Chapter II

Compliance Audit Observations

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Animal Husbandry Department

2.1 Realisation of cost of Animals

2.1.1 Introduction

Animal Husbandry Department (AHD) is entrusted with the responsibility of all aspects of livestock and poultry development like production, processing, breed improvement of cattle, marketing of livestock and poultry and their products through augmentation of production of milk, meat, eggs and wool, etc.

With the objective of breed improvement of cattle livestock, the Department implemented five schemes involving distribution of animals to beneficiaries (cattle farmers) through Direct Benefit Transfer (DBT) of funds in the ratio of 75:25, with the State Government paying 75 *per cent* of the cost of the animal as subsidy, and the beneficiary paying the remaining 25 *per cent*. The details of the schemes are tabulated below in **Table 2.1.1**

Table 2.1.1: Details of Schemes

Sl. No.	Name of the Scheme	Year of inception	Eligible beneficiaries	Type of animal provided	Unit cost (in ₹)	Subsidy[1]
1	Samunnat Scheme	1999-2000	Cattle farmers of all categories	One buffalo bull	45,000	75 *per cent* of the unit cost
2	Nandishala Scheme	2006-07	Cattle farmers of all categories	One cow bull of imported breed from other States	25,720	75 *per cent* of the unit cost
			Cattle farmers of all categories	One cow bull of indigenous breed of MP	18,260	75 *per cent* of the unit cost
3	Male Goat Scheme	2008-09	Cattle farmers of all categories	One male Goat	8,300	75 *per cent* of the unit cost
4	Male Sukar Scheme	1992-93	Cattle farmers belonging to Scheduled Caste category only	One male Sukar/Pig	5,000	75 *per cent* of the unit cost
5	Sukar Trai Scheme		Cattle farmers belonging to Scheduled Tribe category only	One male and two female Sukar/Pigs	15,000	75 *per cent* of the unit cost

(Source: Information provided by the Directorate)

The task of supplying animals to the beneficiaries was entrusted to Madhya Pradesh State Livestock and Poultry Development Corporation (MPSLPDC[2]), a State Public Sector Undertaking, responsible for the management and development of livestock (Supplier Agency). Although there was no written MOU or formal agreement between AHD and the Supplier Agency for the supply of animals, the latter was to supply the animals on the basis of administrative approval of the schemes by the AHD.

The *modus operandi* for selection of beneficiaries and implementation of the schemes was as follows:

- In Samunnat, Male Goat, Male Sukar and Sukar Trai schemes, the application submitted by the beneficiary is first approved by the *Gram Sabha* and at a later

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[1] 75 *per cent* subsidy is applicable from April 2018. Prior to April 2018, subsidy under the Schemes was 80 *per cent*, except in the case of Male Sukar & Sukar Trai Schemes, where 75 *per cent* subsidy already existed.

[2] Functions under AHD.

stage, it is further approved by the *Janpad Panchayat*. Finally, *Zila Panchayat* approves the list of selected beneficiaries.

- In Nandishala scheme, the beneficiary submits application to the *Gram Panchayat*. At block level, Veterinary Extension Officer obtains the approval of *Janpad Panchayat*. Thereafter, Dy. Director of Veterinary Services obtains approval of selected beneficiaries from *Zila Panchayat* as per the availability of budget.
- The Department assigns physical and financial targets for each of the schemes to its district offices.
- On receipt of the targets and necessary funds, the district offices select beneficiaries for the Schemes
- After the beneficiary deposits 25 *per cent* of cost of the animal in his/her bank account, the district office credits the amount of Government subsidy to the beneficiary's bank account and places order with the supplier agency.
- Once the animals are supplied, the beneficiary is required to withdraw the amount of subsidy (75 *per cent*) along with his/her contribution (25 *per cent*) from the bank account and remit the amount to the district office through a Demand Draft (DD) towards payment of the cost of animals to the Supplier Agency.

2.1.2 Funding of the Schemes

During the period 2016-17 to 2018-19, State Government allocated ₹ 51.02 crore for these five schemes; against this, an expenditure of ₹ 48.26 crore was incurred. The year wise breakup of allotment and expenditure is given in **Table 2.1.2** below:

Table 2.1.2: Year-wise and Scheme-wise allotment and expenditure

(₹ in lakh)

Sl. No.	Schemes		2016-17	2017-18	2018-19	Total
1	Nandishala	Allotment	384.56	545.67	565.58	1,495.81
		Expenditure	384.56	526.53	439.04	1,350.13
2	Samunnat	Allotment	781.92	885.96	906.86	2,574.74
		Expenditure	781.92	825.48	898.42	2,505.82
3	Male goat	Allotment	363.27	249.46	254.00	866.73
		Expenditure	363.27	249.00	204.18	816.45
4 & 5	Male Sukar and Sukar Trai	Allotment	54.26	53.62	57.00	164.88
		Expenditure	54.26	53.62	45.60	153.48
Total		**Allotment**	**1,584.01**	**1,734.71**	**1,783.44**	**5,102.16**
		Expenditure	**1,584.01**	**1,654.63**	**1,587.24**	**4,825.88**

(Source: Information provided by the Directorate)

2.1.3 Audit Approach

Audit of implementation of the scheme was conducted between August 2019 and November 2019 to ascertain whether:

- the cost of animals distributed under these schemes was being paid to the Supplier Agency appropriately and timely, and
- there were adequate controls to prevent misuse of subsidy amount by the beneficiaries.

Audit findings were benchmarked against the criteria derived from guidelines of the schemes and instructions issued by the Department regarding implementation of the schemes.

Audit covered a period of three years from 2016-17 to 2018-19 for scrutinising records relating to subsidy credited to beneficiaries' bank accounts and payments made to the Supplier Agency against the animals distributed.

The schemes are being implemented in all 52 districts of the State. Out of these, 18 district offices were selected on the basis of stratified random sampling method. The Directorate of Animal Husbandry was also selected.

An Exit Meeting was held on 07 August 2020 at Government level to discuss the audit findings. The responses of the Government during the Exit Meeting and its written replies were incorporated appropriately in the report.

2.1.4 Audit Findings

Significant audit findings with regard to implementation of the schemes are discussed in the succeeding paragraphs:

2.1.4.1 Targets and supply of animals

There was no set mechanism for fixation of targets for distribution of animals in the districts. Targets were being fixed by the Department even when the envisaged number of animals during the previous years' were not distributed. Due to non-supply of adequate number of animals by the Supplier Agency, targets fixed for supply in a year could not be achieved. Status of targets and distribution of animals during the three-year period 2016-19 is shown in **Table 2.1.3** below:

Table 2.1.3: Status of distribution of animals

(No. of animals)

Year	Targeted number of animals to be distributed to the beneficiaries	No. of animals distributed	Animals pending distribution (percentage of pendency)
2016-17	4,558	3,899	659 (14)
2017-18	3,211	2,360	851 (27)
2018-19	3,060	1,333	1,727 (56)
Total	**10,829**	**7,592**	**3,237 (30)**

(Source: Information provided by District offices)

Audit scrutiny revealed that the main reason for backlog in distribution of the animals to the beneficiaries was due to the Department assessing the requirement of animals at the district level without obtaining any inputs from the field level and fixing targets in an adhoc manner. This, coupled with having a single supplier agency and lack of coordination with it, led to a situation where the annual targets for distribution of animals to the beneficiaries could not be achieved.

In response, Government stated (June 2020) that targets for distribution of animals would be fixed as per requirement of livestock at district level. It was further stated that co-ordination with the Supplier Agency would be developed and option of alternative agencies for timely distribution of animals would be considered.

2.1.4.2 Issue of indents for supply of animals

(i) Non-issue of indents as per requirements

There were no laid-down instructions or guidelines regarding issuance of indent to MPSLPDC for supply of animals. However, after selection of intended beneficiaries for a particular scheme, indent was supposed to be issued to procure the requisite numbers of animals.

It was observed in Audit that formal indents were not issued to the Supplier Agency for supply of animals in all cases. In several cases, district field offices gave telephonic instructions to the Supplier Agency for supply of animals. Scheme-wise summary of requirement of animals worked out by the 18 sampled Dy. Directors of Veterinary Services (DDVSs) and issue of indent to MPSLPDC by them during 2016-17 to 2018-19 are shown in **Table 2.1.4** below:

Table 2.1.4: Requirement of animals and supply against indent

(No. of animals)

Sl. No.	Scheme	Indent to be issued	Indent actually issued	Total animals Supplied	Supply without indent	Animals supplied against indent	Short supply against indent
1	**2**	**3**	**4**	**5**	**6**	**7 (5-6)**	**8 (4-7)**
1	Samunnat	2,789	1,736	2,029	634	1,395	341
2	Nandishala	2,600	1,676	1,379	489	890	786
3	Male Goat	4,753	2,853	3,794	1,203	2,591	262
4	Male Sukar	319	187	175	54	121	66
5	Sukar Trai	368	0	215	215	0	0
Total:		**10,829**	**6,452**	**7,592**	**2,595**	**4,997**	**1,455**

(Source: Information provided by District Offices)

As can be seen from the above Table, MPSLPDC supplied 2,595 animals even without receiving a formal written indent. Conversely, it had not supplied 1,455 animals despite receiving a formal indent. Out of 18 districts sampled in audit, only three[3] districts offices issued indents as per requirement of animals. Three[4] other districts offices had not issued a formal indent for supply of animals during 2016-19 under any of the schemes. Out of 2,595 animals supplied without issue of indent, 1,606 animals were supplied in these three districts alone.

In response, Government stated (June 2020) that the issue raised by Audit had been taken seriously and instructions had been issued to all the DDVSs to issue indents to the Supplier Agency for timely supply of animals.

(ii) Delayed supply of animals against indent

Government has not set any time limit to MPSLPDC for supply of animals after issue of indent. It was noticed that there was a delay in supply of animals in cases where indent was issued. Where supply was made without issuing indent, delay could not be ascertained, as date of issue of indent was not available to establish the same. The scheme-wise position of supplied animals during 2016-19 in all the 18 sampled districts is shown in **Table 2.1.5** below.

[3] Datia, Indore and Katni.

[4] Anuppur, Ashoknagar and Mandla.

Table 2.1.5: Delay in supply of animals

No. of animals (*per cent*)

Sl. No.	Name of Schemes	Indent issued	Animals supplied against indent	Supply of animals where indent was issued			
				Within a month	Up to six months	Six months to one year	More than one year
1	Samunnat	1,736	1,395	446 (31.97)	543 (38.92)	351(25.16)	55 (3.94)
2	Nandishala	1,676	890	54 (6.08)	450 (50.56)	196 (22.02)	190 (21.34)
3	Male goat	2,853	2,591	660 (25.47)	1,230 (47.47)	442 (17.06)	259 (10.00)
4	Male Sukar	187	121	35 (28.93)	86 (71.07)	0	0
5	SukarTrai	0	0	0	0	0	0
Total		**6,452**	**4,997**	**1,195 (23.91)**	**2,309 (46.21)**	**989 (19.79)**	**504 (10.08)**

(Source: Information provided by District offices)

It was observed that only 1,195 animals (23.91 *per cent)* were supplied within one month from the date of issue of indent. The remaining animals were supplied with delays ranging from one month to more than one year, with the maximum delay being up to 34 months. There was nothing on record either in the Directorate or in the sampled DDVS to evidence follow up from the Department with the Supplier Agency in this regard.

Government stated in reply (June 2020) that the matter was viewed seriously and all the DDVSs were being instructed to contact the supplier agency for ensuring timely supply of animals.

2.1.4.3 Non-realisation of the cost of distributed animals

GoMP instructed (June 2010) that after distribution of animals, cost of animals (subsidy + beneficiaries' share) would be paid to the Supplier Agency through DD by the beneficiaries with the help of AHD. Further, the cost of animals in the bank accounts of the beneficiaries would be restricted only for payment of distributed animals.

There was no laid down procedure as to how the Department was to ensure the availability of amount equal to cost of animal in the bank account of the beneficiaries. The details of cost of animals not recovered in the 18 sampled districts (as of November 2019) is shown in **Table 2.1.6** below:

Table 2.1.6: Details of cost of animals not recovered

(₹ in lakh)

Sl. No.	Name of Scheme	No. of distributed animals	Cost of the animals	Amount received		Amount yet to be paid	
				No. of animals	Amount	No. of animals	Amount
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	Samunnat	2,029	913.05	1,667	748.93	362	164.12
2	Nandishala	1,379	314.60	944	216.30	435	98.31
3	Male Goat	3,794	292.37	2,927	228.10	867	64.27
4	Male Sukar	175	08.75	88	04.33	87	04.42
5	SukarTrai	215	32.25	137	20.59	78	11.67
Total		**7,592**	**1,561.02**	**5,763**	**1,218.25**	**1,829**	**342.79**

(Source: Information provided by District offices)

From the above Table, it can be seen that the cost of 1,829 out of 7,592 animals distributed to the beneficiaries amounting to ₹ 3.43 crore (21.95 *per cent* of total cost), in the 18 sampled districts was yet to be paid by the beneficiaries. Cost of 1,033 out of 1,829 animals was pending for payment to the Supplier Agency due to unauthorised withdrawal of subsidy by the beneficiaries from their bank accounts for purposes other than for payment to the Supplier Agency. The reasons for non-payment to the Supplier Agency are shown below in **Table 2.1.7**:

Table 2.1.7: Reasons for non-realisation of the cost of animals

Name of Scheme	No. of beneficiaries from whom animal cost was to be recovered	Reasons for non-realisation of the cost of animals			
		No. of beneficiaries who withdrew amount from their bank accounts	No. of beneficiaries who refused to pay animal cost	Cost was received from beneficiaries but not paid to Supplier (Nos.)	Other reasons[5] (Nos.)
Samunnat	362	220	64	34	44
Nandishala	435	242	115	23	55
Male Goat	867	488	215	123	41
Male Sukar	87	78	0	0	9
SukarTrai	78	5	69	0	4
Total	**1829**	**1033**	**463**	**180**	**153**

(Source: Information provided by District offices)

As can be seen from the above Table, cost of 180 animals amounting to ₹ 28.30 lakh was received by field officers[6] from beneficiaries in four[7] districts but not deposited in the Supplier's account. Thus, the possibility of personal use of this amount cannot be ruled out. No action was initiated against 1,496 (1,033 + 463) beneficiaries who unauthorisedly withdrew the cost of animals from their bank accounts or refused to pay the cost of animals. In Anuppur district, the cost of 153 animals was not realised due to non-cooperation of bank and beneficiaries.

On this being pointed out, Government accepted (June 2020) that the main reason for non-realisation of cost of distributed animals was unauthorised withdrawal of subsidy from the bank accounts by the beneficiaries. Government further stated that the DDVSs were instructed to initiate action against such beneficiaries and field officers who misused the money.

2.1.4.4 Delay in realisation of cost of animal

Instructions issued by GoMP (30 June 2010) are not clear with regard to the timeframe for realisation of payment from the beneficiaries after supply of animals. Analysis of delay in payment by the beneficiaries after receiving the animals is depicted in **Table 2.1.8** below:

Table 2.1.8: Delay in realisation of cost of animals

(No. of animals)

Sl. No.	Name of Scheme	Payment of cost of animals				
		Within one month of supply	Up to six months after supply	Six months to one year	More than one year	Total
1	Samunnat	504	887	180	96	1,667
2	Nandishala	213	515	139	77	944
3	Male Goat	764	1,610	319	234	2,927
4	Male Sukar	23	37	21	7	88
5	SukarTrai	32	85	9	11	137
Total		**1,536**	**3,134**	**668**	**425**	**5,763**

(Source: Information provided by District offices)

From the above Table, it can be seen that the cost of only 1,536 animals, i.e. 27 *per cent,* had been recovered from the beneficiaries within a month.

[5] Non-cooperation of bank and beneficiaries

[6] Veterinary Assistant Surgeon, Veterinary Extension Officer, Assistant Veterinary Field Officer.

[7] Ashoknagar, Rajgarh, Shajapur and Sheopur.

Government stated in reply (June 2020) that all DDVSs were instructed to realise the cost of animals from the beneficiaries at the time of distribution of animals.

