

CHAPTER - II

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Chapter II

Housing Department

2.1 Slum Rehabilitation Schemes in Mumbai

Highlights

The Maharashtra Slum Areas (Improvement, Clearance and Redevelopment) Act, 1971 (Slum Act) was amended (December 1995) for the establishment of a Slum Rehabilitation Authority (SRA) for the planning and design of the Slum Rehabilitation Scheme. The schemes to be formulated and cleared by SRA were to be governed by the Development Control Regulations (DCR). SRA is vested with the responsibility of conducting surveys and reviewing the existing slum areas; formulating schemes for rehabilitation of slum dwellers; getting the Slum Rehabilitation Scheme implemented through developers. We noticed that certification of eligible slum dwellers was delayed; there were no quality norms for development of rehabilitation buildings, the developer was granted excess transfer of development rights in Mumbai International Airport Slum Rehabilitation Project. The Dharavi Redevelopment Scheme failed to take off even after seven years and township projects were awarded to developers without any tendering. Infrastructural charges collected were lying with SRA without being used for the intended purpose.

Some of the significant findings are as follows :

The Slum Rehabilitation Authority did not conduct any survey regarding the number of slums and their population nor did they have any data bank containing lists of eligible slum dwellers.

(Paragraph 2.1.6.1)

As against 1.27 lakh eligible slum dwellers who were allotted tenements, only 9,547 slum dwellers had been issued photo identity cards as of September 2011.

(Paragraph 2.1.7.3)

Though the respective Project Implementing Authorities were responsible for identification of slum dwellers and obtaining their certified lists within 270 days from the dates of issue of letters of intent for implementation of the projects, this certified list was not given in 22 out of the 47 completed projects sanctioned between 1997 and 2003.

(Paragraph 2.1.8)

Development Control Regulations provide that tenements can be given to slum dwellers on private land if the entire cost of tenements is paid by land owner. The State Government Support Agreement with Mumbai International Airport Limited (MIAL), a private limited company also provided that cost of relocation be borne by MIAL. A total of ₹ 1,120 crore recoverable on account of construction of 28,000 tenements was not recovered. Though Government extended the provisions of Clause 3.11 to the Airport project, on payment of additional infrastructure charges, even this additional amount of ₹ 84 crore was also not recovered.

(Paragraph 2.1.9.1)

MIAL awarded the work of slum rehabilitation on airport land to a developer. The developer was granted excess Transferable Development Rights of ₹ 187.17 crore on account of inclusion of lifts, common spaces like staircase areas etc., in the rehabilitation component. Further, excess land Transferable Development Rights for measuring 42314.97 sq m in three projects amounting to ₹ 48.66 crore were provided to the developer.

(Paragraphs 2.1.9.3 and 2.1.9.7)

There was short recovery of ₹ 133.54 crore towards infrastructural charges from the developer of the Mumbai International Airport Slum Rehabilitation Scheme due to incorrect application of rates.

(Paragraph 2.1.9.8)

Though the Dharavi Redevelopment Project was sanctioned in 2004, it failed to take off even as of September 2011. The appointment of the consultant for the project was done without a transparent bidding process; the survey for identification of eligible slum dwellers was incomplete; the minimum premium to be received from the successful developers was not fixed and global bids called for the project were subsequently cancelled.

(Paragraph 2.1.10.1)

We noticed that ₹ 78.89 crore recovered from 1996 onwards towards infrastructure charges were lying with the Slum Rehabilitation Authority as of August 2011 without being used for the inteded purpose.

(Paragraph 2.1.11)

2.1.1 Introduction

Mumbai is the capital city of the State of Maharashtra and is also referred to as the 'financial capital' of India. However, this city also harbours a large number of slum-dwellers. The influx of people from rural areas of Maharashtra as well as from other parts of the country, coupled with acute shortage of affordable housing, has resulted in the phenomenal growth of slums in Mumbai. As on 1 January 1995, there were 8.05 lakh slum-dwellings consisting of 40 lakh slum-dwellers in the Greater Mumbai area. Faced with a problem of fast-growing slum-dwellings in Mumbai, a Slum Rehabilitation Authority (SRA) was established in December 1995, in pursuance of Section 3 A of the Maharashtra Slum Areas (Improvement, Clearance and Redevelopment) Act, 1971¹ to tackle the problem. SRA was to rehabilitate slum-dwellers whose names appeared in the electoral roll as on 1 January 1995. Slums which came up after 1 January 1995 were to be removed as per the Act. In respect of selected vital public projects², the cut-off date for slum-dwellers to be eligible for the scheme was extended to 1 January 2000.

¹ The Maharashtra Slum Areas (Improvement, Clearance and Redevelopment) Act, 1971 has been referred to as the Slum Act in this report.

