

CHAPTER - II

PERFORMANCE AUDIT

2.1 Performance Audit on Gosikhurd National Irrigation Project

CHAPTER II

Performance Audit

WATER RESOURCES DEPARTMENT

2.1 Performance Audit on Gosikhurd National Irrigation Project

Executive summary

Gosikhurd Irrigation Project was approved in March 1983 to create irrigation potential of 2,50,800 hectares annually in Bhandara, Nagpur and Chandrapur districts. The Project comprised construction of earthen dam and spillway, Left Bank Canal, Right Bank Canal, nine Lift Irrigation Schemes and augmentation of the existing Asolamendha tank. The project was declared as a 'National Irrigation Project' by the Government of India in February 2009.

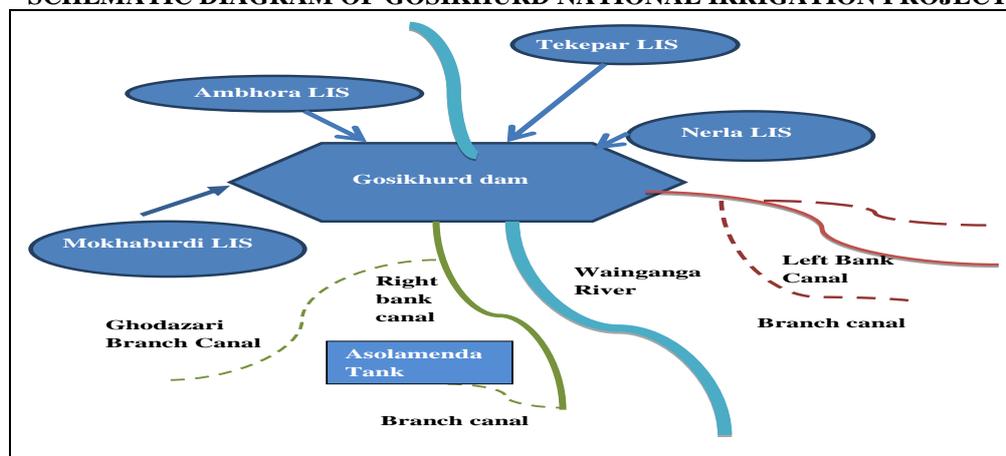
A performance audit of the Gosikhurd National Irrigation Project for the period 2012-17 revealed that despite being responsible for execution of an enlisted national project with aim of providing huge irrigation benefit and impetus to other water related activities, the department failed on all fronts to implement and deliver.

- Inherent flaws in planning *viz.* faulty survey, non-acquisition of private/forest land, incorrect estimation necessitated mid-course changes in scope of the project leading to disruption of work.
- The project witnessed huge cost escalation from ₹ 372 crore to ₹ 18,495 crore. But in absence of viable funding plan, the revised cost was not approved by Central Water Commission. Moreover, due to irregularities in execution of the project there was shortfall in release of funds by Government of India.
- Several instances of violation of manual provisions and contract conditions were noticed in execution of project which resulted in undue benefit to the contractors.
- The rehabilitation of Project Affected Persons was delayed as the required amenities were either not created or were incomplete. In some cases, double payment of compensation and delayed payment were noticed leading to financial burden on the public exchequer.
- Even after completing 34 years and spending ₹ 9,712.09 crore only 20 *per cent* of envisaged irrigation potential could be realized.
- For optimum utilization of water only 45 Water Users Associations (WUAs) were created as against the target of 387 WUAs.
- The departmental supervision was minimal resulting in substandard quality of work.
- The dam water was being polluted due to unregulated release of sewage in the connecting rivers.

2.1.1 Introduction

Gosikhurd Irrigation Project is a major project in the Godavari basin on River Wainganga near Gosikhurd village in Bhandara district of Maharashtra. The project was approved in March 1983 to create irrigation potential (IP¹) of 2,50,800 hectares (ha) annually in Bhandara, Nagpur and Chandrapur districts. The irrigable command area (ICA²) was 1.90 lakh ha land out of Culturable Command Area (CCA³) of 2.00 lakh ha. The Project comprised construction of earthen dam and spillway having storage capacity of 1146.08 Mm³, 22.93 kilometer (km) long Left Bank Canal (LBC), 99 km long Right Bank Canal (RBC), nine⁴ Lift Irrigation Schemes (LIS) and augmentation of the existing Asolamendha tank. The Project also envisaged supply of water to industries⁵ and generation of three Megawatt of electricity. After formation of Vidharbha Irrigation Development Corporation (VIDC), the Project was handed over (April 1997) to it for speedy execution of the work. The project was declared as a 'National Irrigation Project' by the Government of India (GoI) in February 2009.

SCHEMATIC DIAGRAM OF GOSIKHURD NATIONAL IRRIGATION PROJECT



2.1.2 Organisational set-up

Implementation of the Project is monitored by the Principal Secretary, Water Resources Department (WRD), Government of Maharashtra (GoM) who is also the Managing Director of VIDC. The Chief Engineer (CE), Gosikhurd Project, WRD, Nagpur is responsible for execution of various project works assisted by two⁶ Superintending Engineers (SE) and nine⁷ Executive

- 1 Area to be irrigated annually for all seasons of crop is worked out from irrigable command area and number of crops taken during the year
- 2 Area out of total cultivable area where irrigation is being provided
- 3 Total cultivable area available
- 4 Four LIS at Ambhora, Mokhabardi, Nerla and Tekepar on dam, two LIS at Akot and Gosi on LBC and three LIS at Pauni, Sheli and Shivnala on RBC
- 5 Jawaharnagar Ordinance Factory, Bhandara and National Thermal Power Corporation Mouda
- 6 SE, Gosikhurd Lift Irrigation Circle, Ambadi (Bhandara) and SE, Gosikhurd Project Circle, Nagpur
- 7 Rehabilitation Division, Ambadi; Gosikhurd LIS Division, Ambadi; Ambhora LIS Division, Bhiwapur; RBC Division, Bramhapuri; Asolamendha Renovation Division, Nagbhir; Rehabilitation Division, Nagpur; Gosikhurd Dam Division, Wahi (Pauni); RBC Division No.1, Wahi (Pauni) and LBC Division, Wahi (Pauni)

Engineers (EE). The funds for implementation are routed through VIDC which exercises overall technical and financial control.

2.1.3 Audit Objectives

The audit objectives were to assess whether:

- the planning for components of the project was proper and in consonance with the project objectives;
- project execution was economic, efficient and effective and led to creation of targeted IP and allied benefits;
- rehabilitation of PAPs was done as intended; and
- effective monitoring mechanism and a proper internal control system were in place.

2.1.4 Audit Criteria

The audit criteria were derived from following documents:

- Detailed Project Report;
- Minor Irrigation Manual, 1983;
- Maharashtra Public Works Manual, 1968 (MPWM);
- Vidarbha Irrigation Development Corporation Act, 1997;
- Guidelines for Implementation of National Projects;
- Maharashtra Project Affected Persons (Rehabilitation) Act, 1986 and amendments in 1999 (MPAPR);
- Forest Conservation Act, 1980;
- Land Acquisition Act, 1894 and subsequent LA Acts (The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013); and
- Government Resolutions and Instructions/orders relating to the works, rehabilitation *etc.*, issued by GoI, GoM and VIDC from time to time.

2.1.5 Scope and methodology of Audit

Performance audit on “Gosikhurd National Irrigation Project” covering a period of five years from 2012-17 was conducted between January 2017 to June 2017. Records of all the nine executing divisions (EEs), two SEs, CE and Executive Director (VIDC) were scrutinised.