As per instructions issued (June 2010) by Government, the amount relating to cost of animals in the bank accounts of the beneficiaries was to be restricted only for payment of distributed animals. In this regard, the Department was expected to write a letter to the Banks to restrict the amount equal to cost of animal in the account of the beneficiary until payment is made to the Supplier Agency. However, it was observed that the letter for such a restriction was written to banks only in respect of 3,618 beneficiaries (out of a total of 9,865[8] beneficiaries, i.e. for 36.69 *per cent*) and action taken by the bank in this regard was not monitored by the Department. As a result, 1,496 beneficiaries had unauthorisedly withdrawn amount of cost of animal from their accounts or refused to pay; no action was taken against them by the Department.

Government stated (June 2020) in reply that the matter has been taken seriously and all the DDVSs were instructed to regularly monitor the misuse of subsidy amount lying in the beneficiaries bank account. It was further stated that the Department would request the banks to co-operate with the DDVSs for implementation of the schemes.

2.1.4.5 Amount of subsidy lying idle in bank accounts of beneficiaries

During 2016-19, a total of 3,102 animals were not distributed to beneficiaries, whereas, the subsidy amount of ₹ 5.53 crore was already deposited in the beneficiaries' bank accounts in all the 18 sampled districts. The cost of animals was to be paid to the Supplier Agency only after distribution of animals. Due to non-distribution of animals to the beneficiaries, a huge amount of subsidy was lying idle in the bank account of beneficiaries. Reasons for non-distribution of the animals to the indented beneficiaries are shown in **Table 2.1.9** below:

Table 2.1.9: Reasons for non-distribution of animals

Sl. No.	Scheme	No. of cases where subsidy was deposited	No. of beneficiaries to whom animal was not distributed	Subsidy amount lying idle in bank account (₹ in lakh)	Reason for non-distribution of animals to beneficiaries	
					Short supply of animals by supplier (Nos.)	Beneficiaries refused to take animals (Nos.)
1	Samunnat	2,506	708	245.48	618	90
2	Nandishala	2,435	1,137	222.89	978	159
3	Male Goat	4,237	960	61.55	769	191
4	Male Sukar	319	144	05.40	139	5
5	SukarTrai	368	153	17.21	141	12
Total		**9,865[9]**	**3,102**	**552.53**	**2,645**	**457**

(Source: Information provided by District offices)

Due to subsidy amount lying idle in beneficiaries' bank account, and considering that the beneficiaries had deposited the entire amount in their regular bank account, the possibility of unauthorised withdrawal of subsidy amount provided by the Government cannot be ruled out.

Government stated in reply (June 2020) that animals were not distributed to beneficiaries due to their non-supply by the Supplier Agency and DDVSs of all districts were being instructed to distribute the balance animals of previous years, which were pending for

[8] Total 10,829 beneficiaries, but subsidy amount of 964 beneficiaries were directly transferred to supplier agency.

[9] Total 10,829 beneficiaries, but subsidy amount of 964 beneficiaries were directly transferred to supplier agency.

distribution. Government further stated that the Department would coordinate with the Supplier Agency and ensure timely distribution of animals in future.

2.1.4.6 Irregular mode of payment of cost of animals

State Government instructed (June 2010) that after distribution of animals, cost of animals (subsidy and beneficiaries' share) should be paid to the Supplier Agency through a DD. The details of mode of payment to supplier agency are shown in **Table 2.1.10** below:

Table 2.1.10: Mode of Payment to supply agency

(₹ in lakh)

Name of Scheme	Total amount received for distributed animals	Description of received amount			
		E-payment/ Transfer from beneficiaries A/C	E-payment/ Transfer from personal A/C of field officers	Cash	DD
Samunnat	748.93	111.2	56.91	257.89	322.93
Nandishala	216.30	18.38	21.26	60.92	115.74
Male Goat	228.10	33.37	15.82	72.28	106.63
Male Sukar	4.33	1.76	0	0.34	2.23
Sukar Trai	20.59	4.95	0.89	11.95	2.80
Total	**1,218.25**	**169.66**	**94.88**	**403.38**	**550.33**

(Source: Information provided by Districts offices)

It was observed that ₹ 4.03 crore was deposited in Supplier Agency's account in cash and ₹ 94.88 lakh was transferred electronically from personal account of field officers, which was against the instruction of GoMP. In both cases, it was clear that cash was received from beneficiaries by the field officers and kept by them in cash or in personal bank accounts for the purpose of depositing in Supplier Agency's account. In such a situation, the possibility of personal use of this amount cannot be ruled out.

The details of date-wise receipt of payments from beneficiaries were not available in the records of the 18 sampled district offices. Further, reconciliation was not done with the records of the Supplier Agency to verify that the paid amount was actually received by it and accounted for. It was further observed that out of the amount of ₹ 5.50 crore paid through DD, ₹ 4.44 crore was paid to the Supplier Agency with a delay of one to two months from the date of issue of DD.

Government accepted the audit observation and stated that the matter has been taken seriously and all the DDVSs were instructed to act as per guidelines issued by the Government in this regard.

2.1.4.7 Monitoring mechanism

The Department had no mechanism to monitor proper implementation of the schemes. No reports regarding the schemes were being called for by the Directorate from the district offices and by the latter, from field offices. Further, no data was readily available in the Directorate regarding implementation of schemes up to field level.

Moreover, while field offices (Block offices) are responsible for distribution of animals to the beneficiaries, they were not submitting monthly and quarterly reports to the DDVSs to appraise them about the implementation of the schemes.

Government replied (June 2020) that monthly report regarding implementation of schemes would be called for from the district offices and it will institute an effective mechanism to ensure transparency from field offices.

2.1.5 Conclusion

Schemes for distribution of animals were introduced by GoMP with the objective of improving the breed of animals. Government subsidised the cost of animals for the beneficiaries; however, due to poor design of the scheme and ambiguity in guidelines with regard to mode of assessment of requirement, timeframe for indenting, supply and distribution of the animals, and lack of control on unauthorised withdrawal of subsidy amount by the beneficiaries, against the distributed animals costing ₹ 15.61 crore under these schemes during the period 2016-19, ₹ 3.43 crore was pending realisation from the beneficiaries. Reasons for non-realisation of cost of animals were unauthorised withdrawal of amount of subsidy by beneficiaries, refusal of payment by the beneficiaries, non-deposit of animal cost by Departmental officers and non-cooperation by the bank and the beneficiaries.

There was no set mechanism for distribution of animals after crediting subsidy amount in the bank account of beneficiary. Lack of instructions/guidelines regarding realisation of cost of animals from the beneficiaries resulted in non-realisation of cost of animals. Due to non-supply of animals to selected beneficiaries, subsidy of ₹ 5.53 crore was lying idle in the bank accounts of beneficiaries. The Department had not formulated any guidelines for monitoring the realisation of cost of animals under the schemes and it could not ensure transparency and accountability in the implementation of the scheme at the field level.

2.1.6 Recommendations

- Department should determine the targets for supply and distribution of animals on the basis of assessment of requirement from field units; it should also ensure better coordination with the Supplier Agency for this purpose.
- Department should devise a mechanism to restrict the withdrawal of subsidy amount by the beneficiaries before supply of animals.
- Internal control mechanism should be strengthened to ensure that the envisaged objectives of providing animals to identified beneficiaries at a subsidised cost are achieved in a transparent manner.

Farmer Welfare and Agriculture Development Department

2.2 Implementation of Surajdhara and Annapurna Schemes

2.2.1 Introduction

Farmer Welfare and Agriculture Development Department (FW&ADD) plays a vital role in the socio-economic development of the State by initiating various measures to increase the production and productivity of agricultural crops in the State and increase the income of farmers by taking modern agricultural techniques to the fields.

The State Government has taken several initiatives to improve the production and productivity in Agriculture sector over the years. Two such schemes initiated for improving the production and thereby, the economic condition of marginal and small farmers belonging to Scheduled Caste and Scheduled Tribe (SC/ST) categories –

(i) **'Surajdhara'** scheme- to provide seeds of profitable pulses /oilseeds; and

(ii) **'Annapurna'** scheme- to provide seeds of cereals for improvement of production.

The Directorate of Agriculture is the nodal Office for implementation of the schemes. At the field level, the schemes are being implemented by the Deputy Directors, Agriculture (DDAs) who are assisted by Sub Divisional Officers (SDOs) and Senior Agriculture Development Officers (SADOs). The schemes are implemented at the village level by the Rural Agriculture Extension Officer (RAEO).

The schemes involve supply of seeds to farmers with a subsidy component of 75 *per cent* of the cost of seeds by the Department and the remaining 25 *per cent* of the cost is to be borne by the farmers. The three components of the schemes are given below:

2.2.1.1 Exchange of seeds programme

In this programme, the Department will supply certified seeds[10], required for crop area up to one hectare, to the eligible farmers against equal quantity of seeds of same crop, given by the farmer. If a farmer gives seeds of different crops, cost of the seeds given by the farmer should be equal to 25 *per cent* of the cost of the seeds supplied by the Department. Otherwise, a farmer can procure seeds by paying 25 *per cent* of the cost of the certified seeds by availing 75 *per cent* grant, limited to ₹ 1,500 per beneficiary**.**

2.2.1.2 Seed self-reliance programme

Under this programme, certified seeds required for 1/10 of the land in possession of a farmer will be supplied to him, so that during the following year, the farmers can have sufficient quantity of highly productive and profitable seeds of the crop.

2.2.1.3 Seed production programme

Farmers within a circumference of 10 km of the Government Agricultural Farms (GAF) and registered with the Seed Certification Agency will be supplied improved seeds, like foundation/certified seeds. Seed production would be done by a farmer at least in 0.2 hectare of land, maximum up to one hectare. The seeds produced will be graded, processed, packed and stocked in the GAF. After procuring the seeds from the farmer, these will be distributed to eligible farmers at a prescribed price by the Department.

[10] Certified seed is the progeny of foundation seed and its production is supervised and approved by certification agency.

2.2.2 Financial Management

The Director issues allotment of budget to DDAs and physical targets for implementation of the schemes. However, physical targets can be changed at the District level on the basis of availability of allotment, up to the limit of financial provisions in each component of the schemes. The DDAs incur expenditure on seed production programme and seed self-reliance programme, as per directions of the Director. The allotment and expenditure incurred under the schemes during the three-year period 2016-17 to 2018-19 are shown in **Table 2.2.1** below:

Table 2.2.1: Details of allotment and expenditure on the schemes

(₹ in crore)

Year	Surajdhara (Pulses/ Oilseeds)		Annapurna (Cereals)	
	Allotment	Expenditure	Allotment	Expenditure
2016-17	43.52	41.54	44.86	43.95
2017-18	50.00	48.91	51.00	48.65
2018-19	55.42	52.66	55.33	53.17
Total	**148.94**	**143.11**	**151.19**	**145.77**

(Source: Information provided by the Directorate, FW&ADD)

2.2.3 Audit Approach

Audit of implementation of Surajdhara and Annapurna schemes was conducted from June 2019 to October 2019 to ascertain whether the implementation was as per laid down norms and guidelines.

Audit findings were benchmarked against the criteria derived from guidelines of the schemes and instructions issued by the Department regarding implementation of the schemes.

Audit covered the implementation of the schemes during the three-year period 2016-17 to 2018-19. Audit methodology involved a scrutiny of the relevant records in the Directorate of Agriculture and offices of Deputy Director, Agriculture (DDA), in 20 out of 52 Districts[11]. The Districts were selected for detailed audit through stratified random sampling method by considering expenditure, risk factors and area/region.

2.2.4 Audit Findings

Significant findings with regard to implementation of the schemes are discussed in succeeding paragraphs:

2.2.4.1 Planning

(i) Component-wise planning not done

Guidelines of the schemes issued by FW&ADD (May 2000) stipulate that the DDAs should emphasise execution of all the three components of the schemes *viz.* exchange of seeds programme, seed self-reliance programme and seed production programme. The financial and physical targets, and appropriate budgets are allocated by the Director to the DDAs, who redistribute the targets for each Block under their jurisdiction. The physical and financial targets given by the Director and actual achievements in respect of the selected Districts are summarised below. Details are given in **Appendix 2.2.1**.

[11] Alirajpur, Anuppur, Ashoknagar, Badwani, Bhind, Dhar, Dindori, Harda, Jabalpur, Jhabua, Katni, Khargone, Narsinghpur, Nimach, Rajgarh, Sagar, Seoni, Shajapur, Sheopur and Shivpuri.

Table 2.2.2: Physical and financial targets and achievements

Year	Surajdhara Scheme				Annapurna Scheme			
	Target		Achievement		Target		Achievement	
	Financial (₹ in crore)	Physical (number of beneficiaries)	Financial (₹ in crore)	Physical (number of beneficiaries)	Financial (₹ in crore)	Physical (number of beneficiaries)	Financial (₹ in crore)	Physical (number of beneficiaries)
2016-17	18.55	92,760	16.65	1,17,721	18.98	94,894	16.85	1,64,626
2017-18	19.88	1,32,389	19.27	1,42,233	20.15	1,22,015	18.68	1,52,752
2018-19	21.23	1,41,552	20.28	1,42,481	21.48	1,43,190	20.78	1,54,765

(Source: Allotment letters issued by the Director and Progress Report produced by DDAs)

The above table indicates that more beneficiaries were covered under both the schemes against the target set by the Director. While the Seed self-reliance and Seed production components were introduced in the schemes with effect from 1999-2000, the component wise targets had not been fixed.

Component-wise analysis of utilisation of funds in the 20 selected Districts revealed that 77.42 *per cent* of funds (₹ 87.10 crore) were utilised for execution of the component 'Exchange of seeds' under both the schemes, as summarised below and detailed in **Appendix 2.2.2**

Table 2.2.3: Number of Districts in which each component of scheme was implemented

Year	Number of Districts which has utilised the budget		
	Exchange of seeds Programme	Seed Self-reliance Programme	Seed production Programme
2016-17	16	13	3
2017-18	15	12	2
2018-19	15	11	2
***Per cent* of total budget utilised**	**77.42**	**21.94**	**0.64**

(Source: Information provided by the selected DDAs)

It was observed that component of Exchange of seeds programme was more popular among the farmers despite the fact that seeds produced in the other two components can be used up to two to three years, not only by the beneficiary farmers who produce these, but also by the other farmers since these are beneficial for longer duration. It was seen that the DDAs utilised only 22.58[12] *per cent* of budget in these two components of the schemes.

However, the Department did not receive any seeds in exchange from the farmers, as the latter had paid 25 *per cent* of cost of seeds to avail the benefit of the component of the schemes rather than provide seeds to the Government in exchange for certified seeds.

On this being pointed out in audit, Government stated (July 2020) that regular review of the programme will be done at Directorate level and component wise targets will be fixed according to the demand of District offices to achieve the objectives of the programme.

The Department must concentrate on this issue so that benefit of all the components may be derived by a large number of beneficiaries. Utilisation of 77.42 *per cent* of total funds only on one component, i.e. exchange of seed programme, deprived the farmers of the benefits of other two components of the schemes.

(ii) Irregular selection of beneficiaries

According to the guidelines of the schemes, the primary selection of farmers will be done by the RAEO and a list of farmers of one and a half times of the targets will be forwarded to SADO, who carries out the due diligence and obtains approval of the final list of

[12] Seed Self-reliance Programme is 21.94 *per cent* and Seed Production Programme is 0.64 *per cent*.

beneficiary farmers from the Agriculture Standing Committee (ASC) of *Janpad Panchayat* at Block level.

During scrutiny of records of 18[13] out of 20 selected Districts, it was found that the RAEO had selected the beneficiaries directly without forwarding the list of farmers to the SADO.

Further, scrutiny of records in 11[14] out of 20 Districts revealed that the prior approval of the primary selection list of farmers was not taken from the ASC by the SADO before giving the benefits of the schemes to the beneficiaries. Only post facto approvals were taken, which indicate that the *Janpad Panchyat* was not actually involved in the planning and selection of beneficiaries as mandated.

Government accepted the audit observation and stated (July 2020) that there is a provision in the scheme guidelines for seeking application from the beneficiaries and the DDAs would be instructed to follow the prescribed procedure for selection of beneficiaries.

2.2.4.2 Implementation of Schemes

(i) Receipt of distributed seeds not taken from farmers

As per the scheme guidelines, seeds are to be procured by the DDAs and supplied up to SDO at the Block level. The RAEOs, after receiving the same from the SDOs, are to distribute to the farmers.

Scrutiny of records revealed that the date of distribution of seeds to the farmers was not recorded by the office of RAEO. Details of distribution of seeds is essential to verify that the seeds have been distributed only to the eligible beneficiaries.

