/sub-divisions corresponding to these districts were also covered in the PA, along with the offices of Chief Chemist and Chief Engineers for scrutiny of records and collection of information.

The audit objectives and methodology of PA were discussed with the Principal Secretary, PHED along with departmental officers during an entry conference held on 6 June 2014. An exit conference was also held on 20 November 2014 with the Secretary, PHED and other departmental officers, wherein audit findings were discussed in detail.

2.3.5 Acknowledgement

Audit acknowledges the cooperation extended by Government of Rajasthan, Chief Engineers, Chief Chemist and other concerned officers of PHED in conducting the performance audit.

[24] Barmer (Barmer and Sindhari); Bharatpur (Sewar and Nagar); Bhilwara (Asind, Bhilwara and Shahpura); Dungarpur (Aspur and Sagwara); Jaipur (Amber, Bassi, Chaksu and Sanganer); Jalore (Bhinmal and Raniwara); Jodhpur (Balesar and Osian); Nagaur (Nagaur and Riyan); Sriganganagar (Anoopgarh and Suratgarh) and Tonk (Newai and Uniyara).

Audit Findings

Audit reviewed in PA, the working of the programmes and activities for improving quality of drinking water, undertaken by PHED. Audit findings are organised into following sections:

- Adequacy of planning for providing quality drinking water;
- Measures taken for improving quality of drinking water;
- Laboratory facilities for testing of drinking water quality; and
- Redressal of consumers' grievances and Information, Education and Communication campaigns.

2.3.6 Adequacy of Planning for providing quality drinking water

The State Water Policy (SWP) envisaged ensuring provision of adequate potable water to all citizens both in urban and rural areas, with exploration of cost effective technologies for desalination of brackish water; improvement of domestic water quality by filtration, chlorination and de-fluoridation. It also envisaged review of habitation-wise data to plan upgradation of water quality.

Department of Drinking Water Supply (DDWS), Ministry of Rural Development, GoI, conducted a nationwide 'National Habitation Survey 2003' (NHS 2003), to facilitate the basis for developing future strategies for giving central assistance to the states. Subsequently, conducting of survey at an intervals of five years and uploading of habitation-wise online data was mandatory for the states. Necessary instructions were issued for the implementation of the above in February 2012.

Scrutiny of records of PHED revealed that review of habitation-wise data to plan upgradation of water quality was not done. State-specific survey of habitations was also not conducted after NHS 2003.

The State Government stated (December 2014) that yearly updation of data including water quality data was carried out, as per requirement of GoI, by the field offices and hosted on the website of GoI. However, the reply was silent on follow-up action taken on GoI instruction regarding conducting of survey at an interval of five years and instructions issued in February 2012.

SWP also envisaged determination of the departmental capacity to analyse, monitor and conform to various water standards. A rolling programme to improve the water analysis capability at district level was also to be initiated. Scrutiny of records of PHED revealed that neither review was done for determination of the departmental capacity to analyse, monitor and conform to the various water standards, nor was a rolling programme initiated to improve the water analysis capability at district level.

Apart from passing of SWP, the strategies with activities, timelines and resources for improving water quality, were not worked out by the

Department. Any concrete step taken by the department to identify new sustainable sources of potable water was not made available to audit. The schemes already in existence at the state level for improving water quality were continued.

2.3.7 Measures taken for de-fluoridation of ground water

High fluoride concentration leads to various health hazards like dental and skeletal fluorosis. Fluoride is prevalent in all 33 districts of Rajasthan and it has become a serious health hazard in 21 districts. State Government initiated 'Rajasthan Integrated Fluorosis Mitigation Programme (RIFMP)' in 2005 for de-fluoridation[25] of water. RIFMP provides installation of de-fluoridation units on hand pumps and tube wells for providing immediate and short to medium term relief to the affected habitations where water supply from reliable sources is not available. RIFMP was launched in three phases. The phasing was done on the basis of the fluoride concentration levels in water sources. Coverage of villages/habitations having drinking water sources with fluoride concentration ranging between 1.5mg/L and 5 mg/L and above were targeted in three phases as detailed below:

Phases (proposed period)	Fluoride range	Total Number of habitations (Villages and others) during 2005
First (2004 - 2005)	Above 5.0 mg/L	2,643
Second (2005 - 2007)	3.0 to 5.0mg/ L	7,699
Third (2007 – 2010)	1.5 to 3.0 mg/ L	12,955
Total		**23,297**

Source: PHED records

Phase-I of RIFMP was completed in February 2008. Details of results of activities undertaken under Phase-II were not compiled by the Government. Phase-III of the project was started during 2011-12. The various aspects of implementation of the RIFMP under three phases are discussed below:

2.3.7.1 Achievement under Phase-I

Under Phase-I, total 2,643 habitations with fluoride concentration above 5 mg/L were targeted to be covered. State Government intimated (December 2014) that 331 Hand Pump Attached De-Fluoridation Units (HPADFU) were installed and 1,403 Domestic De-fluoridation Units (DDFU) were distributed to the villagers at household level. It is seen that target of coverage of 2,643 habitations was not achieved though the phase was completed in February 2008.

[25] For de-fluoridation, activated alumina (media) is widely used to remove fluoride from drinking water which is a granular and highly porous material consisting essentially of aluminum trihydrate. Activated alumina can be regenerated for its reuse by a solution of lye (sodium hydroxide, sulfuric acid, or alum). The amount of fluoride leached from the water being filtered depends on contact period with the alumina filter media.