² This was done in respect of the Dharavi Redevelopment Project, the Mithi River development project etc. The issue of extending the cut-off date to all the schemes in SRS was pending before Supreme Court (October 2011).

A self-contained tenement having a carpet area of 20.90 sq m *i.e.* 225 sq ft (raised to 269 sq ft from April 2008) was to be provided free of cost to each slum family. This was to be achieved through a mechanism of involving developers by providing them incentives for construction of rehabilitation tenements without putting any burden on the exchequer. Under this mechanism, SRA was to design Slum Rehabilitation Schemes (SRS) under the Slum Act and the Development Control Regulations³ (DCR) of Greater Mumbai for rehabilitation of the slum-dwellers. An incentive Floor Space Index (FSI)⁴ was provided to developers, in lieu of the rehabilitation tenements constructed on the identified land, through which they could construct buildings for sale in the open market to recover the cost of rehabilitation. As of July 2011, SRA had given approval to 1529 schemes under four categories, *viz.*: (i) 1403 in-situ schemes under DCR 33(10), (ii) 47 schemes for rehabilitation of project-affected persons (PAPs) under Clause 3.11 of DCR 33 (10), (iii) 79 schemes for permanent transit camps under DCR 33 (14) and (iv) Special Township Projects (STPs)⁵. Six STPs were under the Public Private Partnership (PPP) mode, being implemented under SRA and one was under the Dharavi Redevelopment Project (DRP), implemented by the Government. The salient features of the above four categories of schemes are given in **Appendix 2.1.1**. As of July 2011, 1.27 lakh slum rehabilitation tenements had been completed⁶ and 6.35 lakh slum-dwellers had been rehabilitated. The deficiencies noticed during performance audit of the implementation of the SRSs are discussed in detail in the succeeding paragraphs:

2.1.2 Organisational set-up

SRA, headed by the Chief Minister under the Slum Act, monitors the overall implementation of the schemes. The Ministers for Housing and Urban Development, the Chief Secretary, the Mumbai Municipal Commissioner and Principal Secretaries of the Housing, Urban Development and Law and Judiciary departments and the Chief Executive Officer (CEO) of SRA are the members of the Authority. The CEO is the executive head of SRA. Besides, there is one Officer on Special Duty (OSD) exclusively for the Dharavi Redevelopment Project (DRP). Details of the administrative set-up of SRA and DRP are given in **Appendix 2.1.2**.

2.1.3 Audit objectives

The audit objectives for the performance audit of the implementation of Slum Rehabilitation schemes were to assess whether:

- the planning process for identification of specific areas as slum areas as well as identification of beneficiaries was efficient;

³ The comprehensive guidelines under which constructions and developments were to be planned and executed in the city of Greater Mumbai.

⁴ The ratio of the total built-up area allowed to be constructed on the plot to the plot area

⁵ In July 2007, the Government in its Housing Policy announced the intention to implement the Special Township Projects (STPs) scheme for rehabilitation of slum-dwellers in a larger area. The STPs included the Dharavi Redevelopment Project (DRP) and projects taken up through the public-private partnership mode.

⁶ 70,994 under 33(10), 55,568 under 3(11) and 782 under 33(14)

- the slum rehabilitation schemes were being sanctioned as per the Development Control Regulations;
- the schemes were being implemented as envisaged in the Slum Act;
- the financial management was efficient and effective and
- effective monitoring, evaluation and control mechanisms for implementation of the schemes were in place.

2.1.4 Audit criteria

The audit criteria adopted for the performance audit were:

- Report of the Study Group appointed by the Government of Maharashtra for the rehabilitation of slum and hutment dwellers through reconstruction (Afzulpurkar Committee Report);
- The Maharashtra Slum Areas (Improvement, Clearance and Redevelopment) Act, 1971;
- Development Control Regulations for Greater Mumbai, 1991;
- Guidelines for implementation of Slum Rehabilitation schemes in Greater Mumbai and
- Resolutions of SRA and minutes of the meetings of the Committee for the Dharavi Redevelopment Project together with the Government orders and circulars issued by the Authority.

2.1.5 Scope and methodology of audit

The audit was conducted during February to July 2011, covering the period 2005-11. For this purpose, records in the offices of the Housing Department, the CEO, SRA and the OSD, DRP were test-checked. Seventy one schemes involving 79,749 tenements⁷ were selected randomly and test-checked. Of the sample selected, 58 schemes were under DCR 33 (10); eight schemes were under DCR 33 (10) Clause 3.11 and five schemes were under DCR 33 (14). In addition, all the seven STP projects were also selected for the purpose of this performance audit.

An entry conference was held on 2 May 2011, with the Principal Secretary, Housing Department, wherein the audit objectives and the audit criteria adopted for the performance audit were discussed. The exit conference was held on 15 October 2011 with the Principal Secretary, Housing Department, who accepted most of the audit observations. The replies of SRA and the department have been incorporated in the performance audit report.