Government accepted the audit observation and stated (July 2020) that as per guidelines of the schemes, complete information of beneficiaries was to be maintained by the RAEOs in a prescribed register, and the Department will ensure compliance in this regard.

(ii) Delay in distribution of seeds

As per the guidelines of the schemes, cut off dates for making seeds available at District level are 30 May and 15 September for *Kharif* and *Rabi* crops respectively. Similarly, stipulated dates for seed distribution for *Kharif* and *Rabi* crops are 15th June and 10th October respectively.

In 18[15] out of the selected 20 Districts, Audit scrutiny revealed that seeds were distributed by the DDAs after the cut off dates, as summarised below. Details are given in **Appendix 2.2.3**.

Table 2.2.4: Delay in distribution of seeds

Name of District	Year	Delay[16] (range in days)
Rajgarh, Nimach, Ashoknagar, Sheopur, Dindori, Anuppur, Jabalpur	2016-19	1 to 50 days
Khargone, Badwani, Harda, Shivpuri, Narsinghpur, Seoni, Sagar, Bhind	2016-19	51 to 100 days
Dhar, Alirajpur, Katni,	2016-19	More than 100 days

[13] Alirajpur, Anuppur, Ashoknagar, Badwani, Dhar, Dindori, Harda, Jabalpur, Jhabua, Katni, Khargone, Narsinghpur, Nimach, Sagar, Seoni, Shajapur, Sheopur and Shivpuri.

[14] Alirajpur, Badwani, Bhind, Dhar, Harda, Jabalpur, Katni, Khargone, Nimach, Rajgarh and Sagar.

[15] Alirajpur, Anuppur, Ashoknagar, Badwani, Bhind, Dhar, Dindori, Harda, Jabalpur, Katni, Khargone, Narsinghpur, Nimach, Rajgarh, Sagar, Seoni, Sheopur and Shivpuri.

[16] As date of receipt of seeds at RAEO level was not available with the Department, date of actual distribution of seeds at SADO level has been considered for calculation of delay.

Further, there were instances, as detailed in **Appendix 2.2.3**, where seeds were supplied to the beneficiaries when *Kharif* and *Rabi* crop seasons were almost over. It was seen in most of the cases that delay occurred due to delayed procurement by the Department.

Government replied (July 2020) that instructions were already issued to DDAs to provide seeds within the prescribed time limit and that, the Department would ensure compliance in this regard.

(iii) Seeds procured at high rates

The rate of each variety of seeds is fixed by FW&ADD for each season. Scrutiny of records revealed that in 10[17] out of 20 selected Districts, seeds were procured from National Seeds Corporation (NSC) and other agencies like Sainath Beej, Maa Gayatri Beej, Nafed Bio Fertilizer, Shri Tirupati Balaji, Nuzividu Seeds Ltd., Hindustan insecticides, Kaveri seeds, etc. at rates higher than the stipulated rates fixed by FW&ADD, resulting in an additional financial burden of ₹ 10.63 crore on the Government. Consequently, the farmers were also forced to bear additional cost of ₹ 2.66 crore, which is 25 *per cent* share of cost of seeds towards farmers' share, as detailed in **Appendix 2.2.4**. Audit further noticed that 85.61 *per cent* of seeds (by weight) were purchased from NSC and 14.39 *per cent* were purchased from other agencies. Dhar and Khargone districts had purchased the highest quantity of seeds at higher rates during 2016-19. Dhar had purchased 4,280.23 quintal for ₹ 4.71 crore and Khargone had purchased 4,241.97 quintal for ₹ 4.87 crore. These constituted 28.95 *per cent* and 28.69 *per cent* respectively, and 57.64 *per cent* overall, of the seeds purchased at higher rates in these 10 districts by weight. Seeds procured from NSC in these two districts at higher rates ranged between 61 and 368 *per cent* and seeds procured from other agencies ranged between one and 346 *per cent* during 2016-19.

It was replied by the Government (July 2020) that as per guidelines, seeds were to be purchased only from Government agencies at prescribed rates, and that, the Department would form a committee to submit a report on this issue and action will be taken accordingly.

(iv) Distribution of seeds to ineligible farmers

Seeds were to be distributed to small and marginal farmers, holding land less than 2 hectares. Audit scrutiny revealed that during the period 2016-17 to 2018-19, seeds were distributed to 847 ineligible farmers, i.e. medium and large farmers, holding land more than two hectares in 12[18] out of 20 selected Districts as detailed in **Appendix 2.2.5.**

Government replied (July 2020) that such instances are possible at field level, in case of land holding shown in joint accounts of beneficiaries by the *Janpad Panchayat* and that, instructions would be issued to strictly follow norms of land holding limit by the District Offices.

2.2.4.3 Quality Control

Delay in receipt of results of seed-testing

As per Government of India, Ministry of Agriculture order dated 30.12.1983, the laboratory shall analyse the samples and send the analysis report within 60 days from the receipt of the samples. Hence, the Department is supposed to send samples to the testing agencies considering a reasonable time schedule so that the test results may be obtained before due

[17] Alirajpur, Badwani, Bhind, Dhar, Harda, Jabalpur, Jhabua, Khargone, Nimach and Sagar.

[18] Ashoknagar, Badwani, Dhar, Dindori, Harda, Katni, Khargone, Narsinghpur, Rajgarh, Seoni, Shajapur and Sheopur.

date of distribution. The due dates of distribution of seeds are 15th June and 10th October for *Kharif* and *Rabi* crops respectively, as per the guidelines of the scheme.

During the years 2016-17 to 2018-19, in 17[19] out of 20 test-checked Districts, it was observed that:

- 5,520 samples (2,495 samples of *Kharif* season and 3025 samples of *Rabi* season) were sent for testing even after the due dates for seed distribution had elapsed,
- Results of testing of seeds were obtained after delays ranging from one to six months in case of *Kharif* and *Rabi* crops, as detailed in **Appendix 2.2.6**. Hence, sowing was done without testing,
- Out of the 7,086 samples of seeds sent for testing, results of 7012 samples were received, of which, 544 samples were found to be sub-standard, as detailed in **Appendix 2.2.6**.

To prevent the distribution of sub-standard seeds, and to ensure timely supply, it is necessary to complete the testing of seeds well in advance before distribution. Distribution of seeds without obtaining seed test report may lead to use of sub-standard seeds by the beneficiary which may also result in poor productivity and loss of crop to farmers.

Government replied (July 2020) that at the time of storage of seeds, samples are sent to the laboratories for testing and reports are received within the prescribed time limit, and that, in case of sub-standard seeds, DDAs take action under provisions of Seed Act. However, DDAs will be instructed to adhere to time limit.

Reply is not acceptable as result of testing of seeds were received with delays ranging from one to six months as seen in test check.

2.2.4.4 Financial Irregularities

(i) Farmers' share not deposited in Treasury

The farmers' share of 25 *per cent* towards the cost of distributed seeds was to be collected from the beneficiaries at the time of distribution of seeds and deposited in Treasury by the SADOs. The SADOs were required to submit the detailed statement of deposited farmers' share to SDOs and DDAs concerned by 5th date of every month. The DDAs were required to send these detailed statements to the Director by 10th of every month. Further, Rule 455 of Madhya Pradesh Treasury Code (MPTC) Volume-I provides that the moneys received by the departmental officers shall be deposited by them daily in the Treasury.

Scrutiny of records revealed that in eight[20] out of 20 selected Districts, against the actually received farmers' share of ₹ 12.78 crore during 2016-19, only ₹ 11.34 crore was deposited in Treasury by SADOs and the balance amount of ₹ 1.46 crore was not deposited (September 2019) as detailed in **Appendix 2.2.7**. This was a serious financial irregularity and led to extra financial burden to the Government, as full payment was made to the suppliers. Besides this, the possibility of misuse of Government money for personal purposes cannot be ruled out.

Government replied (July 2020) that the DDAs would be instructed to deposit the amount of share of the beneficiary in Government Treasury through Challan, and that, a committee

[19] Alirajpur, Anuppur, Badwani, Bhind, Dhar, Dindori, Harda, Jabalpur, Jhabua, Katni, Khargone, Nimach, Rajgarh, Sagar, Seoni, Shajapur and Sheopur.

[20] Alirajpur, Badwani, Dhar, Jhabua, Katni, Khargone, Nimach and Rajgarh.

would be formed and action will be taken on the basis of report submitted by the committee in this regard.

Government should fix responsibility on the erring officials.

(ii) Delayed deposit of farmers' share in Treasury

As per MPTC, moneys received by departmental officers shall be deposited by them daily in the Treasury.

In 16[21] out of 20 selected Districts, scrutiny of records revealed that the recovered farmers' share amounting to ₹ 19.69 crore was deposited in Treasury with delay ranging from one month to 36 months in contravention of MPTC, as detailed in **Appendix 2.2.8**.

On this being pointed out, Government instructed the DDAs to adhere to the related Rules and ensure timely deposit of amount of farmers' share in Government accounts.

(iii) Non-issue of receipts to farmers

As per Rule 58 (1) of MPTC Volume I, Chapter II, the Head of an Office where money is received on behalf of the Government, must give the payer a receipt duly signed by him. He should satisfy himself, that the amount has been entered properly in the Cash Book.

In 16[22] out of 20 selected Districts, scrutiny of recovery of farmers' share amounting to ₹ 19.59 crore revealed that no receipt in MPTC-6 was given to farmers as detailed in **Appendix 2.2.9.** This rendered the collected amount being kept out of the Government Account.

Government replied (July 2020) that the Department does not provide receipt books to field offices and it is not possible to issue receipt to every beneficiary farmer. Government further stated that the Department will ensure that SADO issues receipt to the RAEO on receipt of amount of farmers' share and will deposit the received amount in Government accounts.

Reply of the Government is not acceptable because as per provision of MPTC receipt must issue against the money received by a Government official.

(iv) Non- maintenance of Cash Book

Rule 53 of MPTC Volume I Chapter II, provides that every Government servant receiving money on behalf of the Government should maintain a Cash Book. It further provides that all monetary transactions should be entered in the Cash Book as soon as they occur and attested by the officer-in-charge of the Cash Book in token of check.

In 19[23] out of 20 selected Districts, scrutiny of records revealed that farmers' share of ₹ 22.54 crore was collected and deposited in Government Account but the same was not found to have been entered in the Departmental Cash Book at DDA level as detailed in **Appendix 2.2.10**.

Government replied (July 2020) that the DDAs will be instructed to follow provisions of Treasury Code strictly to make entries in the cash book on the basis of received challans, cash receipts and other records.

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[21] Alirajpur, Anuppur, Badwani, Bhind, Dhar, Dindori, Harda, Jabalpur, Jhabua, Katni, Khargone, Nimach, Rajgarh, Sagar, Seoni and Sheopur.

[22] Alirajpur, Anuppur, Badwani, Bhind, Dhar, Dindori, Harda, Jabalpur, Katni, Khargone, Nimach, Rajgarh, Sagar, Seoni, Shajapur and Sheopur.

[23] Alirajpur, Anuppur, Ashoknagar, Badwani, Bhind, Dhar, Dindori, Harda, Jabalpur, Jhabua, Katni, Khargone, Narsinghpur, Nimach, Rajgarh, Sagar, Seoni, Shajapur and Sheopur.

(v) Non-verification of challans with Treasury records

Rule 53(v) of MPTC Volume-I Chapter – II provides that "When Government money in the custody of a Government servant is paid into Treasury, the head of the office i.e. DDA, making such payment, should compare the Treasury Officer's receipt on the challan or his Pass Book with the entry in the Cash Book before attesting it, and satisfy himself that the amounts have been actually credited into the Treasury".

During test check and verification of challans and Treasury records, in 10[24] out of 20 selected Districts, challans of ₹ 1.39 crore were not verified by the DDAs as detailed in **Appendix 2.2.11**. This indicates that the Department failed to reconcile and track non-deposits of receipts to Treasury.

Government accepted the audit observations and replied (July 2020) that adherence to the provisions of Treasury Code by the DDAs will be ensured and that, a committee would be formed and action will be taken on the basis of report of the committee in this regard.

2.2.4.5 Internal Controls

(i) Physical verification/inspection not carried out as per the prescribed norms

As per guidelines, the RAEO has to maintain all the information related to all the components of the schemes in the prescribed register, farmers-wise. The ADO has to visit the farm land of farmers during his field visit and record his comments in these registers. SADO/Field Superintendent and SDO are responsible for 50 *per cent* and 25 *per cent* physical verification of components of the schemes respectively. Further, DDA is also responsible for five percent physical verification of components of the schemes.

During the period 2016-19, physical verification was not found to have been undertaken by competent authorities in any of the 20 Districts selected in Audit.

Government accepted the audit observation and stated (July 2020) that instructions regarding physical verification, inspection and monitoring have been detailed in the guidelines of the schemes, as are instructions to DDAs to act accordingly.

(ii) Shortage of manpower

The Department is required to have adequate manpower to achieve its objectives and implement the schemes effectively. However, as against the total sanctioned 4,188 posts in the selected Districts[25], only 2,182 personnel were posted (52.10 *per cent*) and 2,006 posts (47.90 *per cent*) were vacant as of March 2019, as detailed in **Appendix 2.2.12.** Moreover, in Katni and Neemuch Districts, shortage was as high as 68 *per cent*.

The SADO, ADO and RAEO have the main roles in the implementation of the schemes and are responsible for monitoring also. However, in 17[26] out of the 19 selected Districts, there was considerable shortage in these categories also, as detailed in **Appendix 2.2.13**. Summary of shortage of staff responsible for monitoring is shown in **Table 2.2.5** below:

[24] Anuppur, Badwani, Bhind, Dhar, Jabalpur, Jhabua, Nimach, Seoni, Shajapur and Sheopur.

[25] Alirajpur, Anuppur, Ashoknagar, Badwani, Bhind, Dhar, Dindori, Harda, Jabalpur, Jhabua, Katni, Khargone, Narsinghpur, Nimach, Rajgarh, Sagar, Seoni, Shajapur, and Sheopur.

[26] Alirajpur, Anuppur, Ashoknagar, Badwani, Bhind, Dhar, Harda, Jabalpur, Jhabua, Khargone, Narsinghpur, Nimach, Rajgarh, Sagar, Seoni, Shajapur, and Sheopur.

Table 2.2.5: Shortage of important officers in the Department

Designation	Sanction Strength	Working Strength	Lack of Working Strength	Percentage of Shortage
SADO	181	95	86	47.51
ADO	351	112	239	68.09
RAEO	1,978	1,187	791	39.99

This grave shortage of field staff, who are responsible for the implementation and monitoring of the scheme, led to lack of physical verification, non-maintenance of records, etc.

In reply, Government stated (July 2020) that effective implementation of schemes become difficult at District level due to lack of field staff and that, action was being taken at Government level to recruit field staff.

2.2.5 Conclusion

The Annapurna and Surajdhara schemes were introduced in the State with the objective of enhancing the economic status of the socially backward farmers by providing improved seeds to maximise agricultural produce. The design of the scheme was ab-initio faulty, as the mode of monitoring the outcome of the schemes was not mentioned in the guidelines of the schemes. As the Director, Agriculture had not fixed the targets component-wise, most of the budgetary allocation (77.42 *per cent*) was utilised in execution of component of the 'Exchange of seeds programme' (without obtaining any seeds from the farmers) and only 22.58 *per cent* budget was utilised on the other two components.

Selection of beneficiaries was not in accordance with the guidelines of the schemes and ineligible farmers could also benefit from the schemes.

In some instances, seeds were distributed to the farmers even after the stipulated due dates, when *Kharif* and *Rabi* crop seasons were almost over. Seeds were procured at rates higher than the rates fixed by the Department from the supplier agencies, resulting in an additional expenditure of ₹ 10.63 crore. Samples of 5,520 (2,495 of *Kharif* and 3,025 *Rabi*) were sent for testing after due dates for distribution of seeds and results of testing of seeds were received after delays ranging from one to six months.

Amounts received from farmers were not deposited promptly in the Treasury; receipts from farmers were neither acknowledged nor was the money accounted for in the Cash Book; farmers' share was deposited in the Treasury with delays ranging from one to 36 months. Physical verification/inspection of the components of the schemes was not carried out by the concerned officers.