Issues pertaining to acquisition of land and rehabilitation of Project Affected Persons (PAPs); records of six Deputy Collectors (Land Acquisition)/Deputy Collector (Resettlement) falling under Bhandara and Nagpur Collectorates were also examined.

The recommendations of Public Accounts Committee (April 2017) on Performance Audit on Gosikhurd Irrigation Project appeared in Report of the Comptroller and Auditor General for the year ended March 2007 (Civil)

Government of Maharashtra was also taken into consideration during finalisation of this report.

The audit objectives, methodology and scope of the performance audit were discussed with the Secretary, WRD, GoM in an entry conference held on 22 February 2017. An exit conference was held on 6 October 2017 with the Secretary, WRD, GoM wherein the audit findings and recommendations were discussed. The views of the WRD during exit conference have been considered while finalising the Performance Audit Report.

Audit Findings

2.1.6 Planning

The chronology of the project is given in **Table 2.1.1**.

Table 2.1.1: Chronology of the project

(₹ in crore)

Administrative Approval (AA)	Year of sanction	Sanction amount
Original AA	March 1983	372
First Revised AA	July 1999	2091
Second Revised AA	November 2007	5659
Third Revised AA	September 2016	18495

Source: Information furnished by VIDC

Gosikhurd project was declared 'National Project' in February 2009 and as per the Memorandum of Understanding (MoU) executed (2008-09) between GoI and WRD (GoM), it was scheduled to be completed by March 2014. However, as per the revised schedule (August 2016), it is now proposed to be completed by March 2020. As of March 2017, an expenditure of ₹ 9,712.09 crore (**Appendix 2.1.1**) was incurred on the project since its inception.

The audit observations noticed during planning process are discussed in the succeeding paragraphs.

2.1.6.1 Inadequate Survey

According to the Detailed Project Report (DPR) (1983), the ICA of the project was envisaged to be 1.90 lakh ha which was apportioned among the various project components. It was, however, observed that there was overlapping in the command area, which necessitated changes in scope of the project, as mentioned below;

➤ The ICA of 11,767 ha comprising three existing lift irrigation schemes at Haranghat, Borghat and Wagholi was included in ICA of Asolamendha Tank. Thus, it had to be deleted from the planned ICA of Asolamendha tank. To compensate for the reduction in command area, three new LIS at Pauni (2,539 ha), Sheli (2,055 ha) and Shivnala (1,454 ha) and additional ICA of 5,719 ha area on RBC were included (October 2015) in the third Revised Administrative Approval (RAA) of the Gosikhurd Project, leading to cost escalation of ₹ 365.30 crore.

➤ In the Mokhabardi LIS, the command area was reduced by 7.90 km due to canal alignment falling in forest area. Accordingly, to compensate for the reduction in canal area, Wadala Branch Canal was proposed for catering to

the irrigation needs of 6880 ha, involving an additional cost of ₹ 369.63 crore.

➤ 700 ha command area of Ambhora LIS was affected due to rehabilitation of project affected village. So a new Kinhi distributory was proposed, entailing a cost of ₹ 36.03 crore.

WRD stated that the DPR was prepared on the basis of survey of 10 per cent area instead of detailed survey. However, the estimates were prepared after detailed survey of the concerned site. As regards the rehabilitation of project affected village, it was stated that the process of land acquisition could not be completed due to public resentment over the rate of compensation. The land acquisition, however, would be completed by March 2018.

Thus, the flaws in survey in demarcating the command area of the project components led to changes in the scope of project and entailed additional cost of ₹ 770 crore as shown in the **Table 2.1.2**.

Table 2.1.2: Change in ICA of project

(Area in ha and ₹ in crore)

Sr. No.	Name of component	ICA as per the RAA		Excess/deficit in ICA	Excess in cost
		2 nd	3 rd		
1	Right Bank Canal	48760	54479	5719	80.69
	Pauni LIS, Sheli LIS and Shivnala LIS	0	6048	6048	452.88
	Asolamendha Tank	53342	41575	(-) 11767	(-) 168.27
2	Mokhabardi LIS	21390	21390	0	369.63
3	Ambhora LIS	8481	8481	0	36.03
	Total				770.96

Source : Information furnished by selected divisions

2.1.6.2 Delays in acquisition of land

As of March 2017 the land required for the project is shown in the **Table 2.1.3** below:

Table 2.1.3: Land required for the project

(Area in ha)

Particulars	Private land	Government land	Forest land	Total
Total land required for project	31028.28	5764.50	3552.69	40345.48
Actual land acquired	27359.66	5764.50	3068.54	36192.70
Land yet to be acquired	3668.62	0	484.15	4152.77

Source: Information furnished by VIDC

In nine test-checked divisions it was noticed that 19 works executed by five⁸ divisions were awarded (March 2009 to June 2014) at a cost of ₹ 24.87 crore to the contractors. Owing to non-availability of land, the works could not start or were delayed by two to eight years from the date of issue of work orders. In five⁹ divisions, 34 works relating to distribution network of RBC and LBC

8 RBC Division No. 1, Wahi (Pauni); RBC Division, Bramhapuri; LBC Division, Wahi (Pauni); Asolamendha Renovation Division, Nagbhid and Gosikhurd Lift Irrigation Division, Ambadi, Bhandara

9 RBC, Division No. 1, Wahi (Pauni); RBC Division, Bramhapuri; LBC Division, Wahi (Pauni); Asolamendha Renovation Division, Nagbhid and Ambhora Lift Irrigation Division, Bhiwapur

main canal were initiated (February 2008 to November 2014), but held up due to non-availability of private/forest land after incurring an expenditure of ₹ 162.55 crore.

It is evident that the department had not ascertained the availability of land prior to issue of work orders in violation of the Maharashtra Public Works Manual.

The WRD stated that the guidelines for implementation of the Land Acquisition Act, 2013 were not available till April 2015. Thus, owing to difficulties encountered in implementation, there was delay in acquisition of land. As on date 4,194 ha of land remains to be obtained, however, process of acquiring the balance land has been taken on fast track which would be completed by the end of March 2018.

The reply of the Department was not tenable as the new Land Acquisition Act, came into force in 2013 whereas the cases of land acquisition were pending since 2009-10. The delayed acquisition/non-acquisition of land resulted in non-initiation/non-completion of the works of distributaries, minors and sub-minors of RBC and LBC.

2.1.7 Project cost

The project received funds under Accelerated Irrigation Benefit Programme (AIBP) since 1997 from GoI and GoM. As per second RAA, the cost of project had sanctioned (November 2007) for ₹ 5,659.09 crore. After declaration of the project as a National Project (February 2009), the balance cost was worked out to ₹ 4,458.87 crore of which GoI was to provide ₹ 4,012.98 crore (90 per cent) under AIBP and ₹ 445.89 crore (10 per cent) to be provided by GoM.