Audit findings

Findings of the performance audit of Slum Rehabilitation schemes in Mumbai are discussed below:

⁷ Sample worked out to 40.57 *per cent* of the total number of tenements for which Commencement Certificates are issued (Sample Space).

2.1.6 Planning

Planning is essential for identification of eligible and ineligible slum-dwellers. The following deficiencies were noticed in the planning process.

2.1.6.1 Inadequate data regarding slums

SRA did not conduct any survey regarding the number of slums and their population.

Sub-section 3(a) below Section 3 A of the Slum Act prescribed that SRA was to survey and review the existing position regarding slum areas before sanctioning the schemes. However, it sanctioned schemes based on proposals received from developers. A slum rehabilitation proposal was to be submitted by a developer along with information in three Annexures, *viz*, land details (Annexure- I), a certified list of eligible and ineligible slum-dwellers (Annexure- II) and information on the financial details to assess the capability of the developer to execute the SRS (Annexure- III). On acceptance of the proposal, Annexures I, II and III were to be scrutinized by the Engineering, Eligibility Certification and Accounts and Finance wings of SRA respectively.

Annexure II attached to the proposals contained a list of eligible and ineligible slum-dwellers certified by the competent authorities⁸. This was decided by the competent authority as envisaged in Section 3 of the Slum Act. We noticed that SRA had not conducted any survey regarding the number of slums and their population (August 2011). Considering the fact that there were lots of complaints about the list of eligible slum-dwellers, SRA should have prepared a master list of beneficiaries at the initial stages itself. A survey of slum areas would have resulted in baseline data about slum areas (population and structure) to facilitate better planning of SRS and rational use of resources (land and FSI). Surveys would also have resulted in identification of large contiguous slum areas for development on a township model. This would have also provided an assessment of slums on high value land and other non-viable area and better linking of such schemes.

Implementation of schemes for rehabilitation of slums

As stated earlier, SRA examines and clears proposals for rehabilitation of slum-dwellers under four schemes as per the DCRs for Greater Mumbai, 1991 and the Slum Act *viz.*, (i) Rehabilitation of slum-dwellers at the same site *i.e.* in-situ schemes under Regulation 33 (10), (ii) Rehabilitation of PAPs on another unencumbered land under Clause 3.11 of Appendix IV below Regulation 33(10) by granting an additional benefit in the form of land transferable development rights (TDR)⁹ to the developers for rehabilitating PAPs on their own land, (iii) Provision of transit camp tenements under Regulation 33(14) of DCR and (iv) STPs under Section 3(K) of the Slum Act. All these schemes are based on the incentive floor space index¹⁰ concept *i.e.*

⁸ The Chief Officer, Mumbai Board, a constituent Board of Maharashtra Housing and Area Development Authority (MHADA), the Additional Collector (Encroachment) Mumbai and all Ward Officers of Municipal Corporation of Greater Mumbai (MCGM) are the general competent authorities defined under the Slum Act. In addition, the Government appoints project specific competent authorities like the Director, Sanjay Gandhi National Park.

⁹ TDR is the FSI which can be used on some other plots.

¹⁰ FSI- is the ratio of the total built-up area allowed to be constructed on the plot to the plot area

the developers are eligible for FSI in lieu of the rehabilitation tenements constructed and handed over to SRA free of cost, through which they can construct free sale buildings and utilize these sales for cost recovery. An analysis of the records relating to the implementation of the schemes revealed the following:

2.1.7 Rehabilitation under in-situ scheme as per DCR 33(10)

As stated in paragraph 2.1.6.1, under this scheme, 70 *per cent* or more of the eligible slum-dwellers, who agree to join the scheme, form a co-operative society (society) and after negotiating with the developers, request SRA to entrust the development to a developer of their choice. The developers are required to provide transit accommodation to each beneficiary till the completion of the rehabilitation component of the project. As stated above, the developers are allowed free sale components to compensate the cost of rehabilitation. Letters of Intent (LOI) are issued to the developers. This is the first stage of the slum rehabilitation scheme, wherein SRA approves in principle, the proposal of the developers after verification of documents submitted by them in Annexures- I, II and III. Commencement certificates are issued thereafter to enable the developers to commence the construction. Occupation certificates are granted after completion of the building, *i.e.* after they are found fit for residence.