Water Resources Department

2.3 Audit of Safety of Dams

2.3.1 Introduction

Water Resources Department (WRD) of Government of Madhya Pradesh is the principal agency for construction and maintenance of large[27] and small[28] dams. There were 4,523[29] (906 large[30] and 3617 small) dams in the State as of December 2019. Water is supplied from these dams throughout the State for irrigation, industrial as well as for drinking purposes.

Government of India constituted a Standing Committee in August 1982 to review the existing practices of inspection/maintenance of dams and allied structures in various States and to evolve standard guidelines in this regard. This Committee was reconstituted with wider representation with a more focused mandate in October 1987 as the National Committee on Dam Safety (NCDS).

In compliance with the instructions of Central Water Commission (CWC), the WRD constituted (February 1983) a Dam Safety Cell and State Dam Safety Organisation (SDSO). The SDSO is responsible for effective monitoring of the health of dams and to formulate priorities for safety review and remedial measures.

The three-stage dam inspection system is given in **Table 2.3.1**

Table 2.3.1: Dam inspection system in WRD

Sl. No.	Type of inspection	Type of dam	Inspecting authority	Frequency of inspection	Reporting system
1	Periodical (Bi-annual inspection)	All dams	Field Officers and review by next Higher Officer	Pre and post Monsoon	All Inspection Reports have to be uploaded in the Enterprise Information Management System (EIMS).
2	SDSO	Large dams	Officers of the SDSO	Once in five years (20 *per cent* every year)	
3	Comprehensive Safety Review by Dam Safety Inspection Panel (DSIP)	Dams having height more than 15 m or which store 60 million cubic metre or more of water.	Independent panel of experts under Chairmanship of retired Secretary/ Engineer-in-Chief level officers.	Once in 10 years	Manual

2.3.1.1 Categorisation of inspected dams

On the basis of the degree of emergency envisaged for attending and executing remedial measures, dams have been categorised as follows:

- **Category I:** Dams having major deficiencies, which may lead to complete failure/mere (partial) failure and need attention at once;
- **Category II:** Dams with minor to medium deficiencies, which are rectifiable but need immediate attention;

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27 As per International Commission on large dams, the dams having height more than 10 metre or having storage capacity of one Million Cubic Metre are classified as large Dams.
28 Dams with height less than 10 m are classified as small dams.
29 Information extracted from website of the WRD (December 2019).
30 As per State Register of large Dams, updated up to 2007.

- **Category III:** Dams are safe and no deficiency in normal operation, including those which may need some kind of maintenance work for upkeep and to ensure safety; and
- **Category IV**: Dams safe under all considerations and condition of operations.

2.3.1.2 State Dam Safety Committee: The State Dam Safety Committee (SDSC) was formed by WRD in February 1983 with the Engineer-in-Chief, WRD as the Chairman. The SDSC is responsible for reviewing the works, progress reports and recommendations given by the SDSO, to fix the priority of safety works in the dams, wherever required in such dams, and to inform the activities of the Committee and recommendations to the GoMP.

2.3.2 Audit Approach

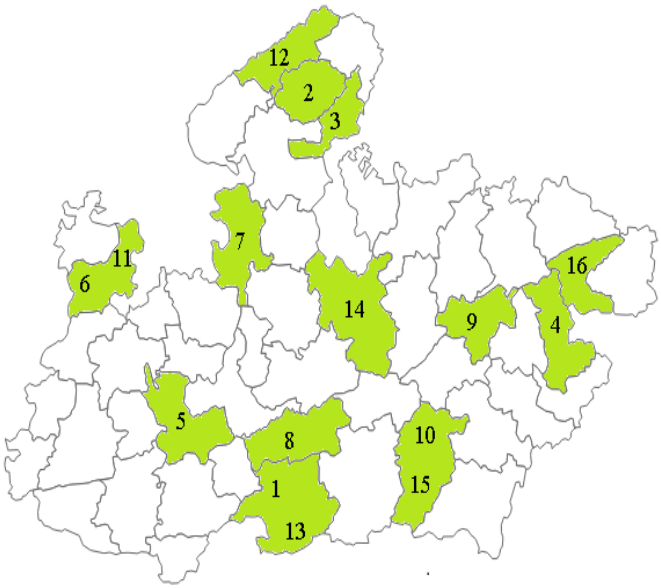
Audit of dams was conducted between July 2019 and November 2019 to ascertain whether dam safety has been ensured by inspections and remedial measures as per approved guidelines.

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

- Central Water Commission's (CWC) guidelines for dam safety, State Dam Safety Manual, DSO Inspection Reports; and
- Madhya Pradesh Works Department Manual (MPWDM), Scheme guidelines for funding and maintenance, WRD specifications, etc.

Audit methodology involved test-check of safety and maintenance related records of dams in 16 WR Divisions out of 96, selected on the basis of random sampling through IDEA software, covering the period from 2016-17 to 2018-19. These Divisions have 453 large (49.95 *per cent* of total 906) and 378 small (10.45 *per cent* of total 3,617) dams. Relevant records in the Office of Engineer-in-Chief/Chief Engineer (CE), Bureau of Designs for Hydel and Irrigation Projects (BODHI), Bhopal were also examined on the basis of SDSO/Dam Safety Inspection Panel (DSIP) inspections (Category I and II dams), works executed under Dam Rehabilitation and Improvement Project (DRIP) and Special Repairs. Audit coverage is depicted in the map below:

MAP SHOWING DIVISION WISE AUDIT COVERAGE OF LARGE AND SMALL DAMS IN M.P.



Sl.No.	Name of Division	District	Number of Dams	
			Large	Small
1	Betul	Betul	77	11
2	Dabra	Gwalior	18	91
3	Datia	Datia	3	5
4	Deoland	Shahdol	2	0
5	Dewas	Dewas	26	54
6	Gandhi Sagar	Mandsaur	27	13
7	Guna	Guna	16	15
8	Itarsi	Hoshangabad	6	5
9	Katni	Katni	49	40
10	Kenlari	Seoni	2	0
11	Mandsaur	Mandsaur	26	42
12	Morena	Morena	0	11
13	Multai	Betul	67	3
14	Sagar	Sagar	55	77
15	Seoni	Seoni	55	10
16	Sidhi	Sidhi	24	1

Government's reply was received in September 2020 and was suitably incorporated in the report.

2.3.3 Audit Findings

Significant Audit observations are discussed in succeeding paragraphs:

2.3.3.1 Inspections were not carried out as per laid down norms

Audit noticed the following issues of non-compliance with norms in the inspection and reviews of dams by the Field Formations/SDSO and DSIP during the three year period 2016-19 covered in audit:

(a) Shortfall in Pre and Post-Monsoon inspections and reviews

As per Technical Circular No. 3 and 3A (August 2015) of the WRD, pre and post-monsoon inspections of all large and small dams are to be carried out between April-May and October-November respectively by the field officers and reviewed by the next higher officers. A consolidated report should be submitted by the Chief Engineer (CE) to the Director, State Dam Safety, BODHI. Further, the CE is also to ensure online submission of pre and post-monsoon report by June and December respectively, each year.

The details of Pre and Post-Monsoon inspections and review of the dams during the years 2016-17 to 2018-19 are given in **Table 2.3.2** below:

Table 2.3.2: Pre and Post-Monsoon inspections and reviews of dams in MP

Year	No. of dams	Pre-Monsoon				Post-Monsoon			
		Inspected	Shortfall (*per cent*)	Reviewed	Shortfall of Reviews with respect to inspections (*per cent*)	Inspected	Shortfall (*per cent*)	Reviewed	Shortfall in Reviews with respect to inspections (*per cent*)
2016-17	4,523	381	91.57	207	45.67	223	95.07	120	46.19
2017-18	4,523	1,382	69.44	1,286	7.00	824	81.78	602	26.94
2018-19	4,523	1,003	77.82	721	28.12	638	85.89	440	31.03
Average shortfall			**79.61**		**26.93**		**87.58**		**34.72**

(Source: Data from WRD website as of December 2019)

The shortfall in Pre-Monsoon inspections and reviews of all dams in Madhya Pradesh for the period 2016-19 was 79.61 *per cent* and 26.93 *per cent respectively*. For the Post-Monsoon period, the shortfall in inspections and reviews was 87.58 *per cent* and 34.72 *per cent* respectively. In the 16 test checked Divisions, the shortfall in Pre-Monsoon inspections and reviews for the period 2016-19 was 77.57 *per cent* and 66.18 *per cent* respectively. For the Post Monsoon period this shortfall was 81.62 *per cent* and 77.28 *per cent* respectively.

Further, even the inspections/reviews carried out were not in accordance with the prescribed norms, as can be seen from the following details:

i) 291 inspections (28.92 *per cent*) out of 1006 and 70 reviews (24.39 *per cent*) out of 287 were carried out after the scheduled period during the years 2016-17 to 2018-19, as detailed in **Appendix 2.3.1**;

ii) Inspection of 40 large dams was not carried out by designated officers;

iii) In 150 large dams (10 WR Divisions) and 351 small dams (13 WR Divisions), no inspections or reviews were carried out during the past three years.

Ledi Tank (small dam) under Gandhi Sagar Dam Division, Mandsaur had breached in June 2018. Audit noticed that Pre-Monsoon and Post-Monsoon inspections were not carried out in this dam during the past three years (2016-2018).

iv) In most of the Inspection Reports, vital data such as gross tank capacity, year of completion, culturable command area, first filling year, etc. was missing/left un-filled or incorrect.

Government replied (September 2020) that the SDSO compiled 500 Pre and 381 Post-monsoon inspection reports of large dams and sent it to the CWC.

The reply was however silent in respect of the shortfall in inspections and reviews pointed out by Audit.

(b) Shortfall in inspection by the State Dam Safety Organisation

As per GoMP instructions, 20 *per cent* of large dams should be inspected by the SDSO every year so as to cover all the dams in a cycle of five years. However, the SDSO had inspected only 591 dams against the required 724 dams as detailed in **Table 2.3.3** below:

Table 2.3.3: Details of inspection by SDSO

Year	No. of dams to be inspected as per guidelines	Dams to be inspected as per plan of SDSO	No. of dams inspected	Shortfall in inspection against planned inspection
2015-16	181	110	81	29
2016-17	181	207	122	85
2017-18	181	266	247	19
2018-19	181	184	141	43
Total	**724**	**767**	**591**	**176**

(Source: On the basis of records provided by the Department)

Government replied (September 2020) that due to shortage of staff in SDSO and other reasons like election duty, work load/Covid-19, the officers could not visit the dam sites and that, SDSO will conduct the inspection of dams next year.

The reply of the Government is not acceptable as priority should have been given to inspection, as it is directly related to safety of dams. Further, COVID-19 could not have affected dam inspections during the period 2016-19.

(c) Inspections by the DSIP were not carried out as prescribed

According to the Minutes of the 8th Meeting of NCDS[31] (October 1991), the SDSO has to arrange comprehensive safety review of dams which are more than 15 metres in height, or which store 60 Million Cubic Metre (MCM) or more of water, by an independent panel of experts once in 10 years.

Although the Engineer-in-Chief, WRD re-constituted (November 2016) the DSIP for conducting a comprehensive safety review of dams, the criterion of height of more than 15 metres laid down by NCDS was not considered while selecting dams for review by the DSIP. Thus, 475 large dams, which were more than 15 metres in height, were not selected for comprehensive safety review, endangering not only the safety of these dams but also the lives and property of people living near and downstream of the dams.

[31] In order to evolve a uniform simplified procedure based on the latest 'State-of-the Art' techniques, the Government of India constituted a Standing Committee in August 1982 to review the existing practices of inspection/ maintenance of Dams.

The SDSC, in its meeting of May 2017, identified 16 dams as due for a comprehensive review by this expert panel by May 2017. The DSIP inspected 20 dams (15 due and five new dams) as of July 2019. Out of the 20 dams inspected, eight were inspected with a delay up to 141 months, as detailed in **Table 2.3.4** below:

Table 2.3.4: Details of delay in Inspection by the DSIP

Sl. No.	Name of dam	Details of Inspection			
		Previous date of inspection/ construction year	Due for next inspection (after 10 years)	Actual date of inspection	Delay (in months)
1	Bansagar	26/05/2007	May 2017	04/04/2018	12
2	Mahan	27/05/2007	May 2017	05/04/2018	12
3	Chandora	13/04/2008	April 2018	26/02/2019	10
4	Indira Sagar	2005	2015	04/12/2018	36
5	Rajghat, Sagar	2003	2013	22/03/2018	50
6	Marhi	10/06/1999	June 2009	09/12/2017	102
7	Gopikrishna Sagar	13/08/1999	August 2009	01/02/2018	102
8	Birsingpur	21/10/1997	October 2007	19/07/2019	141

(Source: Minutes of SDSC Meeting of the WRD)

Government replied (September 2020) that DSIP has inspected 20 dams till date and the reconstituted DSIP would inspect the proposed dams post COVID-19 pandemic.

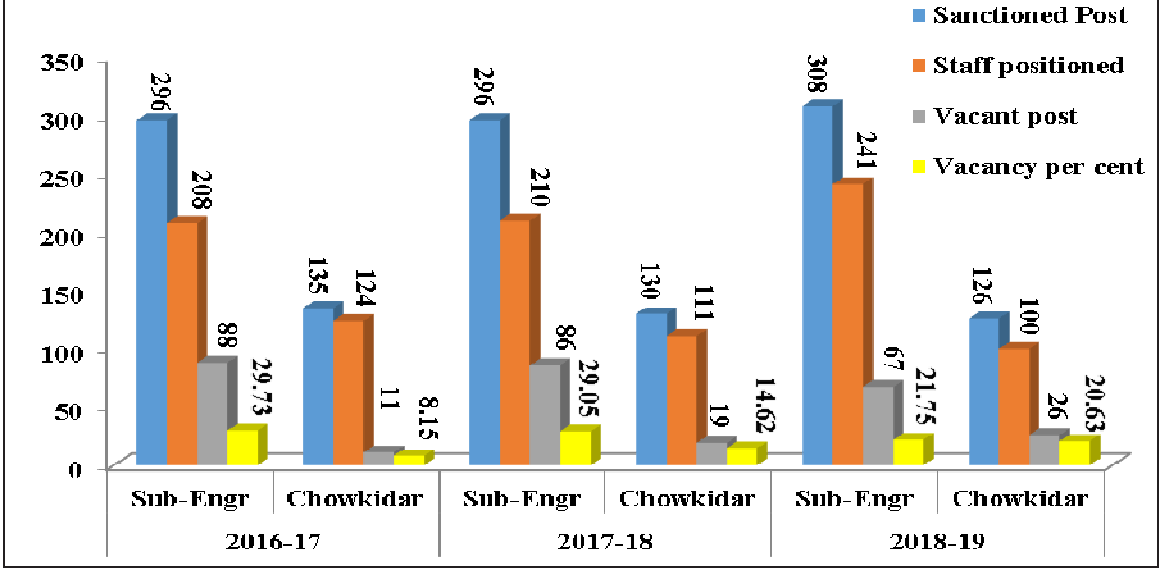
Reply of the Government is silent about reasons for not conducting the prescribed inspections as per stipulated periodicity.

2.3.3.2 Sufficient staff not employed by the WRD to ensure Dam safety

Audit noticed significant shortages in staff at not only the SDSO Headquarters but also in the field formations. In the SDSO Headquarters, only three Deputy Directors and three Assistant Directors were posted against the sanctioned strength of 10 Dy. Directors and 27 Assistant Directors.

Sub-Engineers and *Chowkidars* are key functionaries at the ground level involved in regular monitoring of dams. In the16 test checked divisions during 2016-19, the shortfall ranged between 21.75 to 29.05 *per cent* in respect of Sub-Engineers and 8.15 to 20.63 *per cent* in respect of *Chowkidars*, against the sanctioned posts, as depicted in **Chart 2.3.1**:

Chart 2.3.1: Details of sanctioned posts, men-in-position and shortfall



Government replied (September 2020) that recruitment process was under way for filling the vacancies.

2.3.3.3 Preparation of Data books, database of small dams and status reports of small dams

(i) Non-preparation of Data Books, completion reports and drawings of large dams

According to Minutes of the 3rd (December 1988) and 4th Meetings (May 1989) as well as subsequent Meetings of NCDS, the SDSO has to prepare complete sets of designs and drawings, along with the data book of large dams, as per CWC guidelines on standard format. However, out of 906 large dams, the SDSO was able to prepare data books of only 91 dams (up to 2017-18) and completion reports of 10 large dams without preparing drawings (up to 2016).