The cost of the project further escalated in the third RAA and went up to ₹ 18,494.57 crore, owing to increase in Current Schedule of Rates (CSR) (price level), increases in cost of land acquisition, change in design and drawing, omissions in providing certain additional items, acceptance of higher tender, other reasons *etc.* as shown in the **Table 2.1.4.**

Table 2.1.4: Project cost escalation

(₹ in crore)		
Sr. No.	Reasons	Amount of increase
1	Increases in CSR (price level)	3544.95
2	Acceptance of higher tender	247.79
3	Increases in cost of land acquisition	1973.79
4	Change in design and drawing (structural change)	1646.72
5	Excess in cost of project due to inadequate provision	3067.02
6	Excess due to other reason	1490.58
7	Indirect expenses	864.63
	Total	12835.48
<i>Source : Information furnished by VIDC</i>		

The third RAA, as of November 2017, had not been approved by the Central Water Commission (CWC) in absence of credible work-financing plan. Therefore, funding for the balance amount of ₹ 8,782.47 crore from GoI was

not assured. The component wise increase of the project cost and balance cost as of March 2017 is shown in **Appendix 2.1.1**.

It is pertinent to mention here that the target date of completion of the project is March 2020 and delay in submission and finalisation of funding plan to GoI may hamper the project progress.

2.1.7.1 Release of funds

The details of funds released and expenditure incurred on the project since its declaration as a National project is shown in the **Table 2.1.5**.

Table 2.1.5: Funds released and expenditure incurred

(₹ in crore)						
Year	Grants released by GoI	Grants released GoM	Total Grant released	Additional contribution released by GoM	Total grant released	Expenditure incurred
2008-09	450.00	50.00	500.00	0	500.00	384.92
2009-10	720.00	80.00	800.00	0	800.00	884.84
2010-11	1412.94	156.99	1569.93	0	1569.93	922.85
2011-12	0	0	0	431.80	431.80	974.14
2012-13	405.00	45.00	450.00	0	450.00	419.69
2013-14	0	0	0	507.00	507.00	751.95
2014-15	0	0	0	258.72	258.72	284.08
2015-16	0	0	0	1050.00	1050.00	637.09
2016-17	0	0	0	1000.00	1000.00	611.17
Total	2987.94	331.99	3319.93	3247.52	6567.45	5870.73

Source : Information furnished by VIDC

In addition to above releases, GoM had also released (February 2010 to January 2015) funds of ₹ 997.79 crore under special packages for rehabilitation of PAPs.

The GoI did not release funds during the year 2011-12 and from 2013-14 to 2016-17 since the GoM (September 2016) through Anti Corruption Bureau (ACB) initiated a probe to investigate irregularities noticed in awarding and execution of the works during the period from 2006 to 2010.

The WRD stated that the RAA was being scrutinized by CWC, Nagpur and would be submitted to GoI. The Central Assistance is expected as soon as the RAA for project is approved by GoI.

2.1.7.2 Funds received under Special Rehabilitation Package

GoM sanctioned two special Rehabilitation packages for PAPs amounting to ₹ 152 crore (package I¹⁰) and ₹ 1,199.60 crore (package II¹¹) in February 2010 and June 2013 respectively. Against this, an amount of ₹ 92.81 crore and ₹ 904.98 crore were released under package I and II respectively. The rehabilitation activities under these special packages were required to be executed by the Revenue department. As per the directions

10 For payment of interest on delayed payment of compensation, construction of houses/shopping complex and technical training to PAPs

11 For payment in lieu of farmland, rehabilitation grant, construction of shed for livestock, lump sum grant in lieu of employment, construction of houses for PAPs and administrative expenses

(October 2015) of the Divisional Commissioner (DC), Nagpur funds were not to be diverted from Package I to Package II or vice-versa.

➤ Under package-II, GoM had approved (June 2013) ₹ 23.52 crore for Administrative expenses, of which an expenditure of ₹ 10.17 crore was incurred as of March 2017. Thus, the balance amount of ₹ 13.35 crore had to be refunded to Government as per instructions issued (March 2017) by DC, Nagpur. The Deputy Commissioner (Gosikhurd), Nagpur, however, refunded an amount of ₹ 29.29¹² crore.

The WRD stated that unspent amount of ₹ 28.86 crore was refunded by VIDC due to dispute regarding legal heirs of the PAPs. The fact was that the intended purpose of release of Special Rehabilitation Package was not fulfilled.

➤ Three¹³ Deputy Collectors (Land Acquisition), Bhandara had diverted an amount of ₹ 2.71 crore of Package II, for making payments in various activities of Package I violating the existing instructions of DC, Nagpur citing the reason that due to non-receipt of grant under Package I, the amount was utilized from Package II.

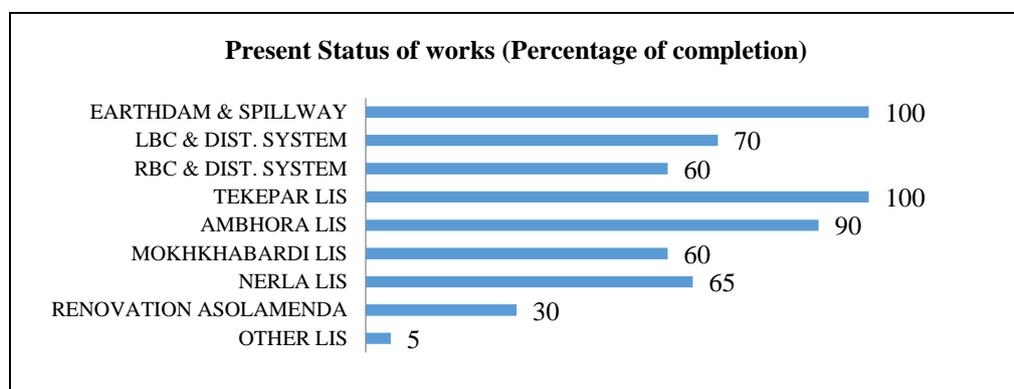
The WRD stated that there may be one or two isolated cases of such nature.

➤ Funds of ₹ 1,352.24 crore were released (February 1998 to March 2017) to six Deputy Collectors (Land Acquisition) for distribution to PAPs as compensation. As of March 2017, an amount of ₹ 90 crore was lying with these Deputy Collectors due to family dispute, no legal heir and death of beneficiaries.

The WRD stated that the position of unspent balance has been reduced considerably and further stated that remaining funds would be utilised in near future.

2.1.8 Execution of Project

The status of execution of the project as of March 2017 is shown below:

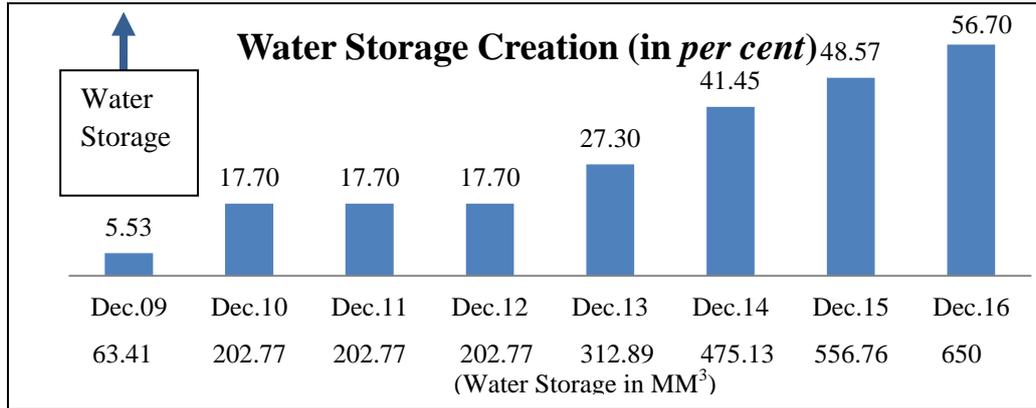


Since December 2008 the dam was being used partially for storing water. At the end of December 2016, water level of 242.50 m had been achieved in the