There were 1,403 approved projects under in-situ schemes involving 3.51 lakh tenements as of July, 2011. Of these, 58 projects involving 9320 tenements were test-checked, which revealed the following :

2.1.7.1 Non-evaluation of developers

SRA had ordered (April 1997) that before the projects were approved, the criteria for eligibility of developers should be decided on the basis of the works executed by them around Mumbai and the technical persons and the machinery available with them. As per this order, developers must have executed in the last five years, buildings on areas which were at least 25 *per cent* of the built-up area of the project to be executed by them. SRA reviewed (August 1997) the position and concluded that many of the developers could not qualify as they did not possess the financial capability to execute the schemes though they possessed the solvency of the amount prescribed which at maximum amounted to ₹ 30 lakh only. Accordingly, SRA revised (November 1997) the criteria and prescribed information to be filled in an Annexure III to assess the financial capability of the developers which were to include information on audited statements of accounts for the last three years, details of funds required for rehabilitation buildings, proof of availability of funds to invest *etc.* We noticed that the provisions for evaluation of technical capability of developers enunciated in the April 1997 circular issued by SRA were not followed at all. The draft Housing Policy of the State Government (November 2006) proposed credit ratings of builders and developers of SRS through agencies such as CRISIL and ICRA¹¹. In the interim *i.e.* between the period of draft policy and its adoption in July 2007, SRA introduced a system of obtaining bank guarantees from developers for an amount equal to 20 *per*

¹¹ CRISIL and ICRA are credit rating agencies.

cent of the project cost. We noticed that even after introduction of the housing policy in July 2007, SRA did not insist upon credit ratings for developers and continued the earlier procedure of obtaining bank guarantees from them.

In reply to audit query, the Secretary, SRA stated (August 2011) that since the procedure for credit rating of developers had not been finalized by the Government, it was not implemented.

The reply is not acceptable as SRS was a developer-driven scheme and it was necessary to follow the guidelines mentioned in the housing policy. Moreover, SRA also did not send any proposal to the Government to evaluate developers on the basis of credit rating in the light of the housing policy.

2.1.7.2 Delay in occupation and time overrun of SRSs

We noticed that commencement certificates (CCs)¹² in respect of 277 projects were granted prior to 2005, but occupation certificates (OCs)¹³ in respect of these projects were still pending. SRA attributed (August 2011) the delay in completion of the projects to litigations, pendency of no-objection certificates, change of developers, re-verification of eligible beneficiaries *etc.* It was noticed that though a period of three years was stipulated in the agreements between the societies and developers, this time schedule was not adhered to in any of the projects. SRA had not laid down norms for minimising time overruns and consequential penalties for delays on the part of the developers. Though SRA was not directly responsible for the delays in completion, the fact remained that the slum-dwellers were affected due to the delays which showed the lack of control of SRA over the developers.

In the exit conference (October 2011), while accepting the audit observations, the Principal Secretary, Housing, directed SRA to have a realistic time-frame for completion of projects which should be mentioned in the Letter of Intent (LOI)¹⁴ conditions to avoid time overrun of SRSs.

2.1.7.3 Issue of photo identity cards

As per Section 3 (E) of the Slum Act, tenements allotted to slum-dwellers are not allowed to be transferred for the first 10 years from the date of allotment. Further, as per Clause 1.9 of Regulation 33(10) of DCR, SRA is required to issue photo ID cards to the eligible slum-dwellers after allotment of rehabilitated tenements. SRA outsourced this work to a private agency initially in October 2003 *i.e.* seven years after the inception of SRA. The agency could complete issuance of only 7000 out of 20000 cards to be issued within the stipulated period of six months and was not ready to continue with the work. The reason for discontinuance as noticed from the notings of the Assistant Town Planner of SRA was mainly non-cooperation from beneficiaries and non-finalisation of a list of the allottees (certified slum-dwellers) by the

The period of three years stipulated in the agreement between the Societies and developers was not adhered to in any of the projects.

The system to ensure restrictions for transfer of tenements as enunciated under Section 3 E of Slum Act was not effective due to poor progress in issuance of photo ID cards to the rehabilitated slum-dwellers.

¹² Commencement Certificate (CC) is issued by the planning authority for starting a construction work.

¹³ Occupation Certificate (OC) is issued by the planning authority consequent to completion of the construction work and the structure being fit for occupation.

¹⁴ Letter of Intent (LOI) is the first stage of a slum rehabilitation scheme wherein SRA approves in principle the proposal of the developer after verification of documents submitted by him in Annexures- I, II and III.

Engineering wing of SRA. SRA had not taken any action to ensure completion of this work between 2005 and 2009. This work was allotted to another agency¹⁵, in September 2009 without indicating the period of completion of the work. The criteria for selecting the agency were also not mentioned. We noticed that the new agency had issued only 3876 ID cards (between September 2009 and September 2011) to the rehabilitated slum-dwellers. As against 1.27 lakh of slum-dwellers to whom tenements were allotted, only 9,547 slum-dwellers had been issued photo ID cards till September 2011. We noticed that this work covered only in-situ schemes and no decision to issue cards to rehabilitated PAPs was taken (October 2011). This would result in non-identification of beneficiaries *i.e.* rehabilitated slum-dwellers who actually occupied the rehabilitation tenements. Thus, the system to ensure restrictions for transfer of tenements as enunciated under Section 3 (E) of the Slum Act was not effective.