Government replied (September 2020) that as per new list of large dams, data book of all large dams will be compiled by SDSO on priority.

(ii) Non-preparation of database of small dams

The SDSO has to compile and enlist the data of dams not classified under the large dams category in the existing proforma of National Register for Large dams or their own proforma. However, no such data of small dams had been maintained by the SDSO.

Government replied (September 2020) that the SDSO has requested all CEs to submit the list of small dams in the prescribed format and a list of some small dams has already been sent to CWC in February 2017.

(iii) Non-submission of status reports of small dams

As per Technical Circular No. 3A (August 2015), the Superintending Engineer (SE) has to prepare a status report of small dams periodically and submit it to the Secretary, WRD, the SDSO and the CE concerned. However, status report of 378 small dams in 14 test checked Divisions and compliance reports on the recommendations of the SDSO's inspections, was not prepared by the EEs concerned for submission to the aforesaid officers, through SE, as detailed in **Appendix 2.3.2**.

Government replied (September 2020) that the status report had been submitted to the CWC and the Government.

Reply of the Government is not acceptable, as details in this regard have not been provided to Audit.

2.3.3.4 Remedial measures not carried out

Deficiencies reported by the SDSO, DSIP and Field Formations have to be addressed by the EEs of the concerned dams, by initiating appropriate remedial measures. Lacunae in this regard are detailed below:

(i) Non-preparation of estimates and non-rehabilitation of dams

Inspections by Field Formations identified deficiencies in 75 dams, pertaining to the 16 test-checked Divisions (2015-18). Out of these, estimates for rectification of deficiencies of only 59 dams were prepared by the EEs concerned; of these 59, 53 were rehabilitated; the remaining six dams with reported deficiencies like damage of pitching, earthwork of bund, damage of concrete in abutment of weirs, damage of body wall of weir, damage of flush bar and damage in downstream of Energy Dissipating Arrangement, etc. have not

been rehabilitated (January 2020) as detailed in **Appendix 2.3.3**. Further, the following shortcomings were noticed in the rehabilitated dams:

(a) Non-completion of treatment of Energy Dissipating Arrangement of the Bansagar dam

On the recommendation of the CE, Ganga Basin, Rewa (June 2016), the work of Energy Dissipating Arrangement (EDA)[32] treatment (scouring and cavities in four bucket segments) in the downstream reverse slope profile of the Bansagar dam was awarded (June 2017) to a contractor at a cost of ₹ 7.04 crore. The work was finalised (March 2019) at a cost of ₹ 6.18 crore after treating bucket segment Nos. 1 and 2. Bucket segments Nos. 3 and 4 were left un-treated. The main reason for non-finalisation of work was change in quantities[33] and items due to unrealistic estimation and improper assessment. Thus, safety of the dam remains un-ensured due to incomplete repair work.

Picture 6.1: View of treated bucket segments 1 and 2, and water filled segment 3 of the Bansagar dam

(Source: By the Department)

Government replied (September 2020) that the safety of dam due to incomplete work in energy dissipation arrangement is not compromised. The main dam is secured and even during the rainy season the gates were open for very long period but no damages have been reported; the balance work shall be taken up after the rainy season. It was further stated this work does not have bearing on safety of dam.

[32] Various arrangements at the downstream of Dam spillway (gated portion of Dam) for reducing the high energy of water discharge during gate opening at the time of flood.

[33] Initially the estimate includes 40 cm M15 Base concrete with short concrete which was revised as M30, M15 reinforced steel concrete.

The reply of the Government is not acceptable, as segment Nos. 3 and 4 have not been treated which is essential for preventing severe scouring in the downstream bottom of dam thereby affecting the safety of the dam.

(b) Rehabilitation works of three[34] dams were finalised without completing the entire works, *viz.* non-construction of flush bar, filling in foundation around masonry, stone pitching, shotcrete on the old damage CC, earthwork in bund, construction of waste weir, pitching, and reconstruction of sluice, etc., as detailed in **Appendix 2.3.4**. Incomplete finalisation of these works was a violation of the contractual provisions and may affect the safety of the dam during floods.

Government replied (September 2020) that the rehabilitation work of all 3 dams had been completed.

Reply of the Government is not factually correct as even after two rainy seasons (from May 2018), no such work had been executed by the contractors.

(c) The work of rehabilitation of four dams/weirs[35] was assigned (May 2016) to a contractor by the EE, Sagar. Out of the four, the rehabilitation works of Ghoghara and Mahuna weirs were completed (August 2017) at a cost of ₹ 13.17 lakh through another agency due to non-signing of contract by the first agency. However, action for rectification of the deficiencies in the remaining (Duttpura and Vijaypura-Charkhari) weirs has not been taken up as of July 2019. Government reply on the observation has not been received.

(d) Rehabilitation works of 10 dams were completed with delays ranging from one to three years after recommendation as detailed in **Appendix 2.3.3**.

(ii) Non-preparation of estimates and non-rehabilitation of dams in compliance to observations of SDSO

The SDSO inspected 510 dams during the years 2016-17 to 2018-19 and reported 73 dams (72 dams under category II and one dam under Category I) which needed immediate repairs. In the selected 16 Divisions, 28 dams under Category-II had major deficiencies, *viz.* heavy leakage from central masonry/dam body, choking of seepage drains, water pooling near downstream toe drains, formation of weed growth, disturbance of pitching, erosion of top width, leakage from sluice and damage of sluice, etc. For rectification of these deficiencies, estimates should have been prepared immediately.

Audit noticed that out of these 28 dams, estimates of only eight dams[36] were prepared (February 2018-May 2019) by the EEs concerned, and of these, only one estimate (that of Chandora) was sanctioned (April 2018) under DRIP-II; estimates of the remaining seven were not sanctioned by the CEs concerned even after eight to 24 months of their submission, as detailed in **Appendix 2.3.5**. Deficiencies in the remaining 20 dams have not been rectified even after 11 to 69 months of their being pointed out.

Government replied (September 2020) that the estimates are being framed as per observations of SDSO and discussions to take up under DRIP-II were in progress.

Government needs to act quickly, as delay in preparation of estimates delayed the process of rectification of deficiencies of dams, which will affect the safety of these dams.

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[34] Work of Gangasagar Dam (Sagar), Sanodha (Sagar) and Lakhnadon (Seoni) Dams.

[35] Duttpura, Ghoghara, Vijaypura-Charkhari and Mahuna.

[36] Guradia Surdas (Dewas); Pagara (Morena); Hinouti and Bahoriband (Katni); Chandora (Multai); and Ranipur, Pandhar and Gondidhana (Betul).

(iii) Non-compliance to the observations of the Dam Safety Inspection Panel

The DSIP inspected six dams[37] and found major deficiencies, *viz.* inadequate spillway capacity, choking of drainage holes, leakage from the sluice gates and dam body, disturbing of the pitching, non-working of lifts, etc. Out of these, the Gandhi Sagar dam was selected by Audit as a model case study as described below:

Case Study on Gandhi Sagar dam

Gandhi Sagar dam was constructed in 1960 with the objective of providing drinking water to several districts of Rajasthan and generation of 115 megawatt electricity, irrigation of six lakh hectare land of Madhya Pradesh and 1.57 lakh ha in Rajasthan.

Issue raised by the Dam Safety Inspection Panel

The DSIP inspected (May 2008) the Gandhi Sagar dam and reported as detailed below:

(a) The spillway[38] of the dam was designed to pass flow capacity of 4.86 lakh cubic feet per second (cusecs). In the past the flood inflows have exceeded the designed flood value of spillway on 13 occasions and the dam was in distress as reported by the DSIP. The Probable Maximum Flood (PMF) of 16,69,650 cusecs was measured in the year 2006. It was recommended (May 2008) to review the hydrology[39] of the dam and to prepare an alternative plan to divert the water by construction of a tunnel, off-taking from the 0.5 km up stream of the left flank of the reservoir and emerging 0.5 km downstream of dam.

(b) The deep scour in downstream due to water discharge from the dam during the heavy flood was earlier treated in 1995. The dam has experienced a heavy flood of the magnitude 16.69 lakh cusecs in 2006. It was advised (May 2008) to check the effect of this flood on downstream treatment immediately, as the team was itself unable to inspect the impact on downstream due to high tail water.

(c) Flood forecasting was done on the basis of 13 Reporting Stations providing only rainfall data. The data of discharge sites was not maintained properly due to shortage of skilled staff. Further, no concrete correlation has been developed between rainfalls–runoff relationships. However, it was recommended (May 2008) to develop a software for flood forecasting and install computer(s) connected with internet at the dam site to have immediate storm forecast from the Data Centre of the Department.

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37 Bansagar, Gandhi Sagar, Harsi, Mahan, Tawa and Tigra dams.

38 A spillway is a structure to provide controlled release of excess water from a dam in to a downstream area. It ensures that the water does not overflow, and damage or destroy the dam.

39 The scientific study of movement, distribution and management of water.

Audit Comments

Facts of instructions	Audit Comments
Review of Hydrology and prepare alternative plan to divert surplus water (May 2008).	A proposal for diversion of water through tunnel was submitted (July 2013) by the EE to the CE, Narmada Tapti Basin, Indore for inclusion in the DRIP, after safety inspection of the dam by the DSRP. The DSRP and the Director, State Project Management Unit, advised to conduct flood routing study with and without proposed spillway tunnel, along with impact analysis of passing of water through tunnel on downstream of the dam. The Director, DRIP, further asked (April 2014) to submit the data of flood and out-flow above capacity of Reduced Level (RL) 1316 feet. The Division failed (April 2014) to provide data due to its non-availability. Meanwhile, the Empowered Committee finalised (July 2014) a list of 29 dams, to be rehabilitated under DRIP, in its 14th meeting excluding Gandhi Sagar dam. Government replied (September 2020) that a dam was constructed for flood regulation with two more dams in downstream of Gandhi Sagar. The studies had been conducted by CWC and are being further upgraded with last year flood. So finalisation of fund solutions is being done by team of experts under GOI as being Interstate River. However, to overcome the exigency in flood regulation a committee of three CEs under the CE, BODHI was formed. Until the decision on the bypass tunnel or any other measure is finalised by CWC, the flood will be regulated as per decision of the committee. This being major work, the decision had to be taken by the GoMP, GoI and Government of Rajasthan which will take time and till that time the dam has to be operated as in the past with inputs from the committee. Government reply however does not explain as to why the Department failed to comply with the instructions even after a lapse of 11 years.
Inspection of the effects of floods on downstream and treatment of down scours.	No study of scouring on downstream bottom of the dam has been conducted even after a lapse of nearly 12 years (January 2020). The Government replied (September 2020) that the discussion had been done with officers of the Government of Rajasthan and inspections shall be done as soon as possible. The reply of the Government is not acceptable, as scouring in the downstream bottom of dam due to heavy flood discharge was not assessed in spite of clear recommendations of DSIP. Deep scouring in the downstream reverse slope of the dam at bottom, if left unattended, may weaken the base of the dam, which may further cause failure/breach of the dam.
Proper flood forecasting system was needed	Audit noticed that action for installing the flood forecast system has not been initiated (January 2020). The Government replied (September 2020) that the system of five automatic rain gauges in catchment area of Gandhi Sagar dam and full-fledged SCADA[40] system at Gandhi Sagar dam site is being installed under National Hydro Project – III for flood forecasting and shall be completed this year. This will help to forecast flood at Gandhi Sagar dam with available inputs from CWC. The reply of the Government itself shows that a proper flood forecasting system is critically required for ensuring the safety of the dam.

[40] Supervisory Control and Data Acquisition.

It was also seen that during the rains in September, 2019, Gandhi Sagar dam was again in critical condition. There was floodwater over topping 2.06 metre from the full reservoir level. Both the inspection galleries and the Power House were completely sunk/filled with water, as shown in **Picture 6.2** below:

Picture 6.2: Over topping view of Gandhi Sagar dam, dated 14 September 2019.

(Source: Website of Rajasthan Patrika dated 15 September 2019)

Thus, due to non-compliance of the DSIP as well as CWC recommendations, Gandhi Sagar dam is still under extreme threat during the rainy season. Given the fact that millions of people stay in the downstream area of the dam, any breach/over topping of the dam can have disastrous consequences.

(d) Other important dams

In five other dams, DSIP found major deficiencies, *viz.* heavy leakage from the dam body, choking of porous drains and uplift pressure release holes, drainage holes, inappropriate/ non-arrangement standby diesel generator for gates operation, inappropriate flood forecasting system, non-functioning of remote operation of gates and lifts and disturbance in dam profile and stone pitching, etc. These have not been rectified due to lack of funds (Tigra and Mahan dams), and inaction (Harsi, Tawa and Bansagar dams) by the Department, as detailed in **Appendix 2.3.6.**

Government replied that the balance work of all the dams had been taken in DRIP-II and shall be completed in time.

2.3.3.5 Non-instrumentation of large dams

According to the minutes of 6th NCDS meeting (July 1990) and CWC Guidelines for Instrumentation of large dams (January 2018), the storage reservoir created by a dam presents a potential hazard to downstream inhabitants and property. The primary purpose of instrumentation is to supply data to aid in evaluating the safety of a structure by collecting quantitative data on its performance and by detecting problems at an early and preventable stage. Symptoms of dam distress can be detected by a monitoring scheme

designed with the right instrumentation in the existing embankment dams, *viz.* Piezometers, Velocity meters/Parshall flumes, Total station/ Theodolite/Plumb line, Gauges/ Evaporimeter and Stress & Stain gauges for measuring of water/pore pressure, quantity of seepage, earth movement, water level and total pressure respectively.

Test-check (July–November 2019) in the 16 selected Divisions showed that out of 453 large dams, only three dams, viz. Gandhi Sagar, Bansagar and Gulab Sagar (Mahan) dam were instrumented. Rani Awanti Bai Sagar dam, being one of the five dams of National importance in Madhya Pradesh, was not instrumented.

Government replied (September 2020) that the hydro metrological stations and early warning systems will be installed at every large dam of the State, and that, the instrumentation drive for existing dams is being done under National Hydrology Project-3 and DRIP-II.

2.3.3.6 Non-functional instruments

(a) According to the DSIP Report 2008, the instruments installed in the Gandhi Sagar dam had not been providing reading since 1994. The CWC instrumentation team reported the following deficiencies in April 2016:

(a) Choking of uplift pressure pipes and drainage hole in the gallery;

(b) Piezometer/pipe pressure installed in the gallery and switch board installed with cable arrangement has no record for observation due to non-functioning; and

(c) Normal plumb line in Block No. 3 was not in working order.

Therefore, the CWC advised (April 2016) revival of these instruments and directed to install more instruments, *viz.* Joint meter in blocks, Strong Motion Accelerograph (SMA) on the top of the dam for checking ground shaking due to earthquake, and at least six survey targets at equal intervals on the top of the dam and one on both sides of the abutment for settlement/deflection measurement.

An estimate of ₹ 1.35 crore for "replacement of old instruments and cleaning of drainage holes" was sent (July 2016 to SE, Ujjain) for sanction, which was not sanctioned by the SE as of July 2019. The Department has not initiated action for revival of instruments and cleaning of drainage holes as of July 2019.

(b) The SDSO, DSIP and Central Water and Power Research Station, Pune after inspection of Bansagar dam, reported (March 2018) non-functioning of instruments installed in the dam, viz. Stress Meters (12) and Temperature Meters (13). Besides, the instruments installed in the dam remained unutilised due to lack of data logger[41] and non-functioning of Black Box[42]. However, no action has been initiated for repair of these instruments and procurement of Data Logger/repair of Black Box.

Government replied that new proposals were prepared under DRIP-II and Gandhi Sagar dam instrumentation would be renewed along with automation and SCADA.

Clearly, even for a dam of national importance like Gandhi Sagar dam, necessary repairs for instruments were not carried out and new instruments were not purchased even after three years of the report of CWC (January 2020).

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[41] It is an electronic device that is used to retrieve data automatically from the sensors, installed in the field.

[42] Is a device which collects and simulate data of water inflow and out flow in dams.