12 ₹ 28.86 crore (₹ 15.51 crore of Rehabilitation package and ₹ 13.35 crore of balance Administrative cost) plus ₹ 0.43 crore received from Deputy Collector (Resettlement), Nagpur pertains to balance amount of administrative expenses

13 Dy. Collector (LA) No. 1, Bhandara; Dy. Collector (LA) No. 2, Bhandara and Dy. Collector (LA) No. 3, Bhandara

reservoir with storage of about 650 Mm³ against the target of 1,146.08 Mm³. By December 2017, the water level of 245.50 m in the reservoir was targeted. Year wise development of water storage in Mm³ is indicated as below:



As per the revised deadline, the project has to be completed by March 2020. In order to expedite the project work, MoU has been executed (March 2017) between GoM and National Buildings Construction Corporation (NBCC) Limited for execution of works related to up-gradation of civic amenities in rehabilitated villages, right bank canal, canal and distribution system of Nerala and Mokhaburdi LIS *etc.*

2.1.8.1 Lining works of Left Bank Canal

The works of construction of cement concrete (CC) lining of the Gosikhurd Left Bank Canal (LBC) in km 1 to km 10 and in km 11 to km 22.93 were executed (August 2009) through two contractors at a cost of ₹ 25.80 crore and ₹ 25.69 crore respectively. However, due to substandard quality of lining works in the entire canal length, the CC lining developed cracks one to two years after completion. As the defects had appeared within the defect-liability period, the contractors were directed (March 2010) to re-execute the whole work. The rectification works were required to be executed under clause 20 of the contract agreement according to which, contractor was liable for any damage, defect or imperfections noticed within a period of 24 months from the date of completion of work. The clause also specified that the entire cost including dismantling and reconstruction had to be borne by the contractor. The above observation had already appeared as para 2.3.7.5 in the CAG's Audit Report (Civil) for the year 2010-11. The Public Account Committee (PAC) had also expressed (September 2016) its displeasure over the poor progress of the lining work.

Audit scrutiny revealed that the rectification work was being carried out at a very slow pace. Initially, it was expected to be over by June 2012. Time extensions were accorded with revised deadline of March 2018. But, as of March 2017, reconstruction work was carried out only in 1.2 km (5 per cent) of the canal length. The present status of work is shown in the photographs below:

	
The Reconstruction of CC lining works completed at Km 0 to 1.2 bed (at Tahsil Pauni, District Bhandara)	The Reconstruction of CC lining work not executed in canal bed (at Tahsil Pauni, District Bhandara)
	
Removed the cracked CC lining but reconstruction of CC lining works not started bed (at Tahsil Pauni, District Bhandara)	The Reconstruction of CC lining work not executed at canal bed (at Tahsil Pauni, District Bhandara)

It was further observed that two works pertaining to construction of RBC distributaries were awarded (May 2011 and July 2014) to the same contractors at a cost of ₹ 24.84 crore though these two contractors had executed defective and substandard works of lining of LBC.

The WRD stated that entire lining works would be completed by June 2018. The Department, however, did not provide any explanation for the slow progress of work and for awarding the work of RBC distributaries to the same contractors who executed defective work.

2.1.8.2 Execution of work on Right Bank Canal

The work of design and construction of Aqueduct¹⁴ on Gosikhurd Right Bank Canal (RBC) was awarded (January 2008) on C tender¹⁵ at a cost of ₹ 12.23 crore. The conditions of agreement provided that the work was to be executed as per the drawings and design of the contractor.

The contractor completed the work (January 2010) and was paid (February 2011) ₹ 13.26 crore. The completion certificate issued (January 2010) by the Assistant EE certified the standard specification and other prescribed requirement. Due to heavy rainfall in August 2012, the earthwork upstream and downstream of the Aqueduct was damaged along with some structural damages to transition support system and wing wall. The EE did not take any action for repairs to the damaged portion of Aqueduct and released water (January 2014) which worsened the condition of the already damaged Aqueduct. The CE, WRD, Nagpur who was appointed as enquiry officer by VIDC for finding reasons for damages to the banks of Aqueduct, mentioned in his report that the contractor had not executed the work as per drawing and design in violation of clause 1.2, 1.5 and 1.12 of the agreement. The VIDC then issued (July 2015) legal notice to the contractor for not

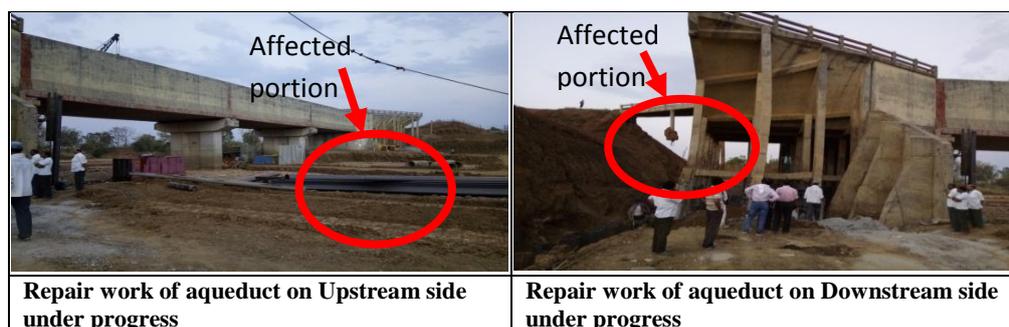
14 Aqueduct is a structure, usually a bridge, that carries such a conduct or a canal across a valley or river

15 C tender is a lump sum offer on contractor's own design and drawings

executing the work as per drawing and design of the DPR.

Audit observed that after the completion of Aqueduct in January 2010, it could not be commissioned due to incomplete work of RBC. Even the hydraulic testing was not carried out. Thus, failure on the part of VIDC to commission the Aqueduct on its completion, deficiency in certification/monitoring of execution of works by the divisional engineers and lethargic approach in taking appropriate corrective measures on defective work resulted in unfruitful expenditure of ₹ 13.26 crore incurred on construction of Aqueduct. In spite of the fact that the contractor did not execute the work as per drawing and design, EE refunded (June 2012) the security deposit of ₹ 21.56 lakh to the contractor.

It was observed that EE had further awarded (October 2016) the work for repairs¹⁶ to Aqueduct at a cost of ₹ 16.55 crore to another contractor with stipulated date of completion of work in January 2017. The work was in progress (November 2017) as shown below:



As the damaged aqueduct structure was not repaired in time, an additional cost of ₹ 88.95 lakh was incurred for irrigating 4,374 ha (September 2015 to January 2016) using MS pipes as a temporary measure.

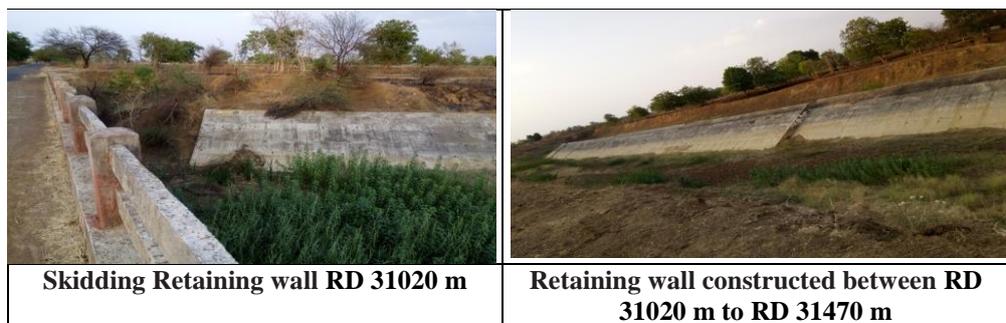
The WRD stated that due to rains and subsequent release of water, the structures upstream and downstream as well as the Inspection Path and Service Road got damaged. However, the aqueduct structure was restored and water was released through it and the department had issued legal notice to the concerned contractor.