2.3.7.2 Operation/maintenance of Hand Pump Attached De-fluoridation Units installed under Phase-II

Details of activities under Phase II were not compiled by the department as of December 2014. However, during scrutiny of records of Executive Engineer, Dungarpur, it was noticed that Additional Chief Engineer, PHED, Udaipur awarded (November 2007) work of installation of HPADFU on 300 hand pumps, which included 226 hand pumps having fluoride concentration above 3 mg/L, in Dungarpur district. The contractor was required to operate and maintain HPADFUs for two years after their installation. The contractor installed all the HPADFUs and maintained them up to 19 December 2011. Since then, the work of operation and maintenance of these HPADFUs remained unattended for want of necessary sanction of the competent authority. Thus, the purpose of providing fluoride free water to the habitants was defeated.

State Government stated (December 2014) that proposals for extension of operation and maintenance of plants already installed, are under consideration.

2.3.7.3 Implementation of Phase-III

(i) Under Phase-III, the total number of habitations to be covered was 12,955. The supply and installation of 5,300 HPADFUs in six regions[26], with five year comprehensive operation and maintenance including defect liability period, was proposed during 2010-11, without prior identification of habitations where they were to be installed. Lowest bids of M/s Punj Llyod Limited (PLL) for all six regions were approved (January and February 2011). PLL installed 2,687[27] HPADFUs and left (2011-12) rest of the work. The department, neither took any action against PLL for deserting the work nor awarded the left over work to another contractor at the risk and cost of PLL. This resulted in non-achieving the objectives of providing fluoride free water to these habitations. Non-operation/maintenance of installed 2,687 HPADFUs also rendered them inoperative.

(ii) Monitoring of Tube well Attached De-fluoridation Plants

- ACE, Bharatpur issued (March 2011) work order for supply and installation of six[28] 'Tube well Attached De-fluoridation Plants (TWADFPs)' and their maintenance for five years. The contractor installed three[29] TWADFPs till March 2014 and the remaining three could not be installed as the locations were not found feasible for installation.

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[26] Ajmer: 1,200; Bharatpur: 300; Jaipur: 1,500; Jodhpur: 500; Kota: 300 and Udaipur: 1,500.

[27] Ajmer region: 888; Bharatpur region: 113; Jaipur region: 586; Jodhpur region: 255; Kota region: 269 and Udaipur region: 576.

[28] Bahaj, Baroli Choth (2 Numbers), Januthar, Shorawali (Deeg block) and Kaman (Kaman block).

[29] Baroli Chauth, Poonchari ka Lotha and Shyam dhakh.

- The contractor was required to test the water from a laboratory, before and after installation of TWADFPs and to submit monthly reports for their performance, regeneration or replacement of media, to respective EE. The department also was required to conduct tests regularly to monitor performance of TWADFPs. Scrutiny revealed that the contractor did not perform bacteriological test for *E-coli* and did not submit any monthly report. The department also did not conduct any tests regularly to monitor the performance of TWADFPs.

- Senior Chemist, Bharatpur, conducted a joint inspection of TWADFPs on 28 October 2013 and reported to EE, Bharatpur that the contractor was not conducting tests of raw and treated water regularly, not maintaining complaint register and not submitting monthly reports. Testing instrument for chemical and bacteriological tests was not available with the contractor and chlorination was also not being done at any of the TWADFPs. No action was initiated by EE to ensure compliance of the contractual provisions.

(iii) Presence of other parameters above the permissible limits

In Nagaur district, the work of installation of 771 TWADFPs, along with operation and maintenance for five years, was awarded (March 2011) to three contractors, where other parameters of water were within permissible limits *i.e.* Total Dissolved Solids (TDS): 2000 mg/L, Nitrate: 100mg/L and Chloride: 1500mg/L.

Scrutiny of 126 test reports provided to audit revealed that test results of output water in 21 tube wells showed parameters of TDS, Nitrate and Chloride above permissible limits. Accepting the facts, EE Merta City (Nagaur), intimated (July 2014) that due to acute problem of fluoride, TWADFPs were installed though other parameters were above permissible limits in these habitations. Thus, these 21 habitations were getting unsafe water even after installation of TWADFPs. There is a need for tackling the other parameters which were above the permissible limits.

2.3.7.4 Impact of Rajasthan Integrated Fluorosis Mitigation Programme

The State Government had initiated RIFMP in 2005 for mitigation of fluoride. Phase-I was completed in February 2008. Details of activities under Phase-II were not compiled by the department. Phase-III of the programme was started in 2011-12, which focused on reducing fluoride in habitations within the range of 1.5 to 3 mg/L.

Scrutiny of test result data of water samples from habitations in 23 test-checked blocks revealed that the problem of fluoride was persisting. The position of habitations having fluoride concentration levels above 3 mg/L

during 2013-14 is detailed in table below:

District	Name of Block	Number of habitations (2013-14)		
		Number of habitations from where samples were scrutinised	Number of habitations with fluoride concentration levels above 3 mg/L	*Per cent* (habitations with fluoride concentration levels above 3 mg/L)
Barmer	Barmer	841	74	8.80
	Sindhari	301	17	5.65
Bharatpur	Sewar	562	17	3.02
	Nagar	108	20	18.52
Bhilwara	Asind	810	102	12.59
	Bhilwara	624	87	13.94
	Shahpura	437	318	72.77
Dungarpur	Aspur	499	122	24.45
	Sagawara	639	27	4.23
Jaipur	Chaksu	1,436	381	26.53
	Sanganer	260	31	11.92
	Bassi	1,806	48	2.66
	Amber	1,139	4	0.35
Jalore	Bhinmal	499	66	13.23
	Raniwara	118	58	49.15
Jodhpur	Balesar	365	35	9.59
	Osian	1,119	82	7.33
Nagaur	Nagaur	267	110	41.20
	Riyan	265	111	41.89
Sriganganagar	Anoopgarh	254	2	0.79
	Suratgarh	442	6	1.36
Tonk	Newai	789	235	29.78
	Uniyara	344	48	13.95
	Total	**13,924**	**2,001**	**14.37**

Source: Department of Drinking Water website (http://indiawater.nic.in)

Thus, nearly 15 *per cent* of habitations in the test-checked blocks, had water sources having fluoride concentration above 3 mg/L, despite completion of Phases-I and II. As details of Phase-II were not compiled by the department and a number of HPADFUs installed in Phase-III were inoperative, the success of the programme is not susceptible of verification in Audit. .