2.1.7.4 Unauthorized Occupancy

Clause 3.12 of Appendix IV of DCR 33(10) required a minimum prescribed density of 500 tenements per hectare in the rehabilitation component. If the certified number of tenements for slum-dwellers in a project being executed by a developer fell short of the prescribed limit of 500 tenements per hectare, the shortfall was to be added to the project and was to be utilised for accommodating pavement dwellers. The tenements so constructed were to be handed over to Municipal Corporation of Greater Mumbai (MCGM) which was responsible for accommodating pavement-dwellers. We noticed that in respect of 20 projects of SRS (**Appendix 2.1.3**), wherein additional tenements had been constructed, these tenements were not handed over to MCGM and 318 tenements were occupied by ineligible persons who were not covered under these schemes. No action to evict these persons was taken (August 2011).

We further noticed that in 10 SRS projects (432 tenements), the original certified eligible slum-dweller was not present and the Deputy Collector, SRA initiated eviction proceedings against the unauthorised occupants during the period April 2009 to June 2011 (**Appendix 2.1.4**). The report on the final evictions in these cases was awaited (October 2011).

An instance of unauthorized occupancy was noticed in a Clause 3.11 scheme where slum-dwellers were relocated from the Sanjay Gandhi National Park (SGNP), Borivili to Chandivili in Powai. An inspection carried out by the Director, SGNP, Borivali (competent authority) of the 3,198 rehabilitation tenements of the first phase of the project found that 531 tenements were locked, 329 tenements sublet, 48 tenements being used for commercial purposes and 34 tenements sold. In reply to audit query, SRA stated (August 2011) that the sold tenements were taken over by the SGNP and six criminal cases were initiated.

2.1.8 Rehabilitation of project-affected persons

The rehabilitation of the PAP scheme was meant for slum-dwellers whose rehabilitation was not possible due to physical constraints *viz.*, slums on

¹⁵ Shradha Saburi, Bandra(E)

pavements, pipelines, on lands required for infrastructural projects such as roads, railways and airports, being implemented by project implementing authorities (PIA) such as the MCGM, Mumbai Metropolitan Region Development Authority (MMRDA), Public Works Department (PWD) and the SGNP.

As per Clause 3.11 of Appendix IV under Regulation 33(10) of DCR, proposals are to be approved for unencumbered plots (plots free of any construction) and tenements constructed by developers on these plots are required to be transferred to SRA or the PIA which is responsible for identification of slum-dwellers and obtaining certified lists of eligible beneficiaries from the competent authorities. There are two components for compensating developers for investments made in the rehabilitation project viz. land Transferable Development Rights (TDR) and construction TDR. The component of land TDR is a form of compensation for land brought by the developer for rehabilitating the eligible slum-dwellers. Construction TDR is allowed at 1.33 times of the built-up area constructed for rehabilitation of slum-dwellers.

Under this scheme, 47 projects (**Appendix 2.1.5**) were sanctioned between 1997 and 2011. Out of 85,626 tenements taken up for construction, only 55,568 tenements were completed (July 2011). A test-check revealed that beneficiaries under the scheme were not identified is discussed below. In addition observation regarding sanction of Mumbai International Airport Slum Rehabilitation project under Clause 3.11 is also discussed.

- **Non-identification of beneficiaries**

Certified lists of eligible beneficiaries in Annexure-II were not submitted by the Project Implementing Agencies

As per condition 2 of Clause 3.11 of Appendix IV of DCR 33(10), slums obstructing vital projects on land belonging to the Government or a public authority are cleared by offering tenements to slum-dwellers on alternate land provided by developers. The project implementing authority (PIA) as explained in paragraph 2.1.8 above, had to identify the slum-dwellers within 270 days from the date of issue of the letter of intent (LOI) by SRA. The respective PIAs were responsible for identification of slum-dwellers and obtaining certified lists of eligible beneficiaries from competent authorities¹⁶.

We found that 22 projects (**Appendix 2.1.5**), sanctioned between 1997 and 2003, involving 38,832 PAP tenements, were completed and handed over by developers to PIAs and in turn, the developers were sanctioned land and construction TDR. However, the certified lists of eligible beneficiaries in Annexure-II were not submitted by the PIAs. SRA also did not ensure compliance of this condition to ensure that the PIAs were provided the list of beneficiaries before release of TDRs to developers.

At the exit conference (October 2011), the audit observation was accepted by the Principal Secretary, Housing who told SRA that the DCR provision was required to be adhered to and that the release of TDR to the developers could have been held back as a means to ensure that certified lists of Annexure-II were submitted by the PIAs.