(c) Non-preparation of Operation and Maintenance Manual for large dams

Operation and Maintenance (O&M) Manuals for each dam is essential for taking decisions about storing or releasing of water. According to the Minutes of the 4th Meeting of NCDS (May 1989), the SDSO has to take necessary steps for preparation of O&M Manual for all the large dams. Out of 453 large dams in the 16 test checked divisions, O&M manual were prepared for only 31 dams.

Government replied (September 2020) that the O&M manual for reservoir operation of all large dams has to be prepared as per latest guidelines by CWC (June 2018) for safe operation of reservoir and in pursuance of these guidelines, all the CEs were directed by SDSC to prepare O&M Manuals of all gated large dams on priority basis.

The reply of the Government does not address the issue regarding preparation of O&M Manual of non-gated large dams. Further, CWC had not instructed to prepare the O&M Manual for gated dams only.

(d) Non-preparation of Emergency Action Plan for dams

An Emergency Action Plan (EAP) contains procedures and information to assist the EE of concerned dam in initiating necessary action in time to moderate or alleviate the problems, in addition to issuing early warning and notification messages to responsible emergency management authorities.

According to the CWC Guidelines and Minutes of 6th meeting of the NCDS (July 1990), the SDSOs were required to prepare EAPs for normal operation conditions and extreme flood conditions under Standard Projected Flood (SPF)/Probable Maximum Flood (PMF), as well as dam break. The Director Dam Safety, Bhopal, directed (February 2012) the CEs concerned to prepare EAPs of all large dams. However, in the 453 large dams under the jurisdiction of the selected 16 Divisions, EAPs have not been prepared as per CWC guidelines.

Government replied (September 2020) that EAP, which is a format document, is necessary for all large dams and as per the directions of the Chairman of SDSC, EAP of 25 dams have been prepared.

The reply of the Government is not acceptable, as no document in confirmation of preparation of EAP of 25 dams has been provided to Audit. Moreover, the reply does not mention the reasons for non-preparation of EAPs for large dams even after the lapse of 30 years.

2.3.4 Conclusion

Dams play a major role in the development of the State as they provide water for irrigation, drinking, electricity generation, fish farming, recreation, commercial purposes, etc. Therefore, ensuring their safety through regular inspections and prompt addressal of the identified deficiencies is important. As brought out in the above paragraphs, dams in the State have not been inspected by the designated authorities at prescribed periodicity due to shortage of staff.

Mere inspection of dams is futile unless action is taken to address the lacunae identified during inspection. Audit scrutiny of action taken on remedial measures revealed irregularities like non-preparation of estimates, remedial works not carried out as recommended, non-completion of remedial works, etc., making the exercise of inspection

merely a routine exercise with no consequential benefit. Very few dams have been instrumented to monitor their behaviour and detect symptoms of distress. Many of the installed instruments were non-functional. Emergency Action Plans for large dams were not prepared as per the guidelines of Central Water Commission.

Public Works Department

2.4 Inspection of Major Bridges

2.4.1 Introduction

Public Works Department is the premier agency of Government of Madhya Pradesh engaged in Planning, Designing, Construction and Maintenance of Government assets like Roads, Bridges, Railway Over Bridges, Flyovers and Buildings.

There were 683 major bridges[43] in the State as of December 2018. Routine inspection and maintenance of every bridge as per codal requirement is essential to keep them in good and serviceable condition. Inspections are carried out to ascertain the extent of maintenance required for various components of the bridges, i.e. approach roads, super-structure, abutments, bearings, railings, kerbs, drainage spouts, wearing coat, pitching, masonry works, etc.

Chief Engineer, Bridge Construction Zone is responsible for inspection and maintenance of major bridges in Madhya Pradesh. An expenditure of ₹ 22.18 crore was incurred by Bridge Construction Zone on maintenance of bridges during 2016-19.

2.4.2 Audit Approach

Considering that inspection is a pre-requisite for deciding the nature and extent of maintenance, audit has focused on the inspection aspect of maintenance of major bridges. Audit was conducted between June and July 2019 to ascertain whether the inspection of major bridges was adequate and effective for identifying and undertaking the requisite maintenance.

Audit findings were benchmarked against the criteria derived from the Madhya Pradesh Works Department Manual, specification of Indian Road Congress and instructions issued by the Public Works Department (PWD) from time to time.

Audit coverage involved a period of three years from 2016 to 2018, which included pre-monsoon and post-monsoon cycles[44] for scrutinising records relating to inspection of major bridges.

All seven Bridge Construction Divisions, all three Superintending Engineer (SE) offices and the Chief Engineer (CE), Bridge Construction Zone were selected for audit scrutiny.

An Exit Meeting was held in July 2020 at Government level to discuss the audit findings. The responses of the Government during Exit Meeting and its written replies received in August 2020 were incorporated appropriately in the report.

2.4.3 Audit Findings

There were 522 major bridges in Madhya Pradesh as of pre-monsoon 2016; 161 major bridges were added during 2016-18 taking the total to 683 as of post-monsoon 2018.

Significant Audit findings with regard to inspection of Major Bridges are as under:

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43 Major bridges are bridges having a total length of above 60 m (IRC: 5-1998).

44 Inspection cycle of each year includes process of pre-monsoon inspections which ends in the month of May and process of post-monsoon inspections which ends in the month of December. Hence, it covers the whole calendar year (2016, 2017 and 2018). Since this Audit Report is till the period of 31 March 2019, pre-monsoon 2019 was not under scope of Audit.

2.4.3.1 Shortfall in routine inspection

As per MP Works Department Manual 1983, requirements for inspection of bridges is as shown in **Table 2.4.1** below:

Table 2.4.1: Stipulated Requirements for inspection of bridges

Employee responsible	Stipulated Requirements
Sub-Engineer	**Every bridge**, culvert and causeway must be thoroughly inspected **twice a year** (once before and once after the monsoon) by the Sub-Engineer who is in charge of the bridge and he will submit his report to the SDO.
Sub Divisional Officer (SDO)	SDO shall inspect **all bridges over 6 metre length**, or requiring special repairs, and 10 *per cent* of the remainder and forward report to the EE.
Executive Engineer (EE)	The EE shall inspect **all bridges over 30 metre** length and all structures reported as damaged and report to the SE.
Superintending Engineer (SE)	The SE shall inspect **all bridges over 100 metre length** once in a year.

Scrutiny of records of all seven Divisions and the three SE offices revealed that inspections were conducted on lesser number of bridges by the authorities responsible for inspection. Details of inspection against the due number of bridges, as against the norms of MPWD Manual, i.e. twice a year, can be seen in **Table 2.4.2** below:

Table 2.4.2: Actual inspection of bridges against due for inspection

	Pre Monsoon 2016	Post Monsoon 2016	Pre Monsoon 2017	Post Monsoon 2017	Pre Monsoon 2018	Post Monsoon 2018
Bridges due for inspection	522	573	597	628	656	683
Bridges actually inspected	259	232	273	260	470	430
Shortfall	263	341	324	368	186	253
Shortfall in *per cent*	**50.38**	**59.51**	**54.27**	**58.60**	**28.35**	**37.00**

(Source: Information furnished by the Department)

As can be seen from the details tabulated above, there was a significant shortfall in inspection of bridges by the Inspecting Authorities, ranging from 28.35 *per cent* to 59.51 *per cent* during 2016-18. Further, it was also seen that inspection of 116 bridges was not carried out by any of the Inspecting Authorities during 2016-18.

2.4.3.2 Inspection not done by appropriate authority

As per MP Works Department Manual, the EE and SE were to have conducted inspection of 1,914 and 1,745 nos. of major bridges respectively during 2016-18. Audit noticed that none of the major bridges was inspected by them.

2.4.3.3 Delay in carrying out inspections

As per norms, inspection of every Major Bridge was required to be done by the Sub-Engineer by 15 March (pre monsoon) and by 15 October (post monsoon) every year.

During audit (June 2019 to July 2019), it was noticed from the Inspection Reports available in the Division Offices that the inspections of bridges were delayed by the Sub-Engineers from the prescribed norms of the MPWD Manual. Delays in inspection from the prescribed norms are detailed in **Table 3** below:

Table-3: Delay in inspection of Bridges

Delay in days	Pre monsoon 2016	Post monsoon 2016	Pre monsoon 2017	Post monsoon 2017	Pre monsoon 2018	Post monsoon 2018
1 to 30	15	44	2	40	19	17
31 to 90	176	169	131	195	286	313
91 to 180	68	8	138	24	158	96
Above 180	0	0	2	0	0	3
Total	**259**	**221**	**273**	**259**	**463**	**429**

(Source: Information furnished by the Department)

2.4.3.4 Delayed issue of half yearly Inspection Reports

An Inspection Report covers certain aspects in details, such as approaches, protective works, waterways, foundations, sub-structure, bearings, superstructure, expansion joints, wearing coat etc. which show that the regular inspection has covered significant areas that ensure health of bridges. On the basis of these inspection reports, repair and maintenance requirements are to be assessed and recommendations for maintenance works are to be made by the bridge inspection authorities. The EE should examine and forward the Inspection Reports to the SE concerned to reach him not later than 01 May and 01 December every year.

Audit noticed that Inspection Reports were forwarded by EE to SE with a delay ranging between 40 days and 230 days from prescribed dates.

2.4.3.5 Defects identified during inspection not addressed

Audit scrutiny of records revealed that out of 683 major bridges, 567 major bridges were inspected by the Inspecting Authorities during 2016-18 and defects were noticed in respect of 218 bridges. Out of these, defects of 23 bridges were rectified under Special Repairs and 35 bridges were repaired under annual repairs. Defects noticed in 20 bridges were not attended to, during the entire three-year audit period of 2016-18 and records related to execution of necessary works for removal of defects from the remaining 140 bridges were not found available in the Divisions.

2.4.3.6 Inspection of bridges through Mobile Bridge Inspection Unit (MBIU)

As per the instructions of Engineer-in-Chief, MP, PWD (May 2015 and August 2016) important bridges and those older than 25 years should be inspected through MBIU.

There were 61 bridges in 2016, which increased to 68 in 2017 and 70 in 2018, which were constructed over 25 years ago. However, it was seen the out of that the 30 bridges which were inspected using MBIU during the audit period, only 12 were more than 25 years old, while 18 were designated as other important bridges. Thus, MBIU was not used for inspection of nearly 83 *per cent* of the designated old bridges.

Audit observed that from 20 March 2017 to 30 April 2017, the Department used MBIU for inspection of 12 bridges and from 22 June 2018 to 13 August 2018, for inspection of 18 bridges. The EE, PWD (E/M) Division, Bhopal informed that the unit was in actual operation for only 26 days during this period of three years for inspection of these 30 bridges. Audit found that Inspection of four bridges[45] of Ujjain City and nearby areas was conducted using this unit in a single day (01 August 2018) covering a route of 87 km,

[45] Lalpul (200.1 m), Radhopipally (90.12 m), Bherugarh (175 m) and Sullyakhedi Pul (120 m).

which does not seem feasible. Checks[46] expected to be carried out as per extant provisions, as detailed in above instructions, cannot be completed in such a short span of time.

In reply, Government stated (August 2020) that there was a shortage of field staff and the staff deployed at Division and sub-Division level is less than the sanctioned strength. Field staff is also responsible for supervision of all going works, survey investigation and preparation of DPRs for new projects and other regular works.

During inspection of bridges by EEs and SDOs, if any major rehabilitation is required, they are to prepare estimates for special repairs and submit to SE. However, necessary instructions have been given to all officers to submit such reports separately for bridges under maintenance.

Due to jurisdiction of field staff being very large, the inspection of bridges situated in interior regions may have been delayed.

As regards non-redressal of defects noticed, Government stated that if the repair requirements are minor in nature, they are rectified by the agency deployed exclusively for annual repairs of bridges and if any structure needs special repair, detailed estimate for Special Repair is prepared and Technical Sanction is accorded.

Further, Government stated that the MBIU is required for inspection of bridges which are constructed on major rivers having a height of more than 12-15 metres; the remaining bridges with lower height and dry river bed can be viewed physically. Since the movement of MBIU is difficult and costly too, a route plan is prepared to cover all the bridges in the same region.

2.4.4 Conclusion

As brought out above, despite inspection being a pre-requisite for identifying the nature and periodicity of maintenance of bridges, PWD's bridge formation has not given adequate attention to this aspect, resulting in shortfall/delayed inspection of major bridges; inspection not carried out by appropriate authority, defects noticed in major bridges were not attended to by the Department and MBIU was not used for inspection of nearly 83 *per cent* of the bridges that were more than 25 years old.

[46] As per proforma for Inspection Report given in Appendix-I of IRC SP 18, 20 no. of various checks are to be done out of which checks related to Waterway, Foundations, Bearings, Superstructure and Expansion Joints are complicated tests.

2.5 Construction of Hospital and Medical College Buildings by Public Works Department

2.5.1 Introduction

Public Works Department (PWD) has two wings, *viz.*, Buildings & Roads (B&R) and Project Implementation Unit (PIU). The PIU is responsible for construction of buildings of various Government Departments of the State as deposit works.

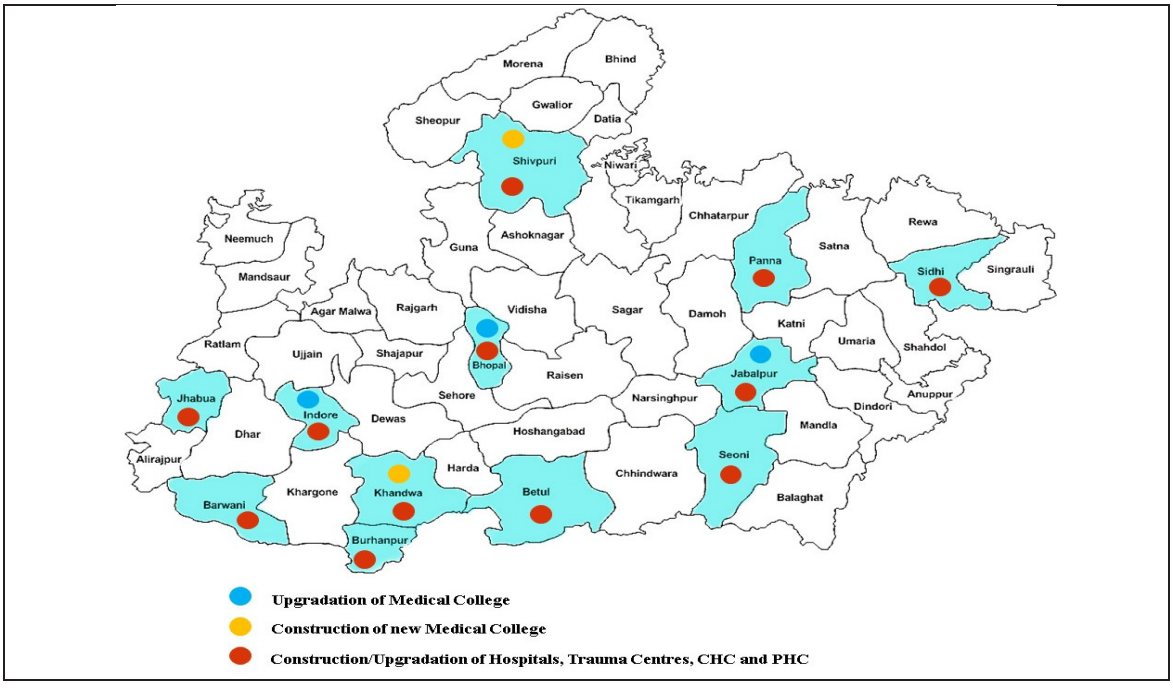
2.5.2 Audit Approach

Audit of PIU was taken up during 2018-19 to assess whether (i) estimates for construction of hospitals and medical college buildings were prepared by the PIU as per the projected requirements, and (ii) contractors were paid for the work as per the actual quantity executed at applicable rates.

Audit findings were benchmarked against the criteria derived from the terms and conditions laid down in the contract documents, Madhya Pradesh Works Department Manual and Schedule of Rates (SOR) issued by MP PWD.

Audit was conducted during June 2019 to August 2019 and covered the period 2016-17 to 2018-19. Audit methodology included examination of relevant records in 12[47] out of 51 PIUs. The units were selected through stratified random sampling method.