State Government stated (December 2014) that the long term solution for mitigation of fluoride problem lies in bringing surface water from available dams.

2.3.8. Measures taken for desalination and nitrate removal

SWP envisaged exploration of various technologies for desalination of brackish ground water and evaluation of these technologies under field conditions by taking up pilot projects. To address this contamination, PHED belatedly undertook projects for installation of Reverse Osmosis[30] (RO) plants in various water quality affected habitations in 2012-13.

[30] Reverse Osmosis is a membrane permeation process for separating relatively pure water from a less pure solution. The solution is passed over the surface of an appropriate semi permeable membrane at a pressure in excess of the effective osmotic pressure of the feed solution. The permeating liquid is collected as the product and the concentrated feed solution is generally discarded.

A pilot project for installation of 35 RO plants was undertaken in four districts[31]. Work orders were issued (April-May 2013) to three contractors[32] for completing the installation work within a period of four months. As of April 2014, 32 RO plants were installed, while 3 plants in Jodhpur district remained to be installed. In the meantime (April 2013), CE (Rural) submitted a proposal to 'State Level Scheme Sanctioning Committee (SLSSC)' for installation of 1,000[33] RO plants in various water quality affected habitations in 12 districts[34].

Twenty-two districts in Rajasthan are severely affected with salinity (with 25 *per cent* and above habitations affected with salinity), whereas only 1,035 habitations were taken up in 12 districts. Thus, the projects of installation of RO plants are yet to be taken up for all the affected habitations.

2.3.8.1 Functioning of Reverse Osmosis Plants

(i) ACE, Bharatpur issued (April and August 2013) three work orders for providing, installation and commissioning of 133 RO plants of which 59[35] (six under pilot project and 53 from among 1,000 plants) were installed up to March 2014. Following observations were made in audit scrutiny:

- As per conditions of the contract, consistent performance of RO plants and 'Total Dissolved Solids (TDS)' ranging between 100 and 250 mg/L, was required to be maintained. The output water was also required to conform to the characteristics of IS: 10500[36] of Bureau of Indian Standards (BIS). The water quality was to be evaluated within a period of three months. It was noticed that all the prescribed tests specified in IS: 10500 were not conducted. Further, reports of PHE Laboratory, Bharatpur indicated that the chemical characteristics of the output water of eight[37] RO plants did not conform to standards of BIS and output water of RO plants had TDS more than 250 mg/L.

- Paragraph 4.1 of special conditions of contract envisaged that the contractors would submit monthly reports on performance of the RO plants to the EE. It was however, observed that contractors were not submitting the monthly performance reports to the EE, PHED Division Bharatpur. No action was taken by EE to enforce the contractual condition.

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31 Bharatpur: 6; Jhunjhunu: 10; Jodhpur: 15 and Karauli: 4.

32 M/s Water Mate Technologies Pvt. Ltd: 10 plants in Jhunjhunu district; M/s Doshion VWS Pvt. Ltd: 15 plants in Jodhpur district and M/s Water Life India Pvt. Ltd: 6 plants in Bharatpur district and 4 plants in Karauli district.

33 Of which 516 (Barmer: 36; Bharatpur: 130; Chittogarh: 7; Churu: 4; Jaisalmer: 4; Jalore: 27; Jhunjhunu: 12; Jodhpur: 62; Nagaur: 139; Pali: 50 and Sikar: 45) were installed as of April 2014.

34 Barmer: 160; Bharatpur: 300; Chittorgarh: 40; Churu: 25; Jaipur: 15; Jaisalmer: 40; Jalore: 40; Jhunjhunu: 60; Jodhpur: 130; Karauli: 30; Nagaur: 140; and Sikar: 20.

35 M/s Water Life India Pvt. Ltd: 6; M/s LVJ Project Pvt. Ltd: 9 and M/s Hi-Tech Water Solution Pvt. Ltd: 44.

36 IS 10500: 1991 Indian Standard drinking water-specification (First Revision).

37 Akata, Bansi Khurd, Bhosingha, Borai, Gagwana, Hasanpur, Lulhara and Nangla Bakhata.

- During analysis of samples, conducted by Senior Chemist, Bharatpur (January - June 2014), the output water from 16[38] RO plants showed bacteriological contamination. However, action taken by the department in the matter was not available on record.

(ii) In Barmer district, test of output water from 25[39] RO plants, conducted (April- June 2014) by District Laboratory, showed TDS more than 250 mg/L.

This indicated that installed RO plants (referred at (i) and (ii) above) were not working properly.

2.3.9 Measures taken for removal of bacteriological contamination

Chlorination of drinking water supply is a regular activity of PHED for its disinfection. It destroys or deactivates disease-producing micro-organisms (such as bacteria, viruses and amoebic cysts) in water, responsible for water borne diseases. Bleaching powder, used for chlorination, contains calcium hypochlorite, when mixed with water it decomposes and gives chlorine. The action exerted by bleaching powder is therefore similar to that of gaseous chlorine in water.

2.3.9.1 Chlorination of drinking water in schemes where direct boosting is done

CPHEEO Manual on Water Supply and Treatment, provided chlorination of groundwater before supplying to the consumers. Further, Chief Engineer (HQ) directed (October 2011) all field offices that where direct boosting[40] to the distribution system is done from tube wells (TWs), chlorination of water should be done by injecting hypochlorite solution.