The reply is not convincing as the department without ensuring the quality of work issued the completion certificate to the contractor and also delayed in taking appropriate corrective measures. This resulted in avoidable expenditure on strengthening of aqueduct.

Further, in order to provide safety to the canal from heavy rainfall, retaining walls of length 3,515 m were constructed (May 2008 to May 2009) at selected patches of the RBC at a cost of ₹ 51.48 crore. However, on account of heavy rainfall (September 2010), the retaining wall from RD 20850 m to RD 20990 m and RD 31020 m to RD 31470 m fell into the canal bed.

During joint site visit (22 May 2017) conducted by audit with the officials of Gosikhurd RBC Division, Bramhapuri the damaged portions of retaining wall were observed as under:

¹⁶ Work of strengthening of approaches of aqueduct at RD 45660 on GRBC to M/s. SEW Infrastructure Ltd.



The WRD stated that due to strata conditions, the retaining wall shifted. The experts from IIT, Gandhinagar had been entrusted with the work of strata treatment and the report on the same was expected within two months by January 2018. Based on their recommendations, the rectification work would be carried out.

The reply of the WRD was not convincing as geological factor strata analysis had been done nearly 15-20 years back and current analysis of strata was not available with them. Further, the reply of the Department indicates that the work of retaining walls was executed without detailed study of the strata and led to unfruitful expenditure of ₹ 51.48 crore.

2.1.8.3 Asolamendha Tank

To augment the storage capacity of already existing Asolamendha tank in Chandrapur district it was proposed (1983) in the DPR to increase its length and height along with construction of main canals and two branch canals at Vyahad and Dighori. This required 22.21 ha of Government land, 984.46 ha of private land and 298.02 ha of forest land. It was observed that 16.29 ha of Government land and 120.15 ha of private land constituting only 10 *per cent* of the required land were under the possession of the department. Thus, in absence of actual land, the drawings and designs of various structures were not finalized. Despite this, the department went ahead and awarded the works.

The work of renovation of canal system was awarded (August 2009) at a tendered cost of ₹ 361.71 crore. The contractor, however, could only execute (October 2016) the work amounting to ₹ 188.92 crore as the required forest land could not be acquired and design and drawings of canal structure were not finalized.

Similarly, the work of raising the height of existing Asolamendha tank, construction of waste weir, head regulator and renovation of Vyahad branch canal was awarded (February 2010) to the same contractor at a tendered cost of ₹ 182.51 crore. In absence of design and drawings and permission to cut trees on the forest land, the earth work and lining work of the canal could not be executed till date (November 2017). The contractor has been paid ₹ 46.27 crore (June 2017) for the work executed by him up to August 2016. Further, the above works came under ACB scrutiny for alleged irregularities, division issued (November 2016) show cause for withdrawal of work under Clause 15 (1) of the agreement. The work was yet to be withdrawn (November 2017).

Due to proposed increase in the height of Asolamendha tank two villages viz. Asolachak and Sawangi were required to be rehabilitated. For this purpose, land measuring 14.33 ha (11.23 ha revenue land and 3.10 ha private land) was required. It was observed that private land required was yet to be acquired (November 2017).

The action of the division to award work without acquiring land was in contravention of the manual provisions. The design and drawings of canal structure, waste weir and head regulator were not finalised before award of work. Rehabilitation of two affected villages was yet to be taken up. As of March 2017, despite expenditure of ₹ 235.19 crore incurred on the renovation of Asolamendha, the desired irrigation potential of 54,879 ha could not be achieved.

The WRD accepted that due to non-acquisition of land, the project was delayed. They stated that land acquisition was expected to be completed within two years and thereafter the work of project would be completed.

2.1.8.4 Execution of Mokhabardi LIS

With an objective to irrigate 28,235 ha, Mokhabardi Lift Irrigation Scheme was taken up as one of the components of Gosikhurd project. The designs and drawings¹⁷ were approved by Central Designs Organisation, Nashik (CDO). The Chief Engineer, Gosikhurd Project accorded (March 2006) technical sanction to Mokhabardi LIS. The work of execution of Mokhabardi LIS on turn-key basis was awarded (July 2006) to a contractor for ₹ 224.37 crore including items on survey, drawing and design besides civil and electrical work.

The contractor, based on this, submitted (July 2006) his own design, drawings and layout which involved substantial reduction in quantity of work and in the specification and capacity of rising mains¹⁸ and pumps. The contractor's design and drawing was approved by the standing committee of VIDC. While approving the design and drawings of contractor, VIDC, however, did not put any condition that in the event of savings, the proportionate cost of savings would be deducted from the amount payable to him.

It is pertinent to mention that the above work was awarded on lump-sum contract basis wherein the amount to be paid to the contractor was fixed at the tendered amount irrespective of increase/decrease in the executed quantities. But due to substantial differences between the two design and drawings *i.e.* as approved by CDO and as submitted by the contractor, it was not accepted by the GoM. It was also directed (December 2007) that the diameter and thickness of the rising main should be kept as per the original design approved by the CDO earlier and if the work was executed as per contractor's design, approved by the VIDC, the amount of reduced quantity should be deducted from the contractor's dues. Meanwhile the work on Mokhabardi LIS continued as per the contractor's design. The EE based on GoM directions recovered ₹ 17.78 crore from the contractor (July 2010).

17 which included total discharge-35 cumecs, rising main length-4500 meter, diameter of rising main-2500 mm, thickness-16 mm and four rows of rising main

18 The Rising main is the pipeline conveying the pump discharge of water to the distribution chamber under Hydrostatic pressure

Subsequently, the contractor filed a writ petition in the High court against VIDC. The dispute was resolved through arbitration and an award (August 2013) of ₹ 32.56¹⁹ crore was passed in favour of the contractor. VIDC paid the amount (October 2016).

Thus, unconditional acceptance of the contractor's design in deviation of approved design of CDO, Nasik resulted in avoidable expenditure of ₹ 14.80 crore. The work further lagged behind as the alignment of 132 KV HT line could not be shifted and resultantly Mokharbardi LIS was lying incomplete (March 2017). The EE apprised (May 2017) that the work of project along with the work of shifting alignment of 132 KV HT was in progress.

The WRD stated that unlike 'B-1 tenders', there was no provision in 'C tenders' to recover the savings, if any, from the contractor and payments were made as per stages in execution of the work. WRD further stated that work would be completed within four months.

The reply was not tenable as VIDC approved the drawing and design of the contractor without analysis of savings or excess in comparison with earlier approved design by the CDO and accordingly did not safeguard their interest.

2.1.8.5 Preparation of inaccurate estimates

As per Chapters 3 and 4 of Maharashtra Minor Irrigation Manual, 1983, irrigation schemes should be prepared after preliminary investigation which included estimation and identification of land for the project, topography of the site, source of water, seasonal discharge of water and other environmental aspects. After preliminary investigation, division should carry out survey to determine the quantities of earth/masonry works according to the storage capacity of irrigation infrastructure and prepare the project report. The detailed cost estimates, benefit cost ratios and other economic parameters such as, irrigable command area, anticipated area to be irrigated annually, intensity of irrigation *etc.* should be reflected in the project report.