¹⁶ As mentioned earlier vide footnote 8 under paragraph 2.1.6.1

2.1.9 Airport slum rehabilitation under Mumbai International Airport Slum Rehabilitation Project

The Airports Authority of India (AAI) granted (April 2006) exclusive rights on 276.46 acres of airport land, encroached by slums and hindering the development of the airport, to Mumbai International Airport Limited (MIAL)¹⁷ a private limited company incorporated under the Companies Act, 1956. In March 2007, the Urban Development Department, by an amendment to the DCR, allowed inclusion of rehabilitation of airport slums through schemes under Clause 3.11 of DCR 33 (10) where encumbered land is vacated for execution of vital projects and slum-dwellers are rehabilitated on alternate land. This was to be implemented by SRA.

MIAL awarded (October 2007) the work of slum rehabilitation on airport land to the Housing Development and Infrastructure Limited (HDIL), a developer, for completion in two phases. The developer was required to complete the rehabilitation on alternate land and evict the slum-dwellers from airport land measuring 157.93 acres in the first phase and 118.53 acres in the second phase. Accordingly, seven projects (**Appendix 2.1.6**) involving 28000 tenements were proposed in the first phase under Clause 3.11 of DCR 33(10). We noticed that undue benefits were extended to the developers in the following cases:

2.1.9.1 Non-recovery of cost of rehabilitation

Clause 3.11 of the DCR applies to public land only and does not cover slum rehabilitation on private land, which can be covered only under Clause 3.11 (3) I of Appendix IV, read with Regulation 33 (10) of the DCR. These state that tenements can be given to slum-dwellers on private land if the entire cost of the tenements is paid by the landowner. The State Government Support Agreement¹⁸ of April 2006 between the Government and MIAL stipulated that the cost of relocation was to be borne by MIAL. Further, an agreement of July 2006 between MIAL and MMRDA to free slum-encumbered land in Mumbai Airport also provided that the entire project cost and incidental expenditure should be borne by MIAL. The Housing Department's resolution of May 2007 also mentioned that it was MIAL's responsibility to rehabilitate the slum-dwellers on airport land.

It was, however, noticed in audit that no recovery was proposed to be made by SRA from MIAL while approving the Slum Rehabilitation schemes for the Mumbai International Airport Slum Rehabilitation Project (Airport Project). On a conservative estimate of ₹ four lakh (as determined by the Housing Department in November 2010) per rehabilitation tenement, a total of ₹ 1120 crore was recoverable from MIAL, which was not recovered from them (October 2011).

¹⁷ MIAL is a joint venture company consisting of GVK consortium which held 74 per cent and Airports Authority of India which held 26 per cent equity. MIAL is lessee of airport land for 30 years

¹⁸ Due to the privatization of Mumbai International Airport, the new joint venture company, MIAL, who was to maintain the airport entered into support agreements with GOI and the State Government. The State support agreement was for providing security, infrastructure like land, water, electricity roads etc. Co-operation in clearance of slum encroachment of the airport land was one of the components of the State support agreement.

Instead of recovering this amount, Regulation 3.11 of the DCR itself was amended by the State Government in March 2007. On 29 March 2007, the Government issued a directive to MCGM to modify Clause 3.11 of Appendix IV. On the request of MIAL, the Government extended (30 March 2007) the provisions of Clause 3.11 to MIAL for the airport project on payment of additional infrastructural charges. The additional infrastructural charges were to be collected from the developer for the rehabilitation component only and at double the rate of normal infrastructural charges, subject to a maximum of ₹ 30,000 per tenement. We noticed that the same was not being recovered in addition to the normal charges. In Phase-I of the Airport project, approximately 28,000 tenements were to be constructed and hence, a minimum additional infrastructural charge amounting to ₹ 84 crore was recoverable from the MIAL in addition to the normal infrastructural charges. This was not recovered.

In reply, the Secretary, SRA stated (October 2011) that the provisions of Clause 3.11 had been extended to SRA's schemes for the airport project with a condition to pay double the infrastructural charges over and above the normal infrastructural charges, subject to a maximum limit of ₹ 30,000 per tenement and that the same had been recovered from the developer.

The reply is not acceptable as normal infrastructural charges as per provisions of the DCR were recovered and not the additional infrastructural charges as mentioned in the order of 30 March 2007. During the exit conference (October 2011) CEO/SRA agreed to examine the matter again and refer the matter to the Government for guidance.

2.1.9.2 Squeezing of space

As per the provisions of the DCR (mentioned in table below), open spaces and recreation grounds have to be provided while developing vacant plots. Overcrowding, high density, lack of open spaces and resulting unhygienic conditions are the prominent feature of all slums. Hence, provision for adequate open spaces should have been made. However, it was seen that in all the SRSs approved for the airport project, considerable relaxations in providing for open spaces were approved by SRA as shown in **Table 1**.