In 11 out of 23 test-checked blocks, it was noticed that water was supplied through 365[41] TWs by directly boosting water to the distribution system but chlorination was not done.

2.3.9.2 Handling of Bleaching Powder

Following discrepancies were observed in the process of handling of bleaching powder:

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[38] Ajan, Akata, Aroda, Awar, Badesara, Bansi Khurd, Borai, Dandoo, Gagwana, Jharkai,, Kareeli, Kuchawati, Lulhara, Rasiya, Tamrer and Udaka.

[39] Alamsar, Arniyali, Bahalisar, Bhanwar, Bhavgiri Ka Metha, Bisasar, Boranka Tala, Dhanau, Dudhu, Galanadi, Goharka Tala-I, Khattu, Khume Ki Beri, Leelsar, Loharwa, Mitharau, Mitheka Tala-II, Ranasar Ka Tala, Sajimali Padamsingh, Sarala, Sawa, Sayed Ali Soz ka Tala, Sobhala Jetmalan, Talsar and Udasar.

[40] The purpose of the distribution system is to convey wholesome water to the consumer at adequate residual pressure in sufficient quantity at convenient points. The usual method of distribution is to store water in an elevated reservoir before supply to consumer through a network of pipelines. Sometimes due to certain reasons, water is directly pumped (boosted) in the network of pipelines from the tube well.

[41] Bharatpur district: Nagar (3); Sewar (42), Dungarpur district: Aspur (6); Sagwara (1), Jaipur district: Amber (61); Chaksu (1); Sanganer (82); Bassi (9), Sriganganagar district: Anoopgarh (1); Bhilwara district: Bhilwara (155) and Tonk district: Newai (4).

- To fulfil the primary purpose of chlorination and to minimise any adverse effects, it is essential that chlorine demand is measured to determine the amount of chlorine that must be applied to water to produce a residual chlorine of 0.2 mg/L at the consumer end. CE (HQ) directed (June 2011) that assessment of quantity of bleaching powder required be made before placing supply orders.

It was however, noticed that assessment of chlorine demand was not done before placing supply orders of bleaching powder by any of the divisions in the test-checked districts. Further, CE (HQ) had issued (July 2010) instructions that testing kits for checking of residual chlorine should be maintained for all the water supply schemes but in any of the sub-divisions of the test-checked districts, necessary testing kits were not available.

- IS 1065:1989[42] specifies requirements[43] of the characteristics in bleaching powder to be tested at the time of supply. It was however, observed that testing for available chlorine was only conducted for supply of bleaching powder in test-checked divisions. Tests for other characteristics (stability, moisture content and particle size distribution) were not conducted before the supplies were taken in the divisional stores.

State Government stated (December 2014) that necessary arrangements are being made to conduct tests for stability, moisture content and particle size distribution.

It was seen that supplies of 279 MT bleaching powder having less than specified chlorine content were accepted in 25 cases during 2011-14 in five[44] districts by respective Executive Engineers.

State Government stated (December 2014) that supplies of bleaching powder containing less chlorine, was accepted on part-rate by deducting proportionate amount from the invoice of the suppliers. The reply confirms that bleaching powder containing less chlorine than specified was accepted by respective Executive Engineers.

- IS 1065:1989 prescribes that for quality analysis of bleaching powder

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[42] IS 1065-1989; Indian Standard for Bleaching Powder, Stable-Specification; second revision 1990; reaffirmed 2003.

[43]

S. No	Characteristic	Requirement
1	Available Chlorine (*per cent* by mass) Minimum	32
2	Stability, loss of chlorine on the basis of initial available chlorine, Maximum	1/11
3	Moisture, *per cent* by mass, Maximum	0.5
4	Particle size, *per cent* in mass, Minimum	99.0

Source: Indian Standard for Bleaching Powder, Stable- Specification; second revision 1990; reaffirmed 2003; IS 1065-1989

[44] Barmer: 1 supply of 5 MT; Bharatpur: 12 supplies of 142 MT; Jalore: 1 supply of 12 MT; Jodhpur: 5 supplies of 70 MT and Tonk: 6 supplies of 50 MT.

sufficient[45] representative samples should be drawn from each lot[46] ensuring randomness of the samples.

Though the supplies were received in different batches, only one sample was drawn for each supply instead of drawing sufficient representative samples and, therefore, sufficient number of samples, representative of each lot, for conducting tests for assessment of quality of bleaching powder, was not drawn by Superintending/Senior/ Junior Chemist in any of the test-checked districts.

State Government stated (December 2014) that requirements of IS 1065:1989 are followed by the suppliers. Departmental testing is an additional check. The reply indicated that the department is not shouldering its responsibility of following the provisions of IS 1065:1989.

- Chief Engineer (HQ) issued instruction (July 2010) to all field offices to conduct tests, every 15 days on samples of bleaching powder, available in the divisional stores, to assess the loss of chlorine with passage of time.

It was noticed in all test-checked districts that instruction of CE (HQ) was not followed and tests for available chlorine were not conducted on bleaching powder available in the divisional stores.

2.3.9.3 Chlorination of pipelines after repair of leakages

CPHEEO Manual stipulates that when a section of water main is repaired, it should be assumed that the pipe is contaminated despite all precautions taken to prevent entry of foreign matter. Thus, the water main must be disinfected before it is put into service.