Extra items

Audit observed that in four²⁰ test checked divisions, in 13 sub-works related to RBC and Mokhabardi LIS component of the project with a tendered cost of ₹ 400.34 crore, extra item rate list (EIRL²¹) items amounting to ₹ 15.52 crore cropped up during the execution of works, which were not included in contract as they were not anticipated at the time of framing the estimates. As of March 2017, total expenditure of ₹ 10.97 crore was incurred on these EIRL items.

19 ₹ 16.94 crore towards saving in quantity plus ₹ 15.49 crore towards interest plus ₹ 0.13 crore towards arbitration cost

20 Ambhora LIS Division, Bhiwapur; RBC Division, Bramhapuri; Asolamendha Renovation Division, Nagbhir and RBC Division No. 1, Wahi

21 EIRL is the item of work which was not included in the tender and cropped up during the execution of work

Execution of excess quantity of work beyond 125 per cent

As per clause 38 of contract, the payment for additional quantities executed by the contractor up to 125 per cent of the tendered quantity was to be made at tendered rates and beyond 125 per cent, at the CSR, increased or decreased by the percentage of tender premium or rebate. In four²² test checked divisions, our scrutiny revealed that in 22 sub-works related to RBC, Mokhabardi LIS and Asolamendha Tank component of the project an additional cost of ₹ 92.84 crore was incurred on work items, beyond 125 per cent which were not anticipated at the time of framing the estimates. As of March 2017, total expenditure of ₹ 72.46 crore was incurred on above works.

The WRD stated that the estimates were prepared by taking trial pits at 500 m intervals for small structures and for large structures trial bores were taken. However, during execution, owing to certain modifications, on account of approved designs, extra quantities beyond 125 per cent and extra items cropped up.

2.1.8.6 Inefficient Planning

The following work was yet to be completed (November 2017) due to inefficient planning.

To avoid inflow of backwater from Gosikhurd reservoir in to the city, the construction of earthwork and stone pitching²³ for the road over the flood protection bund to Bhandara city was awarded (June 2009) for ₹ 15.91 crore with scheduled completion by December 2012. The permissions to join the bund to National and State Highway were, however, not taken from the National Highway Authority and State PWD respectively. Consequently, the work was held up since May 2012 after incurring an expenditure of ₹ 23.70 crore.

In February 2016, the contractor had requested for withdrawal of work under Clause-15 of the agreement citing the reasons that due to stoppage of work he was incurring losses on account of labour and machinery. No decision was, however, taken (February 2017) by the WRD.

The WRD stated that some decisions were pending with PWD and balance works would be completed by December 2018.

Thus, lack of planning resulted into non-completion of work despite incurring an expenditure of ₹ 23.70 crore.

2.1.8.7 Command Area Development and Water Management Programme

The Command Area Development and Water Management (CAD&WM) Programme was introduced (2008-09) by GoI to improve water use efficiency, to increase agricultural productivity and production and to make agriculture sustainable in a participatory environment. Under one of its component *viz.* On-Farm-Development, activities like construction of field channels, land leveling and shaping, realignment of field boundaries *etc.* were to be executed.

22 Ambhora LIS Division, Bhiwapur; RBC Division, Bramhapuri; Asolamendha Renovation Division, Nagbhir and RBC Division No. 1, Wahi

23 The act of revetting or paving with small rough-faced stones

The cost norm for this component was ₹ 22,000 per ha and to be equally shared between the Central and State Government. Further, 10 per cent of the total cost of work was to be recovered from the beneficiaries as a part of the State Government share.

It was observed that no funds were earmarked for CAD&WM works prior to the third RAA of the project. A total provision of ₹ 234.48 crore for CAD&WM programme had been made while according (September 2016) third RAA. As a result, an expenditure of only ₹ 15.00 crore had been incurred after covering an area of 13,893 ha under this programme (March 2017).

Moreover, the progress of CAD&WM works had also been hampered due to the farmers' reluctance in carrying out on-farm development activities. Further, 10 per cent beneficiary share was not being contributed by the farmers.

The WRD stated that for the sustainability of the project all the three cropping patterns were considered and the farmers were being encouraged to go in for more than one type of crop for their prosperity.

2.1.8.8 Non-adherence to Government instructions

Scrutiny of records revealed following instances of non-adherence to Manual provisions and Government Resolutions/Circulars:

Non-execution of plantation work

The MoEF, GoI had cleared (February 1988) the environmental and forest clearance for the project subject to the conditions that tree plantation on either side of canals and roads, foreshore of reservoir and in the wasteland/vacant land should be done. It was observed that provisions for plantation was made in the Administrative Approval and revised AA. However, plantation works amounting to only ₹ 1.41 lakh were carried out against the provision of ₹ 13.76 crore made in the third RAA.

Thus, plantation works which were critical for maintaining the environmental balance were put on the backburner.

The WRD stated that plantation would be done through other plantation programmes.

Irregular retention of Insurance charges, royalty and Workers Welfare Cess amount

In four out of nine divisions, the recoveries made towards Insurance charges, Royalties and Workers Welfare Cess amounting to ₹ 3.60 crore from contractor's running account bills were kept in Civil Deposit head (i.e. Major Head 8443) instead of crediting the same into respective heads of account. The details are shown in the **Table 2.1.6**.

Table 2.1.6: Details of recoveries made towards Insurance charges, Royalties and Workers Welfare Cess

(₹ in lakh)

Sr. No.	Name of the Division	Amount of Insurance charges	Amount of Royalty	Amount of Workers Welfare Cess	Total amount kept in deposit
1	Asolamendha Project Renovation Dn., Nagbhir	24.45	22.47	4.35	51.27
2	Ambhora Lift Irrigation Dn., Bhiwapur	201.76	65.90	-	267.66
3	RBC Dn., Bramhapuri	37.28	-	-	37.28
4	Gosikhurd Dam Division, Wahi (Pauni)	3.78	-	-	3.78
	Total	267.27	88.37	4.35	359.99

Source : Information furnished by the selected divisions

The WRD stated that the necessary action would be taken for depositing the amount into respective heads soon.

Injudicious provision of insurance charges in estimates

PWD issued (July 2005) instructions that all the works executed by different Government departments, semi-Government organizations or autonomous bodies were to be insured with the Director of Insurance (DoI), GoM, Mumbai. The DoI had also laid down that in case of non-production of proof of having insured the work with a Government insurance fund by the contractor, one per cent of the tendered cost was to be deducted from the bills of the contractor and deposited in the Government Insurance Fund as insurance charges.

Test check (May 2017) of three works executed by two²⁴ divisions, showed that insurance charge of one per cent was loaded in the estimates/Schedule of Rates. However, the insurance charges paid by the contractors ranged from 0.22 per cent to 0.31 per cent of the tendered costs. The contractor thus got undue benefit of ₹ 2.80 crore as detailed in **Appendix 2.1.2**.

The WRD stated that as per CSR, provision of insurance charges was made in the estimates. However, the matter of Insurance component would be taken care in the current CSR.

2.1.9 Rehabilitation and Resettlement Programme

The Maharashtra Project Affected Persons Rehabilitation (MPAPR) Act of 1986 (amended in 1999) prescribed guidelines to execute the rehabilitation work in Maharashtra State. It provided for rehabilitation of affected persons from affected zone to the benefitted zone of irrigation projects or elsewhere. The land acquisition process for acquiring the gaathan²⁵ area and agriculture land was carried out by the Revenue Authority of GoM. The State Government was required to provide 18 civic amenities in the prescribed scale and manner in the new gaathan or in the extended part of any existing gaathan established for the purpose of rehabilitation of affected persons.