Table 1 : Percentage open spaces actually provided

Scheme/ Date of approval of relaxation	RG as per DCR (23) for plots > 10,000 sq m (per cent)	RG as per DCR (23) for plots < 10,000 sq m (per cent)	Amenity open space in plot> two hectare DCR 56(3) (c) & DCR 56 (4)(c) ¹⁹	Additional open space with length of building > 40m (per cent)
Requirement as per DCR norms	25 per cent of plot area	20 per cent of plot area	20-25 per cent	10 per cent
Approved by SRA				
SRS 1/ 16.09.2010	8.94	NA	10	NA
SRS 2/ 16.11.2010	8.68	NA	NA	0
SRS 3/ 17.08.2010	8.53	NA	20	0
SRS 4/ 14.10.2009	12.83	NA	10	0
SRS 5/ 05.10.2009	8.00	NA	20	0
SRS 6/ 14.06.2010	NA	15.00	15	0
SRS 7/ 28.06.2010	NA	9.74	10	0

RG – Recreation Ground; NA – Not applicable

- i. Under DCR provisions, for plots of over 10,000 sq m, open space of 25 per cent of the plot area was to be provided for recreation grounds. We noticed that in five such projects, open spaces whose areas ranged between eight and 12.83 per cent only were provided. It was found that SRA had granted (between October 2009 and November 2010) the relaxation without any DCR amendment, which only the Government was empowered to do so, on the grounds of planning constraints.
- ii. For plots with areas having less than 10,000 sq m, open space was to be 20 per cent of the plot area. We noticed in audit that open spaces of 9.74 and 15 per cent were actually provided in two projects. This was also condoned by SRA (June 2010) on the grounds of planning constraints and for attaining minimum tenement density²⁰ of 500 tenements per hectare.
- iii. Ten per cent additional open space of plot dimension in excess of 40 m was to be provided if the length of a building exceeded 40 m. We noticed that in six projects, no additional open space was provided though the length of these buildings was more than 40 m.
- iv. In cases where land use was changed from industrial to residential, 20 to 25 per cent of plot area was to be provided as amenity open space²¹ in addition to the open spaces specified above. However, in the case of three projects where such land use changes were allowed, only 10 per cent amenity open space was provided. Government modified

¹⁹ This requirement is applicable to those plots which has been changed from industrial user to residential user for the purpose of this rehabilitation.

²⁰ As per Clause 3.12 Appendix IV of DCR 33(10), the minimum density of rehabilitation component on plot shall be 500 tenements per net hectare.

²¹ Amenity open space is in the form of electric sub-station, bus station, sub-post office, police out post garden, school, dispensary. These are necessary as an industrial land changed to Residential is not planned.

(September 2008) the provisions of the DCR allowing the above reduced amenity space.

The above relaxations would have resulted in crowding of the tenements and defeated the very purpose of slum rehabilitation as the quality of living conditions would be adversely affected.

In the exit conference (October 2011), the Principal Secretary, Housing fully accepted the audit observation and stated that this was a serious matter and needed to be investigated.

2.1.9.3 Grant of excess TDR to HDIL

As per the DCR, the built-up area (BUA) for the rehabilitation component²² was not to include common spaces under staircases and in lifts and lift lobbies and hence, the same were not to be counted for calculating the free sale component²³. We noticed that the developer, HDIL was given the free sale component in the ratio of 1:1.33 against this common space. As a result, in six of the seven projects, benefit of excess TDR worked out to 1,62,755.49 sq m. Based on the average TDR rate of ₹ 11,500 per sq m²⁴ in April 2009, this benefit to the developer amounted to ₹ 187.17 crore (**Appendix 2.1.7**).

2.1.9.4 Irregular extension of Clause 3(13) of the DCR to grant excess built-up area

Clause 3(13) of the DCR states that in slums where the existing tenement density is already more than 500 per hectare, the calculation of FSI for all purposes shall be on the gross area, that is without deducting any percentage for recreational/amenity open space²⁵. This means that this clause was applicable to the existing slums.

Regulation 35(1) of the DCR deals with computation of FSI on a plot. As per this provision, the area for recreational open spaces (*i.e. 15 per cent* of plot areas) is to be deducted for the purpose of FSI computation. We noticed that deductions for open spaces were not made on the ground of Clause 3(13) of the DCR. This relaxation was granted by Urban Development Department (UDD) in January 2008, based on a request made by a developer to the Chief Minister in April 2007.

Application of a clause intended for redevelopment of in-situ slums to rehabilitation on open unencumbered land was therefore not correct as rehabilitation of slum-dwellers is done by the developer in a plot which is not encroached. Had the Government applied the original DCR provision there would have been less congestion on the plots where rehabilitation were to be carried out.