It was observed in 21[47] test-checked blocks that leakages in pipelines were repaired by either departmental labourers or through contractors. Respective Executive Engineers intimated that necessary disinfection was carried out after repair and before restoration of supply. However, test check by audit revealed that bleaching powder required for disinfection of pipeline was not issued to both departmental and contract labourers. Further, in five division offices[48] the provision of disinfection of pipeline after repair of leakages, was not included in the agreements to make it binding on the contractor to carry out necessary disinfection. This indicated that necessary instructions were not being carried out properly.

State Government accepted the facts and stated (December 2014) that necessary instruction are being issued to include the provision of disinfection of pipeline after repair of leakages in the agreements.

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[45] The number of containers to be selected from the lot depends upon the size of lot and shall be in accordance with Table 2, para B.2.2. of Annexure B of IS 1065: 1989

[46] All the containers in a single consignment of same grade of the bleaching powder drawn from a single batch of manufacture shall constitute the lot. If a consignment is declared to consist of different batches of manufacture, the batches shall be marked separately and groups of containers in each batch shall constitute separate lots.

[47] Barmer, Sindhari (Barmer district); Nagar, Sewar (Bharatpur district); Asind, Bhilwara, Shahpura, (Bhilwara district); Aspur, Sagwara (Dungarpur); Amber, Bassi, (Jaipur district); Bhinmal, Raniwara (Jalore district); Balesar, Osian (Jodhpur); Nagaur, Riyan (Nagaur district); Anoopgarh, Suratgarh (Sriganganagar) and Newai, Uniyara (Tonk).

[48] Division Anoopgarh; Division Dungarpur; District Rural Division-II, Jaipur; Division Suratgarh and Division Tonk.

2.3.9.4 Cleaning of Drinking Water Reservoirs

The main function of drinking water reservoirs is to cater for daily demands and especially peak demand of water. The ground level reservoir is generally a storage reservoir whereas, the elevated reservoirs are used principally as distributing reservoirs, which are usually constructed of Reinforced Cement Concrete (RCC). Corrosion of roof slab of RCC reservoirs due to the effect of chlorine is a common phenomenon. Chemical quality of water in reservoirs might deteriorate due to leaching from reservoir lining, collection of sediment, rust and chemical precipitates. Water quality in an Over Head Service Reservoir (OHSR) might also deteriorate due to excessively long periods of stagnant conditions. Regular cleaning of reservoirs is necessary for prevention of internal corrosion and improvement in quality of drinking water.

Chief Engineer (HQ) issued (August 1997) directions to all field offices for regular cleaning and disinfection of every drinking water reservoir (Clear Water Reservoir (CWR), OHSR and Ground Water Reservoir (GLR)), twice in a year and getting it verified by at least two eminent persons of the area. It was also directed that proper record should be maintained. In the test-checked districts, cleaning of reservoirs was carried out either through contractors or departmental labourers.

It was, however, observed that registers for periodical cleaning of reservoirs were not maintained in 21[49] out of 23 test-checked blocks. Though respective Executive Engineers intimated that regular cleaning of reservoirs was carried out, yet whether the procedure as prescribed in CPHEEO Manual on Operation and Maintenance for cleaning of reservoirs[50] had been followed, could not be verified in absence of proper records.

During further scrutiny of stock ledgers of bleaching powder, audit noticed that bleaching powder was not issued (2011-14) to the labourers and contractors in any of the 23 test-checked blocks, which was necessary for proper disinfection of the reservoirs. This indicated that proper cleaning of reservoirs was not carried out.

2.3.10 Jalmani Programme

To tackle excess iron, turbidity and bacteriological contamination and ensure availability of safe drinking water in the rural schools, Department of Drinking Water Supply (DDWS) introduced (September 2008) Jalmani programme, a centrally sponsored programme, which envisaged installation of simple stand-

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[49] Amber, Bassi, Sanganer (Jaipur district); Raniwara, Bhinmal (Jalore district); Suratgarh, Anoopgarh (Sriganganagar); Asind, Shahpura, Bhilwara (Bhilwara district); Nagar, Sewar (Bharatpur district); Barmer, Sindhari (Barmer district); Nagaur, Riyan (Nagaur district); Sagwara (Dungarpur); Osian, Balesar (Jodhpur); Uniyara, Newai (Tonk).

[50] Making alternate arrangement for water supply, collection of sample of water and silt/mud accumulated for biological analysis and for presence of snails and worms, washing the interior walls and floor with water hose and brushes and applying disinfectant (Supernatant of Bleaching powder) to the walls and floors before filling the reservoirs again.

alone water purification systems[51] in each school, to treat water at the point of consumption.

For Rajasthan, 3,443 schools were selected (January 2009), on the basis of weightage of rural population. The SLSSC decided (October 2011) to install ultra-filtration pot plants[52], in such rural schools which are covered with surface water or rain water sources and free from chemical contaminations but require treatment for bacteriological contamination and turbidity only. Consequently, CE (Rural) issued (April 2012) work order to a contractor for supply, installation and commissioning of 3000 ultra-filtration pot plants, in 13 districts[53] within six months and their maintenance for five years.

Scrutiny of records revealed that implementation of Jalmani was very slow as only 2,367[54] ultra-filtration pot plants were installed (March 2014), with an expenditure of ₹ 0.95 crore against a release of ₹ 6.85 crore by GoI, after a lapse of two years, against the 3,000 ordered.

State Government stated (December 2014) that delay in implementation of Jalmani was due to delay in finalisation of filtration technology to be adopted for Jalmani.

In Dungarpur district all the 483 plants were installed on hand pumps, despite the direction of CE (Rural) for installation of the plants on surface/rain water sources.

Moreover, outcome data of Jalmani was required to be entered on Integrated Management Information System (IMIS). Data retrieved (10 May 2014) from the DDWS' web page[55] showed installation of 523 plants, whereas the Department informed (May 2014) installation of 2,367 plants to audit. Thus, there was incoherency in data available on website and that provided by the department.