24 Ambhora Lift Irrigation Division, Bhiwapur and Asolamendha Division, Nagbhir

25 Residential area of village

The resettlement of Project Affected Persons (PAPs) had been planned in three stages, as per the water level of dam. First stage was up to level 239.00 m, second stage was up to level 242.00 m and third stage was up to level of 245.50 m. As of March 2017, total expenditure of ₹ 1,262.19 crore had been incurred on the Rehabilitation and Resettlement (R&R) works. Rehabilitation of Stage 1 had been completed, and stages 2 and 3 were in progress. As of March 2017, the stage-wise position of rehabilitated PAPs is shown in **Table 2.1.7**.

Table 2.1.7: Stage-wise position of number of affected villages, affected families, completion of civic amenities and shifting of families

Stage No.	No. of Affected Gaothan	No. of Rehabilitated Gaothan	No. of Rehabilitated Gaothan in which all 18 civic amenities were completed	No. of Affected Gaothan shifted		No. of Affected families	Shifting of families		No. of balance families to be shifted
				Fully	Partially		Number	Percentage	
Stage 1	18	13	13	18	0	3215	3215	100	Nil
Stage 2	40	28	28	17	23	6100	5021	82	1079
Stage 3	27	23	13	6	21	5669	2400	42	3269
Total	85	64	54	41	44	14984	10636	71	4348

Source : Information furnished by the Rehabilitation division

Work on providing the basic amenities in the nine alternative sites were yet to start (November 2017) due to non-availability of land, non-preparation of estimates at government level and plotting of land.

The construction of basic civic amenities in 54 rehabilitated villages started in the year 1999 and was completed during the period from 2000 to 2016. Due to delay (one year to six years) in handing over the completed civic amenities²⁶ to the Zilla Parishad, the basic civic amenities already created deteriorated for want of proper maintenance. As of August 2017, an expenditure of ₹ 49.12 crore was incurred on maintenance and repair works of these civic amenities.

The WRD stated that the work of providing basic amenities would be completed by March 2018.

2.1.9.1 Double payment of compensation

As per Section 2 of the MPAPR Act, agricultural labour not being an occupant means a persons who did not hold any land in the affected zone but earned his livelihood principally by manual labour on agricultural land/any trade or working for gain in a *gaothan* in the affected zone for not less than five years.

The Governing Council of the VIDC decided (October 2001) to give ex-gratia payment to such villagers who had constructed houses outside gaothan area on the encroached forest/Government land and expected to pay ₹ 7.08 crore approximately for 900 families in 61 affected villages.

Scrutiny of the records revealed that out of 900 families, 172 families who got ex-gratia payment of ₹ 1.19 crore for having houses outside gaothan area on the forest/Government land also had houses within the gaothan area and had

²⁶ Water supply system, Sewerage system, Market platforms, Grampachayat bhavan, Samaj Mandir, Internal roads etc.

already obtained compensation for the same. Thus, there was double payment of compensation of ₹ 1.19 crore.

The WRD stated that all the cases of PAPs to whom double payments were made would be scrutinised and reply would be furnished.

2.1.9.2 Delay in release of award amount

After declaration of compensation award by the Collector under Section 11 of the Land Acquisition Act, 1894, the executing agency was required to pay compensation amount to the revenue authority for onward disbursement to the PAPs. According to Section 31 and 34 of the LA Act, 1894, the Collector shall pay compensation amount before taking possession of the land. If such compensation amount was not paid prior to possession then the interest would be payable on the amount of compensation or part thereof.

It was noticed that for the award declared in 1999 to 2016, there were delay on the part of VIDC in releasing the due amount of ₹ 840.59 crore to Revenue authorities for onward disbursement to the PAPs prior to taking possession of the land. Hence, interest of ₹ 82.35 crore from date of declaration of award to the actual date of payment was paid for the delayed payment of compensation.

The WRD stated that information on funds demanded and actually received would be analysed and reply will be furnished.

2.1.10 Creation of Irrigation Potential and its utilisation

On completion of project, creation of Irrigation Potential (IP) of 2,50,800 ha was envisaged. During 2016-17, IP of 50,317 ha was created and out of which 37,733 ha was utilised. The component wise position of IP creation and utilization as of March 2017 is shown in the **Table 2.1.8**.

Table 2.1.8 : Irrigation potential created and utilised

(Figures in ha)

	RBC	LBC	Asola-mendha	Tekepar LIS	Ambhora LIS	Mokhabardi LIS	Nerla LIS	Total
Targeted IP	79894	40207	54879	7710	11195	28235	28680	250800
Created IP	10936	7238	10019	7710	10848	200	3366	50317
Utilisation in 2016-17	6083	9300	10092	4500	4258	3500	0	37733

Source : Information furnished by VIDC

2.1.10.1 Non-formation of Water Users Association

As per the VIDC Act, Water Users Associations (WUAs) were required to be formed for each completed project for optimum and efficient utilization of water for irrigation purposes. Government also clarified that there should be no distribution of water to the beneficiaries until WUAs have been formed.

The status of formation of WUAs for each component of Gosikhurd Project is given in **Table 2.1.9**.

Table 2.1.9: Status of formation of WUAs for each component

Sr. No.	Name of Component	(Area in ha)					
		Target for formation of WUAs		Actual WUAs formed		Working WUAs	
		No.	CCA Area	No.	CCA Area	No.	CCA Area
1	RBC	87	57265	30	11464	5	1278
2	LBC	72	32062	0	0	0	0
3	Asolamendha tank	94	43763	0	0	0	0
4	Tekepar LIS	22	6315	0	0	0	0
5	Ambhora LIS	22	8844	15	5856	7	2988
6	Nerala LIS	34	23991	0	0	0	0
7	Mokhabardi LIS	56	22516	0	0	0	0
8	Other LIS	0	5244	0	0	0	0
	Total	387	200000	45	17320	12	4266

Source : Information furnished by the CE, Nagpur

As against the target of 387 WUAs, 45 WUAs (11.63 per cent) had been formed as of June 2017; of which only 12 WUAs (27 per cent) were functional at Ambhora LIS and RBC Division No 1, Wahi. It was also noticed that Stage I of Ambhora LIS was commissioned in 2006-07 and Stage II was commissioned in 2009-10. However, the command area has not been handed over to the WUAs for recovery of water charges and ensuring operation and maintenance of the project.

The WRD stated that formation of WUAs was commensurate with IP creation. The facts remained that WUAs were not formed except for RBC and Ambhora LIS.

2.1.10.2 Evaporation losses

The State Water Policy, 2003 envisaged that measures to control evaporation from water bodies should be taken for attaining cost efficiency. As per the guidelines issued by GoM from time to time, pan-evaporimeters were to be installed at every project having CCA of more than 1,000 ha for exact assessment of evaporation losses.

Scrutiny of records revealed that the work of Dam, Spillway, Gates and Outlets of the Gosikhurd project has been completed and storage capacity of 650 Mm³ has been achieved as of December 2016. But division had not installed the pan-evaporimeters on the dam as of April 2017 and also not maintained the records pertaining to the evaporation losses. Thus, there was no mechanism to assess the exact cause and quantum of water loss for taking corrective action.

The WRD stated that pan-evaporimeters would be installed by March 2018.