In all the 12 PIUs selected, construction/upgradation works of Hospitals, Trauma Centres, Community Health Centres (CHC) and Primary Health Centres (PHC) were in progress. Besides these construction works, Medical Colleges were also being constructed/upgraded in five[48] out of the 12 selected PIUs. Out of these five, upgradation work of Medical Colleges was in progress in Bhopal, Indore and Jabalpur, while one new Medical College was being constructed in Khandwa and Shivpuri each. The details of the sampled PIUs can be seen in the map below:



[47] Barwani, Betul, Bhopal, Burhanpur, Indore, Jabalpur, Jhabua, Khandwa, Panna, Seoni, Sidhi and Shivpuri.

[48] Bhopal, Indore, Jabalpur, Khandwa and Shivpuri.

2.5.3 Audit findings

Significant audit findings are discussed in the succeeding paragraphs:

2.5.3.1 Incorrect estimation of works

According to Paragraph 2.028 of MPWD Manual, an officer according technical sanction to an estimate is responsible for assessing the soundness of design and for incorporating all the items required for inclusion in the estimate with reference to the drawing. The correctness of detailed estimates is to be measured by the extent of nominal variation between estimated and actually executed quantities. Substantial variation between these quantities indicates that estimation was not made accurately.

Audit scrutiny revealed that in seven works executed by five[49] out of the 12 sampled PIUs, there were variations of more than ten *per cent* in estimated and executed quantities. Execution of huge quantities of extra items, which were not part of the estimates and bill of quantity (BOQ), indicate that the estimates were not prepared properly. This has resulted in extra cost of ₹ 7.04 crore as detailed in **Appendix 2.5.1**.

On this being pointed out, Government stated (August 2020) that in civil works, there are variations during construction, owing to unforeseen site condition/requirement of user agency. Government however, assured that more care would be taken henceforth in preparation of estimates.

While Government assurance with regard to extra care in future estimates is welcome, its contention that civil works could have variations during construction is not acceptable, as the variations in the cases given in the Appendix are quite significant and are a reflection on lack of stringent due diligence procedures within the PIU.

2.5.3.2 Excess payment due to adoption of incorrect rate

As per the Notice Inviting Tender (NIT) of the work, all the amendments issued up to the date of NIT were applicable to the work. Further, as per Clause-5 of "Special Conditions for Building Works in PWD, PIU" issued by the Government on 10 December 2015 (which forms part of agreement), "SOR applicable for Building work shall be the SOR for Building works (Civil and E/M both) issued on 01 August 2014 by the Project Director PWD, PIU with amendments up to the date of issue of NIT". Scrutiny of records of 12 selected PIUs revealed the following:

(i) In four[50] PIUs, the amendments issued up to the date of issue of NIT were not adopted. Therefore, payments at original rates were made to the contractors, which resulted in excess payment of ₹ 3.02 crore, as detailed in **Appendix 2.5.2**.

(ii) In DPEs of Indore and Shivpuri, scrutiny of records revealed that the rate of some items were adopted higher than the prevailing SOR rates, which resulted in excess payment of ₹ 33.10 lakh to the contractors, as detailed in **Appendix 2.5.3**.

(iii) In DPE, Indore, scrutiny of records revealed that although the amended SOR was issued in June 2016 before the date of NIT, yet the payment of road items was made at the rates mentioned in the earlier SOR (March 2014), which resulted in excess payment of ₹ 11.12 lakh as detailed in **Appendix 2.5.4**.

[49] Barwani, Jabalpur, Jhabua, Sidhi and Shivpuri.
[50] Bhopal, Indore, Seoni and Shivpuri.

On this being pointed out, Government stated (August 2020) that in the case of Shivpuri, Seoni and Indore, amounts pointed out by Audit had been recovered from the contractor. However, no documents in support of that assertion were made available to Audit as of December 2020.

Further, in response to audit observations at serial number (ii) and (iii) above, Government stated that any item which was deleted from the SOR but was included in the BOQ, was treated as SOR item for that particular work and was required to be paid as per the rate quoted by the contractor.

Response of the Government in respect of aforesaid observations (ii) and (iii), is not acceptable, as estimate is the primary driver of cost of the project and the Department first prepares estimates on the basis of rates given in the SOR. A summary of these estimates, called BOQ, becomes part of the NIT. On the basis of this BOQ, the contractor quotes rates. After the Department agrees to the rates quoted by the contractor, this BOQ becomes a part of Agreement which binds both the parties, i.e. the Department and the Contractor. Any amendment in SOR rates affects the BOQ, and thus, the cost of the project. In cases (ii) and (iii) above, rates higher than those given in applicable SOR were included in the BOQ, and since payments were made accordingly, it resulted in excess payment. The Government's reply does not address this issue.

2.5.3.3 Excess payment for transportation of excavated and issued rock

As per SOR (August 2014), rubble available from excavation of hard rock/ordinary rock shall be the property of the contractor subject to recovery of ₹ 150 per cum of the quantity of the rock excavated. Further, as per Clause 6 (Instructions to Bidders) of NIT, "The bidder is advised to visit and inspect the Site of Work and its surroundings and obtain for himself on his own responsibility all information that may be necessary for preparing the bid and entering into the contract for construction of the work."

It was noticed in PIU Seoni and PIU-II, Bhopal, that the excavated hard rock/ordinary rock was issued to the contractor and recovery of ₹ 150 per cum was made from running bills. Further, an amount of ₹ 1.41 crore on account of transportation of excavated hard rock was paid as supplementary item to the contractor against the provisions. Since the issued hard rock was the property of contractor, any expense on account of transportation should have been borne by the contractor himself.

Table 2.5.1: Excess payment to contractor

(Amount in ₹)

Sl. No.	Name of Unit	Agreement No.	Item No.	Rate of issue	Quantity of hard rock issued (cum)	Amount of transportation	Contract percentage	Excess payment
1	PIU, Seoni	2/16-17	1.1.4	223.16	951.65	2,12,370	7.57 below	1,96,294
2	PIU-II Bhopal	25/16-17	1.1.4	331.27	43,206.22	1,43,12,925	2.61below	1,39,39,358
							Total	**1,41,35,652**

On this being pointed out, Government stated (August 2020) that the tender has been invited on percentage rate, above and below on the BOQ attached with the tender document; hence provisions of the SOR and the notes therein are not relevant, as the contractor has quoted his rates on the BOQ items. It was further stated that the BOQ item provided in the contract does not contain the condition that the excavated rock shall be the property of the contractor subject to recovery of ₹ 150 per cubic metre of the excavated rock, and therefore, this recovery from the contractor bills has also been vehemently disputed by the contractor and is likely to be raised in arbitration. Government agreed that once the material has been issued to the contractor at a certain rate, it becomes the property of the contractor and as such the carting payment may not be admissible; however, in this

case, the basic action of issuance of the material to the contractor is in serious dispute as the rates quoted are on BOQ and not on SOR. It was also pointed out that as this construction was being done in a campus which was heavily congested and in the heart of the city, a huge quantity of excavated rock could not be permitted to be kept within the campus for a long time and the excavated rock was of no use in the ongoing construction.

The reply is not acceptable as the BOQ is a part of the agreement which is a summary of estimates, prepared on the basis of rates of items given in the SOR. As per SOR, the excavated hard rock would be the property of the contractor, and hence, he will be responsible for disposal of the same. Further, the contractor had quoted his rates after site visit and duly satisfying himself with the site conditions and items of BOQ. In the instant case, the Department issued the hard rock to the contractor being his property as per the clause of the agreement, but at the same time also made payment to the contractor for transportation of his own property against the provisions of the contract on flimsy grounds. This resulted in loss of ₹ 1.41 crore to the Government.

2.5.3.4 Non-recovery of cost of cement

As per the Clause of "Special Condition for Building Works in PWD, PIU" issued by the Government on 10 December 2015 (which is also forming part of agreement), "SOR applicable for Building work shall be the SOR for Building works (Civil and E/M both) issued on 01 August 2014 by the Project Director PWD, PIU with amendments up to the date of issue of NIT".

As per Amendment No. 12 (07 November 2015) to SOR 2014, use of minimum cement content of 330 Kg per cum was permissible and after this modification, payment against additional quantity of cement used in design mix was not permissible.

Scrutiny of records of two PIUs revealed that in three works, the NIT were published much after the issue of the above amendment, but an amount of ₹ 3.23 crore was paid for extra cement used in the design mix over and above the specified cement content. This resulted in excess payment of ₹ 3.23 crore to the contractor, as given in **Appendix 2.5.5.**

Government stated (August 2020) that the rates had been quoted by the contractor on BOQ and not on SOR. The BOQ items provide for recovery or extra payment for quantities of Cement used less than or more than 330Kg, as the case may be. The contractor had been paid for providing cement in excess of 330 Kg per cum as per the approved mix design.

The reply of Government is not acceptable, as in the case of PIU Bhopal, in order to avoid the recovery of ₹ 2.47 crore from the contractor at the instance of Audit, the DPE changed the word "pavement" to "payement" and submitted the same to Audit in reply. However, when Audit scrutinised the copy provided by the DPE with the original document, the Department changed its reply. This changed reply is also not tenable as the Department's argument that contractor quoted rates according to the BOQ is not acceptable. The BOQ is only a part of the estimate. In the end, it is the contract document which binds both

Original Document

Prebid Meeting dated 03/09/2016
querries of the bidders.
"Construction of Multi Storied Hospital Buildings in Gandhi Medical College Campus, Bhopal.

24.	Kindly let us know the cement content to be considered for cement concrete pavement.	As per Mix design of concrete.

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Tampered Document

Prebid Meeting dated 03/09/2016
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the parties, i.e. the Department and the Contractor. The clauses of the contract spell out the works to be executed and payment that has to be made. The onus of quoting the rates for work, duly going through various clauses of the agreement/ provisions of NIT lays with the contractor. Since it was clearly written in the contract that the SOR shall be applicable with amendments up to the date of issue of NIT, the Department should have recovered the excess payment made, as elaborated above, in view of the provisions and amendments in SOR. Further, since it was a percentage rate contract, the Contractor was free to quote his rates duly considering all the items of BOQ and amendments of SOR up to the date of NIT.

2.5.4 Conclusion

As brought out in the above paragraphs, deficiencies during execution of work not only led to excess payment and extra cost to work but affected quality of work as well. There were instances of adoption of incorrect rates, payment of transportation charges and excess payment on consumption of cement to the contractors. As a result, some parts of the works created extra financial burden on the Department, even though the quality of the work was not assured.

Public Works Department and Water Resources Department

2.6 Royalty on Minor Minerals

2.6.1 Introduction

Government of Madhya Pradesh gets various works and projects relating to construction of Dams, Roads, Buildings, etc. executed through Public Works Department (PWD) and Water Resources Department (WRD), collectively known as Works Departments (WDs). These Departments in turn assign the works to various contractors for execution. During the execution, contractors *inter alia* use minor minerals, such as sand, metal, boulders, etc., which are procured from quarries or in some cases, bought by the contractors from the open market.

As per GoMP order (February 2003), the final bill of contractors shall be paid for the work only upon production of 'No Royalty Charges Outstanding Certificate' issued by Mineral Resources Department (MRD), failing which, the royalty will be deducted from the bills and deposited in the Mining head concerned. The rates of royalty for different minerals were fixed by notifications issued by MRD from time to time[51]. MRD vide orders issued in March 2018, reiterated that the contractors had to register themselves with MRD through online portal and submit no dues certificate of mining with each running bill. According to provisions of the agreement of PWD and WRD, the liability, if any, on account of quarry fees, royalty and any other taxes and duties in respect of materials actually consumed in public works, shall be borne by the contractor. Further, it is to be ensured by the disbursing officer (concerned EE) that for the minor minerals used in the work, royalty was paid.

2.6.2 Audit Approach

Audit was conducted between August 2019 and January 2020 to ascertain whether PWD and WRD were able to ensure correctness and timeliness and properly monitor realisation of royalty on minor minerals.

Audit findings were benchmarked against the following sources of criteria and instructions issued by the GoMP on realisation of royalty from time to time:

- The Mines and Minerals (Development and Regulation) Act, 1957
- M.P. Minor Minerals Rules, 1996
- M.P. Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2006
- Schedules of Rates (SOR) of PWD and Unified Schedules of Rates (USR) of WRD
- Agreements for construction works
- Specifications of Indian Road Congress and
- Madhya Pradesh Treasury Code

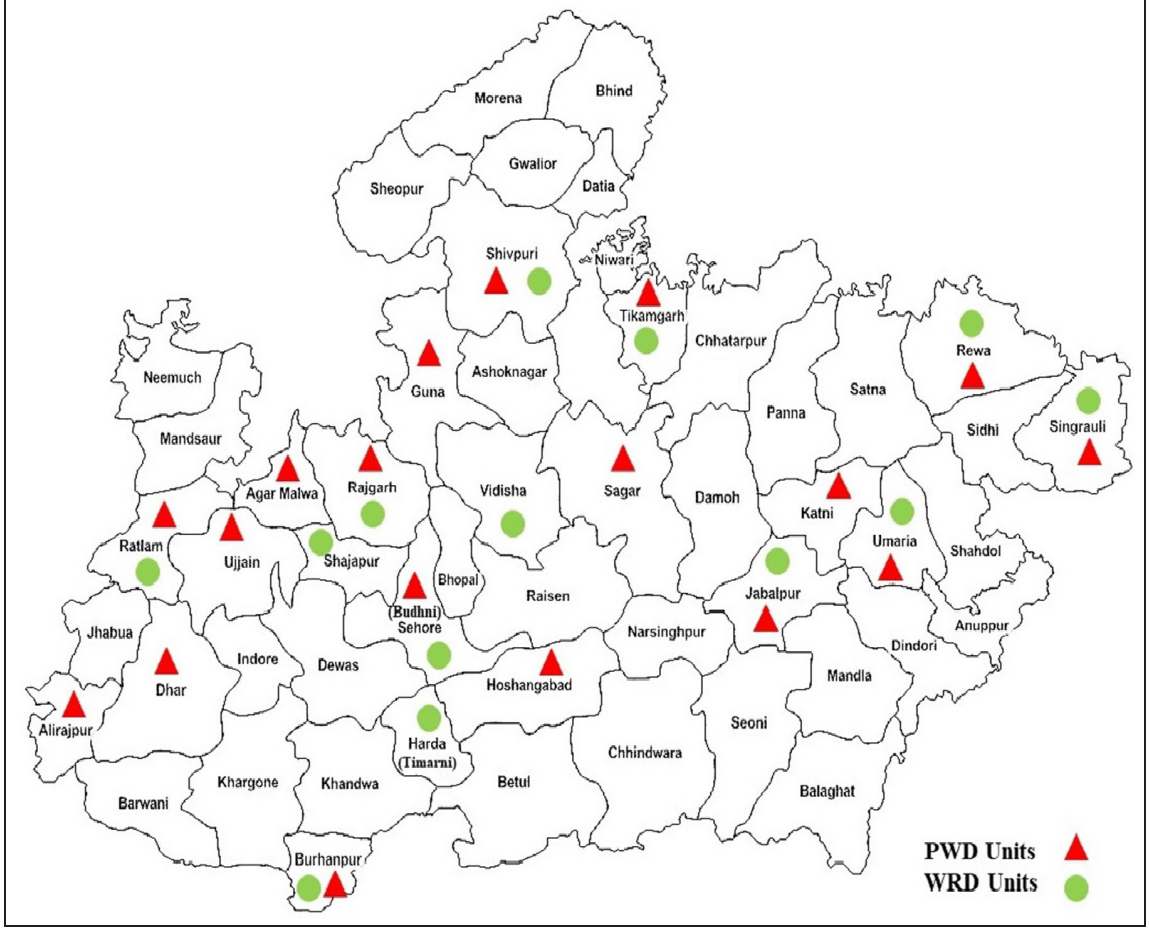
[51] As per Schedule 3, Rule 29 of M.P. Minor Minerals Rule, 1996, the rates of royalty of minor minerals are as below:

Sl. No.	Name of minor minerals	Rate of Royalty per cum w.e.f. March 2010	Rate of Royalty per cum w.e.f. September 2014
1	Sand	₹ 53	₹ 100
2	Boulder	₹ 35	₹ 50
3	Stone and Road Metal	₹ 44	₹ 100
4	Other minor minerals	₹ 27	₹ 100
5	*Moorum*	₹ 27	₹ 50

Audit was carried out during August 2019 to January 2020 and covered the relevant transactions/contracts of three years 2016-17 to 2018-19. Audit methodology involved scrutiny of records related to royalty of minor minerals in 18[52] out of 57 PWD (B&R[53]) Divisions and 13[54] out of 51 WRD Divisions; these Divisions were selected on the basis of stratified random sampling method.