2.3.11 Insufficient Sanitary Surveys

Implementation Manual on National Rural Drinking Water Quality Monitoring and Surveillance Programme (NRDWQM&SP) (Paragraph 6.3) provides minimum periodicity of at least once annually, for carrying out sanitary surveys at key points (intake, treatment, disinfection, storage and distribution points) of infrastructure installations, based on population of habitations.

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51 The capital cost of stand-alone drinking water purification systems for 1000 litres per day output (at the rate of three litres per capita per day) was estimated not to exceed ₹ 40,000.

52 Ultra filtration pot technology was to cover schools where available water quality is acceptable chemically and ultra-filters shall serve the physical filtration (bacteriological contamination and turbidity) of water.

53 Bharatpur: 153; Bikaner: 106; Churu: 70; Dungarpur: 483; Hanumangarh: 146; Jaipur: 50; Jodhpur: 115; Kota: 134; Nagaur: 335; Sikar: 24; Sriganganagar: 365; Tonk: 40 and Udaipur: 979.

54 Bikaner: 390; Dungarpur: 483; and Udaipur: 1,494.

55 http://indiawater.gov.in/imisreports/nrdwpmain.aspx

It was observed that of the 7,26,507 schemes/delivery points/other sources, sanitary survey of 18,558 (yearly average of 6,186 i.e. 0.85 *per cent*) points was carried out during 2011-14. Thus, the surveys were far less than the required number indicating poor monitoring. Further, regularity of carrying out sanitary survey could not be verified in absence of segregated data as prescribed in Manual of NRDWQM&SP.

2.3.12 Laboratory facilities for testing of drinking water quality

PHED has set up a network of laboratories for testing of water samples with District Level Laboratories (DLL) in each district, one mobile laboratory and one State Level Laboratory (SLL). Annual targets for testing of water samples by these laboratories are also allotted by Chief Chemist (CC) in state plan.

The laboratories also carry out tests under National Rural Drinking Water Quality Monitoring and Surveillance Programme (NRDWQM&SP) with funds received from GoI. NRDWQM&SP focuses on institutionalised mechanism by strengthening of district laboratories, establishing block level laboratories, water testing at *Gram Panchayat* (GP) level with Field Test Kit (FTK) and allied activities[56]. A comprehensive web based Integrated Management Information System (IMIS)[57], has been introduced by DDWS. The data generated from testing of water samples is available on the website of DDWS.

2.3.12.1 Insufficient infrastructure/test facilities in State Level Laboratory

NRDWQM&SP provides that SLL must procure infrastructure for more precise and specialised tests which would not be possible in DLLs.

Scrutiny revealed that SLL, Jaipur, did not have its own facilities/infrastructure like space, equipments, reagents and manpower and it was using facilities of the DLL, Jaipur. Instruments[58] specifically required in SLL for conducting tests for chemical parameters[59], heavy metals[60], microbiological parameters[61] and specific parameters[62] were not available in SLL. Thus, SLL was not functioning as a specialised institute and as an aid to DLLs for more precise and specialised tests.

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[56] Periodical sanitary survey of key points of water supply schemes, IEC activities, HRD activities, data reporting, water testing documentation and O&M of the FTK including refilling etc.

[57] The State Governments enter the physical and financial progress online on a monthly basis and update the habitation wise data on annual basis.

[58] Atomic Absorption Spectrophotometer, Inductively Coupled Plasma Optical Emission Spectrometry, Milipore Filtration assembly with a Vacuum pump, DO meter, GC-MS/HPLC, Uranium Analyzer, PCR Machine, Deep Freezer (-20^{o}C), Arsenic testing instrumentation

[59] Nitrite, Silica, Sodium, Potassium, Boron, Calcium, Magnesium

[60] Copper, Chromium, Cadmium, Lead, Nickel, Arsenic, Mercury, Barium, Zinc, Antimony, Selenium, Silver and Molybdenum

[61] E-coli, MS2 phase, and V. Cholera

[62] Pesticide Residues, Radioactive elements, Cyanide, Poly Aromatic Hydrocarbons, Polychlorinated Biphenyls, Chloramine, Phenolic compounds, Anionic Surfactant/Detergent/MBAS, Trihalomethanes and N-Nitrosodiethyl Amine

State Government stated (December 2014) that the work of strengthening of SLL by making it equipped with other required testing equipments including that for heavy metals is under process.

2.3.12.2 Insufficient infrastructure/testing facilities in District Laboratories

The DLLs in test-checked districts were not fully equipped with the required equipments as shown in ***Appendix 2.3***. Facilities for tests of physical, chemical and microbiological parameters were not available ***(Appendix 2.4)***. Though, equipments for testing of Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Flame Photometer for testing of sodium, potassium etc. were available in the DLLs, Tonk and Bharatpur, no test were carried out as necessary training for operation of these equipments was not provided to the staff.

Further, equipment for preservation of samples beyond 24 hours were not available with the DLLs in any of the test-checked districts.

2.3.12.3 Establishment of block level laboratories

NRDWQM&SP manual provides for establishment of block level laboratories for authentic water quality data, as it is practically impossible to test all the drinking water sources of the villages in district laboratory. It was, observed that during 2011-14, laboratories were established in only 69 blocks[63] (14 districts) out of 237 blocks (33 districts). These laboratories were also not operational up to 2012-13 and only 27,937 tests were carried out during 2013-14 in 45 block level laboratories (nine districts).

2.3.12.4 Shortage of staff in laboratories

Chief Chemist intimated (February 2014) that additional posts in various categories were required on the basis of workload in the laboratories. Position of staff required, sanctioned posts and men-in-position in 33 laboratories is given in ***Appendix 2.5*** which shows that:

- A number of technical posts had not been sanctioned at all or less number had been sanctioned. No post of microbiologist had been sanctioned in any laboratory. Further, limited posts of sample collectors and senior laboratory assistants had been sanctioned.