2.1.10.3 Non-levy of royalty charges

The levy and collection of water charges is governed by the Maharashtra Irrigation Act, 1976 (MIA) and Maharashtra Water Resources Regulatory Authority (MWRRA) Act, 2005. Up to September 2010, the water charges were prescribed by the WRD and from October 2010 onwards, the water charges are being fixed by MWRRA.

Water supply of 100 Mm³ per year was assured to the National Thermal Power Corporation Limited (NTPC) for its 2,320 megawatt Thermal Power

Project situated at Mouda in Nagpur. Accordingly, an agreement was executed (August 2011) between NTPC and EE, Gosikhurd Dam Division, Wahi (Pauni). As per clause (ii) of the agreement for non-drawal of water, royalty @ five *per cent* was leviable. It was noticed that the division had recovered water charges on the water drawn by NTPC, however, the royalty charges amounting to ₹ 6.55 crore were not levied on account of non-drawal of water during the period from 2011-12 to 2014-15. This had resulted into revenue loss to the Government.

The WRD stated that the matter would be pursued at appropriate level.

2.1.11 Internal Controls and Monitoring

A sound project monitoring system needs to be in place for timely achievement of assigned goals. The deficiencies noticed in the internal control and monitoring are discussed below:

2.1.11.1 Inadequacies in supervision and monitoring

Considering the significance and complexity involved in the project works, the CE and SE were required to inspect the ongoing works as per norms²⁷ for ensuring both quality and progress of works. However, during the period 2012-17, they inspected the works by conducting 76 visits as against required 1,080 visits. At the divisional level, the EE and Dy. Engineer were required to pay 15 and 20 visits per month respectively for the technical inspection of the ongoing works. Further, the outcome of the inspections was required to be duly recorded in the Inspection notes. Visit registers had to be maintained at the divisional level.

There was short fall in conducting technical inspection in nine divisions ranging between 51 and 100 *per cent* in case of inspection by EEs and between 43 and 100 *per cent* in respect of inspections by Dy. Engineers. Thus, quality issues, distribution of water and its utilization, creation and utilization of IP could not be ascertained by the divisions.

The WRD stated that due to holding of frequent video conferences, there was proper supervision and monitoring system in place.

The contention was not tenable as EE and Dy. Engineer were required to visit the site of work and monitor execution of work which was not possible through video conferences.

MPW Manual prescribed that the EE who was responsible for the execution and management of all works within the division should carry out the inspection of Sub-divisional offices under his jurisdiction at least once in a year.

Scrutiny of records of nine test-checked divisions revealed that there was shortage of divisional staff comprising EEs, AEs, SEs and JEs which was ranging between 30 and 38 *per cent*. Further, there was shortfall in conducting

27 As per GoM Resolution of August 2002, eight visits per month by the CE and 10 visits per month by the SE to be carried out

the periodical inspection of Sub-divisional offices ranging between 20 and 100 *per cent*, as detailed in **Appendix 2.1.3**.

The WRD stated that in future inspection would be carried out as per norms and further stated that all officers are instructed to carry out regular inspections of the sub-ordinate offices.

Thus, due to shortage of manpower the monitoring and supervision of the project got impaired; even the desired result of IP creation could not be achieved.

2.1.11.2 Monitoring of Dam

The safety of the dam needs to be continuously monitored for ensuring public safety, protection of downstream areas from potential flood hazard and to ensure continued accrual of benefits from the assets created.

GoM had issued (February 1962 and January 1982) detailed instructions for inspection of all the completed irrigation projects by the Executive and Superintending Engineer (at the pre-monsoon and the post-monsoon periods) at Division and Circle level to ensure requisite standards of maintenance and safety.

It was observed that no records of pre-monsoon and post-monsoon inspections carried out by the EE/SE were being maintained.

Regular dam maintenance work was necessary to reduce siltation by adopting appropriate Catchment Area Treatment (CAT). The CAT plan includes preparation of management plan for treatment of erosion prone area of the catchment through biological and engineering measures (farm forestry, graded bunding, check dams, plantation and pasture land development) to control the sedimentation of reservoir and provide eco-system conservation of the catchment area.

The catchment area of the Gosikhurd project covered 11,788 sq km area. Further, the main dam was completed in September 2009. However, CAT activities for 4,261 sq kms (36 *per cent*) only were carried out by the division even after lapse of eight years from the completion of dam.

The WRD stated that the detailed compliance would be furnished.

2.1.11.3 Water Quality

The Nag River joins Kanhan River and then Wainganga River which also discharges the water into Gosikhurd Reservoir. Due to the release of 250 Million litre sewage water daily in the Nag River by Nagpur Municipal Corporation the reservoir was polluted as evident from the test reports of water quality carried out by the Maharashtra Pollution Control Board (MPCB). There were instances of mass death of marine life (May 2009). During the joint visit (6 March 2017) conducted by audit along with the officials of Gosikhurd dam division, it was observed that the water in the reservoir had turned black and there was dense growth of Water hyacinth as shown in the photographs below:



The MPCB had issued directions (July 2015 to December 2016) to NMC for taking necessary steps to prevent and control water pollution.

The WRD stated that the pollution level at Dam was very alarming and the matter was being pursued with appropriate authorities.

2.1.12 Conclusion

Due to faulty survey, there were overlaps in the irrigable command area. This necessitated changes in scope of the project. The works either could not start or were delayed after issue of work order due to non-acquisition of private/forest land. The time over-run coupled with deficient planning and preparation led to huge cost escalation from ₹ 372 crore to ₹ 18,494.57 crore. Further, due to irregularities in execution of the project, there was shortfall in release of funds by GoI. Though, the cost of project has been revised for the third time, sanction for revision was awaited from Central Water Commission for want of viable funding plan.

There was sub-standard execution of works in many components of the project. Certain works were not executed as per the approved drawings and design. Instances of delayed execution were also noticed owing to non-availability of land, failure to approve drawings and design and to obtain statutory permissions. Rectification works were being carried out slowly. Estimates were not prepared with due diligence resulting in execution of extra items or excess quantities. Manual provisions and contract conditions were violated resulting in granting of undue benefit to the contractors.

The rehabilitation of PAPs was delayed as the required civic amenities were either not created or were incomplete. In some cases, the amenities for PAPs were created much earlier than the actual rehabilitation resulting in deterioration for want of proper maintenance. Cases of double payment of compensation and delayed payment were noticed leading to excess financial burden on the public exchequer.

The irrigation potential created (50,317 hectares) was far less than the target (2,50,800 hectares) and the created potential was not utilised fully. 45 WUAs were created against the target of 387 WUAs. Pan-evaporimeters to monitor evaporation losses were not installed. The supervision by the department was minimal which resulted in substandard quality of work. Catchment Area Treatment plan to monitor siltation in the dam was not prepared. The dam water was polluted due to release of sewage in connecting rivers.

2.1.13 Recommendations

- **The Government needs to ensure timely acquisition of land.**
- **A viable funding plan needs to be chalked out for completion of balance works. The GoM may ensure sufficiency and timeliness in allocation of funds and their efficient and effective utilisation.**
- **The rectification works relating to LBC and RBC need to be completed early.**
- **Water Users Associations need to be formed during project construction period, so that completed projects can be handed over to them for regular operation and maintenance.**
- **Monitoring of the project needs to be strengthened by the department.**
- **Completion of canals and distribution networks in the command area of the projects need to be expedited to bridge the gap between irrigation potential created and utilised.**
- **Plan for desiltation of Catchment Area Treatment in the dam may be prepared.**