An Exit Meeting was held on 24th July 2020 at Government level to discuss all the paragraphs pertaining to PWD, However, exit meeting with WRD could not be held as the Department did not respond in spite of repeated requests. Replies received from the Government (PWD) have been incorporated appropriately in the report.

MP State map showing test-checked Divisions of PWD and WRD



52 PWD (B&R) Divisions of Agar-Malwa, Alirajpur, Budhni, Burhanpur, Dhar, Jabalpur, Guna, Hoshangabad, Katni, Rajgarh, Ratlam, Rewa, Sagar, Shivpuri, Singrauli, Tikamgarh, Umariya and Ujjain.

53 Building and Road.

54 Executive Engineers (EE), WRD, Burhanpur, Ganj Basoda (Sanjay Sagar Project), Timarni, Jabalpur, Rajgarh, Ratlam, Rewa, Sehore, Shajapur, Shivpuri, Singaruli, Tikamgarh and Umariya.

2.6.3 Audit Findings

Audit test-checked 270 out of 377 Agreements in the 18 selected PWD Divisions, and 142 out of 175 Agreements in the 13 selected WRD Divisions. Significant findings that emerged from this test check are discussed in the succeeding paragraphs.

2.6.3.1 Status of generation of revenue through royalty

The total amount of royalty deducted from contractors' bills, deposited with MRD and amount of royalty lying with the Departments during 2016-17 to 2018-19 is given in **Table 2.6.1** below:

Table 2.6.1: Status of generation of revenue through Royalty in PWD and WRD

(₹ in lakh)

Department	Royalty deducted	Royalty deposited in Mining head	Royalty returned to contractor	Balance amount of royalty with the Department
PWD	7,449.43	3,584.80	1,452.98	2,411.65
WRD	2,177.49	1,347.14	144.66	685.69

(Source: Information provided by the Departments)

An amount of ₹ 24.12 crore in PWD and ₹ 6.86 crore in WRD was kept in Deposit head instead of remitting to MRD.

2.6.3.2 Short deduction of royalty from contractors

According to Agreement and General Note appended with the Schedule of Rates ((SOR) applicable in PWD) and Unified Schedule of Rates ((USR) applicable in WRD), royalty charges, as prescribed by MRD, must be deducted from the bills of the contractors against the minor minerals utilised during the execution of work. The recovered royalty shall be refunded to the contractor only on submission of no dues certificate of royalty issued by MRD. Otherwise, the royalty so deducted from the bills should be deposited in the Mining head concerned.

Audit noticed in 116 out of 270 test checked Agreements in all 18 PWD Divisions and in 62 out of 142 test checked Agreements in 12[55] Divisions of WRD, that the contractors executed construction works using minor minerals, for which royalty had not been deducted correctly by the Departments as given in **Table 2.6.2** below:

Table 2.6.2: Short deduction of Royalty

(Quantity in cum and ₹ in crore)

Department	Number of Agreements	Quantity of minor mineral used			Royalty to be deducted	Royalty actually deducted	Short deduction of Royalty
		Metals	Sand	Boulders			
PWD	116	27,02,082.92	5,61,790.76	7,422.22	31.93	18.98	12.95
WRD	62	8,94,596.30	4,91,315.08	1,65,366.38	12.90	7.98	4.92
				Total	**44.83**	**26.96**	**17.87**

(Source: On the basis of records provided by the Departments)

No Dues Certificate (NDC) of royalty was not produced by the contractors for the aforesaid quantity of minerals. Accordingly, royalty of ₹ 44.83 crore, was to be deducted from the bills of contractors by both the Departments. However, only ₹ 26.96 crore was deducted from contractors' bills, resulting in short deduction of royalty of ₹ 17.87 crore by the Departments, as detailed in **Appendix 2.6.1.** The short deduction of royalty of ₹ 17.87 crore in these cases was due to actual consumption of minor minerals not being considered while

[55] Burhanpur, Ganj Basoda, Rajgarh, Ratlam, Rewa, Sehore, Shajapur, Shivpuri, Singrauli, Tikamgarh, Timarni, Umariya.

calculating the royalty (₹ 10.82 crore in PWD and ₹ 4.71 crore in WRD) and irregular refund of deducted royalty (₹ 2.13 crore in PWD and ₹ 0.21 crore in WRD).

Audit further observed that though the contractors had not submitted NDC of royalty, in 10 out of 68 test-checked agreements in four[56] PWD Divisions and three out of the 25 agreements of two[57] WRD Divisions, the Departments had refunded the amount of royalty deducted from the bills of the contractors as detailed in **Appendix 2.6.2**.

Government (PWD) stated (August 2020) in reply that the deduction of royalty charges was not mandatory in the Department but to safeguard public revenue, Divisional offices usually deduct royalty charges at source, against the materials used in construction work and keep this amount in Miscellaneous Deposit Head till finalisation of work or till submission of NDC of royalty by the contractor to the Department.

Reply is not acceptable as MRD notification (March 2013) and order (March 2018) make it mandatory for the Department to recover royalty from the contractor.

2.6.3.3 Delayed remittance of royalty in Mining Head

According to Rule 486 of MP Treasury Code, money received by officers of the Department shall be deposited, as soon as possible, in the nearest Treasury as credit to Public Works remittances Head. As per Rule 68 (2) of MP Minor Minerals Rules, 1996 and orders issued in this respect from time to time by the Government, royalty amount deducted up to the end of every quarter should be deposited under Revenue Head-0853 and copy of challan be submitted in the office of Mining Officer. Further, MRD and Engineer-in-Chief, PWD directed all EEs (March 2019) that royalty deducted from contractors should be deposited in the Minor Head 102 under Major Head-0853.

It was observed in 12[58] out of 18 PWD Divisions and in seven[59] out of 13 WRD Divisions, that the Departments deposited the deducted royalty of ₹ 12.93 crore and ₹ 10.06 crore respectively, pertaining to the period 2006-07 to 2018-19, in the account of Director of Geology and Mining (DGM) with delays ranging from one to 132 months in PWD and from one to 96 months in WRD, as detailed in **Appendix 2.6.3**.

Government (PWD) in reply stated that it is not feasible to deposit deducted royalty in Government account, as it would not be possible to refund the amount if the contractor produces NDC of royalty. To avoid litigation and unwarranted disputes, the amount was kept in deposit head till finalisation of work.

The reply is not acceptable as deducted royalty even in cases of test-checked final bills were also not deposited in Mining Head concerned as expected by the MRD in its notification (March 2013). Further, disputed cases were not seen by audit in this regard in selected units.

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56 Dhar, Guna, Hoshangabad and Shivpuri.

57 Shivpuri and Rajgarh.

58 Agar-Malwa, Alirajpur, Budhni, Burhanpur, Jabalpur, Katni, Rajgarh, Ratlam, Shivpuri, Singrauli, Ujjain and Umariya.

59 Burhanpur, Ganj Basoda, Jabalpur, Rajgarh, Shajapur, Sehore and Ratlam.

2.6.3.4 Irregular finalisation of works without obtaining NDC of royalty from Mineral Resources Department

According to Rule 68 (1) of M.P. Minor Mineral Rules 1996 (amended vide M.P. Gazette Notification dated 23 March 2013), the quarry permit holder/contractor engaged in construction work shall obtain NDC to ensure payment of royalty for minerals used in construction work, for the mineral excavated from quarry permit area or used by purchasing from open market. NDC shall be issued by the Mining officer/in-charge of mining section, after verification of documents submitted by the contractor/quarry permit holder engaged in construction work. GoMP, MRD further reiterated vide order (March 2018) that, the contractors had to register themselves with MRD through online portal and submit NDC with each running bill. As per GoMP orders[60], (February 2003), the final bill of contractors shall be paid for the work only upon production of NDC of royalty from the District Collectors, failing which, the royalty so deducted from the bills should be deposited in the Mining Head concerned.

During test-check of records of all the sampled Divisions of PWD and WRD Divisions, Audit observed the following:

Table 2.6.3: Non-receipt of NDC of royalty from MRD

(₹ in crore)

Department	Number of Divisions	Number of agreements finalised during 2016-17 to 2018-19	Number of agreements finalised without getting NDC of royalty	Amount of royalty involved
PWD	18	183	156	30.74
WRD	13	105	102	15.41
Total		**288**	**258**	**46.15**

(Source: On the basis of records provided by the Departments)

Thus, 258 agreements, involving ₹ 46.15 crore of royalty, were finalised without getting NDC of royalty from the District Collector, out of the total executed 288 agreements in both the Departments during 2016-17 to 2018-19, as detailed in **Appendix 2.6.4**.

Government (PWD) stated (August 2020) in reply that obtaining NDC of royalty from MRD was required in old tender documents, prior to January 2014 and that, the Divisions had informed that they had deducted and deposited the amount against royalty charges as per actual consumption of minor minerals and that suitable action will be taken in favour of the Government.

Reply of Government is not acceptable as M.P. Minor Minerals Rules and MRD, GoMP notification (March 2013) and order (March 2018) stipulate that NDC of royalty should be obtained from the contractor before payment of final bill. In these cases, the Department paid the final bills without deducting the requisite amount of royalty or receipt of NDC of royalty.

2.6.3.5 Deducted royalty kept in Civil Deposit Head

It was further observed that in 13 Divisions of PWD[61] and six Divisions of WRD[62], royalty of ₹ 9.24 crore in 95 final agreements and ₹ 2.89 crore in 42 final agreements (finalised between March 2016 to January 2020) was deducted from the contractors' bills, and was

[60] GoMP, PWD vide order no. F-23/4/2003/G-19 dated 03 February 2003.

[61] Agar-Malwa, Alirajpur, Budhni, Burhanpur, Dhar, Guna, Hoshangabad, Jabalpur, Rajgarh, Ratlam, Sagar, Shivpuri, and Umariya.

[62] Ganj Basoda, Ratlam, Shajapur, Sehore, Shivpuri and Tikamgarh.

kept in Civil Deposit Head, instead of depositing in the revenue head concerned as detailed in **Appendix 2.6.5.**

In reply, it was stated by the Government (PWD) that as per directions of MRD, the construction departments had to simply keep amount of royalty in Deposit Head till disposal of final bill.

Reply is not acceptable because as per GoMP, MRD notification dated 23 March 2013 and order dated 22 March 2019, the amount of royalty deducted should be deposited in Government account.

2.6.3.6 Non-deduction of cost of minor minerals at market rate

- According to the MRD order[63] (March 2018), the contractors had to register themselves with MRD through online portal[64] by submitting information such as Mobile number, name, address, GST number, email, etc., and submit NDC of royalty with each running bill, failing which, market rates of minor minerals will be recovered from them.
- Audit observed during test-check of records that in all 18 PWD Divisions and in nine[65] out of the 13 WRD Divisions, the respective Departments had awarded 337 agreements amounting to ₹ 1,364.88 crore and 70 agreements amounting to ₹1,655.33 crore (having contract amount more than ₹ 50 lakh) respectively, for various construction works after March 2018 to the contractors, as detailed in **Appendix 2.6.6.** Online registration of contractors with MRD was not found in any of the agreements in both the Departments**.** Besides, instructions of MRD were also not incorporated in Notice Inviting Tender (NIT) or in agreements by any of the test-checked Divisions.
- It was further observed in both the Departments that the contractors had neither got themselves registered with MRD nor produced NDC of royalty with each running bill. Therefore, market rate for minor minerals was recoverable from the contractors. Results of test-check of the sampled units of both the Departments are given in **Table 2.6.4** below:

Table 2.6.4: Non-recovery of royalty at market rate

(Quantity in cum and ₹ in crore)

Department	Number of Agreements under observation	Quantity of minor minerals for which market rate was not recovered		Total amount of market rate not recovered	Royalty recovered at prescribed rate of ₹ 100	Net amount recoverable
		Metal	Sand			
PWD	113 of 18 Divisions	6,89,580.66	59,948.04	41.32	7.49	33.83
WRD	22 of 7[66] Divisions	92,544.02	63,674.34	9.15	1.56	7.59
Total		**7,82,124.68**	**1,23,622.38**	**50.47**	**9.05**	**41.42**

(Source: On the basis of records provided by the Departments)

[63] Order vide no. F 14-10/2018/12/1 dated 15 March 2018.
[64] https//ekhanij.mp.gov.in
[65] Burhanpur, Ganj Basoda, Jabalpur, Rajgarh, Ratlam, Sehore, Shajapur, Singrauli and Umariya.
[66] 70 agreements were seen in these Divisions: Ganj Basoda, Jabalpur, Ratlam, Sehore, Shajapur, Singrauli and Umariya.

Thus, in 135 agreements out of a total recoverable amount as per market rate of ₹ 50.47 crore, only ₹ 9.05 crore was recovered by both the Departments, as detailed in **Appendix 2.6.7.**

Government (PWD) stated in reply (August 2020) that as per agreement, the liability on account of royalty for material actually consumed in public works shall be borne by the contractor. Therefore, there is no requirement to inform the Government regulations to contractor separately and it is not within the Departmental duties to stop illegal mining and possibility of leakage of revenue.

The reply of Government is not acceptable as the onus of recovering market rate from the contractors as per the order (March 2018) of MRD was on the concerned Departments.

2.6.3.7 Short recovery of royalty due to acceptance of compacted quantity in Public Works Department

As per Rule 29 (4) of M.P. Minor Mineral Rules 1996, royalty is payable on the quantity of minerals removed/and or consumed in the works. As per SOR of PWD, for each compacted cubic metre of bituminous base and surface courses, approximately 1.4 cubic metre of loose quantity shall be required. As per IRC 37, the base layer may consist of Wet Mix Macadam (WMM), Water Bound Macadam (WBM), Crusher Run Macadam (CRM), Reclaimed Concrete, etc. Thus, royalty from the contractor is recoverable for the quantity of minerals actually consumed in the work and not on the compacted quantity[67].

Audit scrutiny of 270 agreements of 18 PWD Divisions revealed that in 213 agreements of 17[68] PWD Divisions, the contractors had executed compacted quantity of 27,56,163.55 cum of GSB/WMM/CRM[69] in construction of roads. As per the provisions of SOR, loose quantity comes out to be 1.4 times the compacted quantity, i.e. 38,58,628.96 cum of loose quantity of material was actually consumed in these works. Thus, royalty of ₹ 38.59 crore, at the rate of ₹ 100 per cum, was to be deducted from the contractors. However, it was noticed that the PWD deducted royalty of only ₹ 27.56 crore on the compacted quantity of GSB/WMM/CRM, instead of loose quantity of minerals used in these works, resulting in short deduction of royalty of ₹ 11.03 crore, as detailed in **Appendix 2.6.8**.

Government (PWD) stated (August 2020) that royalty is to be calculated on compacted quantity as per provisions of IRC and that the calculation in audit para seems incorrect as CRM has been taken in the same category.

The reply is incorrect as MoRTH and IRC specifications are only for taking measurement of executed items of a work and payment thereof, and not for royalty calculation. Further, as per M.P. Minor Mineral Rules, royalty is payable on the actual quantity of minerals consumed in the works.

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67 Compacted quantity is quantity paid to contractor.

68 Agar Malwa, Alirajpur, Budhni, Burhanpur, Dhar Hoshangabad, Jabalpur, Katni, Ratlam, Rewa, Singrauli, Tikamgarh, Umariya, Ujjain, Rajgarh, Shivpuri and Guna.

69 Granular Sub Base (GSB), Wet Mix Macadam (WMM) and Crushed Run Macadam (CRM).

2.6.4 Conclusion

The Works Departments did not ensure deduction of royalty on use of minor minerals at prescribed rates from the bills of the contractors; nor did they insist on production of No Dues Certificate of royalty from competent authorities for use of minor minerals in construction works. Where royalty amount was deducted from the contractors' bills, in several cases, the amount was not deposited promptly in Government Account under the relevant Head. Further, market rate of minor minerals used in construction works was not recovered from contractors despite the latter not registering their details in online portal, in deviation from Mineral Resources Department orders.

Bhopal
The 19 April 2021

(BIJIT KUMAR MUKHERJEE)
Accountant General (Audit-II)
Madhya Pradesh

Countersigned

New Delhi
The 17 May 2021

(GIRISH CHANDRA MURMU)
Comptroller and Auditor General of India