- Necessary administrative posts like Data Entry Operator had also not been sanctioned.

- No refresher/training courses were conducted for laboratory staff during the period 2011-14 in any of the test-checked districts.

Thus, inadequate staff in laboratories adversely affected their general performance.

[63] Ajmer: 8; Alwar: 7; Barmer: 2, Bikaner: 2; Dausa: 4; Hanumangarh: 1; Jaipur: 13; Jalore: 2; Jhunjhunu: 8; Jodhpur: 5; Pali: 2; Sikar: 7; Sriganganagar: 4 and Udaipur: 4.

2.3.12.5 Mobile Laboratories

Mobile laboratory was required to be established under NRDWQM&SP manual, for facilitating effective water quality surveillance programme, especially in hilly/far flung areas and areas from where water samples cannot be brought to the stationary laboratory within stipulated time.

Scrutiny of tests conducted by Mobile Laboratory, Jaipur revealed that out of 24,625 total tests carried out during 2011-14 merely 2,623 (11 *per cent*) tests were conducted in rural areas. Further, 16,118 (65 *per cent)* tests were conducted for determination of residual chlorine. Thus, the mobile laboratory was not performing the activities of effective water quality surveillance, envisaged in NRDWQM&SP Manual.

Senior Chemist intimated (May 2014) that function of mobile laboratory was to cross-check samples taken by DLLs and also investigation of water quality in public fairs and complaint cases. Reply was not convincing as mobile laboratory was not carrying out functions assigned in the Manual. Data for tests conducted by mobile laboratory during 2011-14, were also not uploaded on IMIS.

State Government stated (December 2014) that mobile laboratory is being used for emergency situations like public fairs or to support DLLs. The reply indicated that mobile laboratory was not being used for performing functions of water quality surveillance as envisaged in NRDWQM&SP manual.

2.3.12.6 Sampling of Water for Analysis

As per NRDWQM&SP manual, all samples were to be labelled properly, mentioning complete and accurate data, for hosting details of their testing on IMIS. However, in the test-checked districts, complete details of sources were not available. Year-wise database for individual water sources/schemes with reference to date of collection was not maintained either in division office or DLLs in the test-checked districts.

- Polyethylene containers were to be cleaned by filling with Nitric Acid/hydrochloric acid, before using for water sample collection. It was observed that in all the test-checked districts, cleaning agents (Hydrochloric Acid/ Nitric Acid) for proper cleaning of sample containers were not available. Scrutiny of stock ledger of DLLs and sub-divisions also revealed that proper containers were not available and discarded bottles of packaged drinking water were being used for taking samples.



Samples received in discarded bottles of packaged water at district laboratory, Tonk

- Training for collection of samples was not imparted to staff deployed in any of the test-checked blocks during 2011-14 except Balesar block of Jodhpur district. Thus, proper sampling by trained personnel could not be ensured.

- Taking cognizance of a newspaper report regarding presence of uranium in excess of permissible limit in 42 *per cent* of water samples in seven districts, Regional Director, Department of Atomic Energy, Jaipur requested (January 2013) Chief Chemist to make available water samples for examination. Audit noticed that in two test-checked districts (Nagaur and Jodhpur), no samples were collected as the matter could not be resolved between the concerned EE and Senior Chemists.

2.3.12.7 Analysis of Water Sample through Field Testing Kits

The Field Testing Kits (FTKs) are basically meant for qualitative assessment of water to help the consumers to have a general idea about the water which they are using by identifying unsafe water supply system immediately. FTKs were to be provided to village level grassroots workers such as health personnel/Accredited Social Health Activists (ASHAs) for testing water quality of all drinking water sources in rural areas. The following irregularities were noticed in distribution of FTKs, refilling reagents (FTKs were to be replenished with reagents when the original reagents exhaust) and tests conducted through these FTKs:

- Analysis of water sources, tested through FTKs revealed that out of total 7,24,231 water sources in the rural area, an average of 45,913 (6.34 *per cent)* water sources were tested during 2011-14 (***Appendix 2.6***), when all the water sources should have been tested once in a year.

- The position of targets for sample testing with FTKs and distribution of FTKs and their refills during 2011-14 is given below:

Activity	2011-12		2012-13		2013-14	
	Target	Achieve-ment	Target	Achieve-ment	Target	Achieve-ment
Target of samples tested with FTKs	9,51,258	57,014 (5.99 *per cent*)	5,90,316	58,396 (9.89 *per cent*)	1,75,110	1,22,940 (70.21 *per cent*)
Number of FTK refills to be provided	9,280	0	0	0	0	0
Number of FTKs to be distributed	4,43,522	0	0	0	0	0

Source: Department of Drinking Water website (http://indiawater.nic.in)

From the above table, it emerges that neither the targets for sample testing were achieved, nor the FTKs and their refills were provided to the grassroots workers at the village level, resulting in the users not getting an immediate assurance about the quality of water consumed.

- Against the provision of mandatory cross checking of at least 30 *per cent* of the water samples tested at village level with FTK by DLLs, it is seen

that only 12, 21 and 6 *per cent* samples were cross checked by DLLs during 2011-12, 2012-13 and 2013-14 respectively in the test-checked districts ***(Appendix 2.7)***.

2.3.13 Replacement of old pipelines

The life and durability of pipelines depends on several factors including inherent strength of pipe material, manufacturing process along with quality control, handling, transportation, laying and jointing of pipelines, condition of soil surrounding the pipeline and quality of water it carries. Manual of Water Supply and Treatment issued by CPHEEO states that where the quality of water it carries is non-corrosive, the normal life of pipeline is considered as 30 years.

Audit scrutiny revealed that pipe line of 2,410 kilo metres in 50 water supply schemes of urban and rural areas in 18 test-checked blocks, was more than 30 years old, of which only 64 kilo metres of pipe line was replaced. Thus, only 2.66 *per cent* pipe line was replaced and periodical replacement of the rest of the old and worn out pipe lines was not carried out.

State Government stated (December 2014) that replacement of pipeline older than 30 years was not possible due to financial constraints.

2.3.14 Redressal of consumers' grievances

Consumers' complaints/grievances were being registered by the department through Online Grievance Redressal Tracking System (OGRTS) as well as conventional manual records and being redressed through departmental employees or contractors.

2.3.14.1 Online Grievance Redressal Tracking System

OGRTS is a web based application under mobile government (m-Government)[64] initiative and registers grievances using the service channel (telephone, web and mobile). The timelines for redressal are defined as per Rajasthan Guaranteed Delivery of Public Services Act[65](RGDPSA), 2011. The departmental functionary updates the action.

- During the period 2011-14, total 88,483 online complaints were received through OGRTS (***Appendix 2.8***). Average *per cent* of redressal within the prescribed three days' time was only 41 *per cent*. No action to ensure the redressal of complaints of consumers within prescribed time limit was available on record.

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[64] m-Government, is the extension of e-Government to mobile platforms, as well as the strategic use of government services and applications which are only possible using cellular/mobile telephones, laptop computers, personal digital assistants (PDAs) and wireless internet infrastructure.

[65] RGDPSA ensure that public services are delivered to the citizens by all State Departments in a transparent, timely, efficient and responsible manner.

- To the contrary of the directions (November 2007) of CE (HQ), the concerned sub divisions in all the 23 test-checked blocks, disposed of complaints received through OGRTS for polluted water, without testing the samples for water quality. Cases of persistent complaints by non-satisfied consumers were also noticed in test-checked blocks.

2.3.14.2 Pursuance of manual complaints

Secretary, PHED issued (September 2006) instructions to maintain a register for complaints received and action taken for redressal and repairs/restoration of water sources, leakages be responded within maximum time of 48 hours. During audit it was observed that in all the 23 test-checked blocks, though complaints register was maintained yet they were not in proper format and corresponding dates of disposal and remedial action taken for redressal was not mentioned. The register was not reviewed by any superior officer during the period 2011-14, as a result, effective monitoring of complaints could not be ensured.

State government stated (December 2014) that instructions had been issued to field officers for timely redressal of consumers' complaints.

2.3.15 Information, Education and Communication campaigns

Department of Drinking Water Supply (DDWS) issued guidelines for effective Information, Education and Communication (IEC) campaigns during 2010 with the objective to create awareness at grassroots level and involving community through organising grassroots level awareness camps, inter-personal communications campaigns, mass media campaigns such as audio visual programmes and distribution of documents/pamphlets. It was however, observed that only 15 grassroots level awareness camps and four inter personal communications campaigns were organised only in Jhunjhunu district during 2011-14. No IEC activities were carried out in other districts during 2011-14.

2.3.16 Conclusions and Recommendations

Rajasthan is basically dependent on ground water for drinking purposes, large areas of the state have chemical contaminations and depletion in ground water reserves is deteriorating the water quality. 'Rajasthan Integrated Fluorosis Mitigation Programme (RIFMP)' was initiated by the State Government in 2005 for mitigation of fluoride. State Government adopted State Water Policy in 2010 for water resource planning on a sustainable basis. A project of Reverse Osmosis was also undertaken during 2012-13 to address the problem of other contaminants. However, several shortcomings still remain to be addressed.

After initial survey in 2003 by NHS, State Government did not conduct any subsequent surveys of habitations having poor quality of drinking water. In the absence of comprehensive data, it is not possible to plan upgradation of water quality.

Government should ensure periodic survey to identify habitations for upgradation of water quality.

The State Government failed to fully implement the RIFMP programme. Despite the fact that the Phase-III of the programme is under implementation, there were a large number of habitations with high fluoride concentration levels.

The measures taken to remove the other contaminants by installing RO plants, were implemented belatedly in 2012-13 and it covered only 12 districts. A number of problems were seen in the functioning of RO plants.

State Government should ensure completion of the targets/activities under RIFMP for improving domestic water quality by de-fluoridation of water. Steps need to be taken to expand the coverage of RO plants in all the affected habitations. State Government should monitor functioning of all devices, including RO plant, to ensure supply of potable water.

Chlorination was not done in schemes where water is supplied by directly boosting water from tube wells. It was seen that assessment of chlorine demand before purchase of bleaching powder was not done. Required standard tests, appropriate sampling for testing and periodic tests of available stock of bleaching powder were not conducted. Samples from point of leakages in pipelines were not taken and chlorination of pipelines after repairs was not done.

State Government should ensure proper and regular disinfection of potable water and follow the standards formed by BIS in procurement of bleaching powder.

State/district level laboratories were not provided with sufficient infrastructure/test facilities and qualified staff. Block-level laboratories were not established in all blocks. Distribution and utilisation of field testing kits for testing quality of drinking water at the village level was also poor. Targets fixed for testing water samples at village level were not achieved.

State Government should provide water testing facilities in laboratories with qualified manpower to ensure supply of safe drinking water. Requisite number of FTKs should also be procured and distributed to village level functionaries.

There was delay in redressal of consumers' complaints and registers of consumers' complaints were not maintained. Sufficient number of programmes were not organised for creating awareness among people.

States Government should ensure redressal of consumers' complaints within the timeframe.