²² BUA of all residential tenements as well as non-residential built-up premises constructed for the slum-dwellers

²³ Free sale component is the portion of FSI granted to developer in lieu of the cost incurred by him for providing rehabilitation tenements free. This can be constructed by the developer for sale in the market or sold to other developers as TDR with out construction.

²⁴ Average TDR rates of April 2009 obtained from MCGM

²⁵ Amenity open spaces are the area where the DCR provides certain reservations like play ground, market *etc.* These reservations are in addition to recreation ground reservations and are to be kept vacant during development.

In reply, the Secretary SRA stated (October 2011) that as per provision 62 (3) of the DCR, the Government is the final authority to settle questions on interpretations of DCR and this extension of clause on an unencumbered plot was done as per Government's interpretation of the DCR in January 2008.

This not only led to congestion on the unencumbered plots but also resulted in extending undue benefit to the developers in the form of excess BUA of 54619 sq m to the developer (**Appendix 2.1.7**).

2.1.9.5 Disproportionate distribution of FSI

In three schemes of the airport project, in-situ FSI of four was given *i.e* BUA at four times the plot area. This implied that the FSI of the rehabilitation area and FSI of free sale area should together have been limited to four in-situ. We noticed that the FSI consumption proposed for free sale plots was higher than that of the rehabilitation area as indicated in **Table 2**.

Table 2: FSI consumption proposed for free sale plots

SR Scheme	Plot area for FSI (in sq m)	Plot area for free sale (in sq m)	Plot for rehab (in sq m)	FSI consumption on Rehab plot		FSI consumption on sale plot		In-situ FSI limit
				Rehab FSI construction (in sq m)	FSI of rehab area	Free sale BUA (in sq m)	Free sale FSI Consumed (in sq m)	
(1)	(2)	(3)	(4)	(5A)	(5B)	(6A)	(6B)	(7)
SRS I	213967.30	44561.15	169406.15	523487.23	3.09	265558.00	5.96	4
SRS IV	23897.80	5972.20	17925.60	52920.31	2.95	42670.89	7.14	4
SRS V	34750.39	9913.54	24836.85	58648.88	2.36	80352.68	8.11	4

Source: LOI issued to developer

From the above it is seen that while the FSI of the rehabilitation area (calculated by us) ranged between 2.36 and 3.09 (column 5B), the FSI of free sale allowed (calculated by us) ranged between 5.96 and 8.11 on the same plot. Therefore, there was a disproportionate distribution of FSI among rehabilitation and free sale components. Thus, the FSI to be used for rehabilitation areas was reduced to that extent.

2.1.9.6 Excess in-situ free sale component

As already discussed in paragraph 2.1.9.2 above, in cases where land use was changed from industrial to residential, 20 to 25 *per cent* of the plots were to be provided as 'amenity open space' in addition to other open spaces as per DCR. The Government modified the provisions (September 2008) that the requirement of land for public utilities may be reduced. Minimum amenity space up to 10 *per cent* of the total area was allowed subject to a restriction on free sale land *i.e* 25 *per cent* of the total area could be utilised for free sale in-situ. We noticed that in one²⁶ of the seven schemes of the project, in-situ free

²⁶ Airport slum rehabilitation scheme at CTS No. 637 (pt), 637/44 to 46, 637/49 (pt), 637/53 (pt), 637/54 to 56, 637/58 (pt), 637/59 to 77, 637/78 (pt), 637/87 to 121 of village Kurla, Taluka in L Ward, Mumbai

sale BUA of 265558 sq m²⁷ was allowed (September 2010), which translated into 33.65 *per cent* free sale land against the permissible limit. Thus, the developer was granted undue benefit by allowing free sale component measuring 18514.15²⁸ sq m (**Appendix 2.1.8**) in excess of the prescribed limit of 25 *per cent*.

2.1.9.7 Non-consideration of land equivalent of free sale component

As per Clause 3.11 of DCR, TDR for an area of land spared for slum rehabilitation purpose is to be sanctioned to the owner of the said unencumbered plot. Therefore, the land TDR should be sanctioned after deducting the land equivalent on which free sale component of the owner (developer) is constructed. We noticed that this was not done as the land spared for free sale construction did not take into account, the FSI allowed for the plot (Rehabilitation and sale combined) and therefore, resulted in deduction of less area for sale. Consequently, land spared for rehabilitation worked out more. This resulted in issuance of excess land TDR measuring 42314.97 sq m in three projects amounting to ₹ 48.66 crore (**Appendix 2.1.9**).

During the exit conference (October 2011) the Principal Secretary agreed with the audit observation and CEO/SRA agreed to propose to adopt this method to Government for consideration.

2.1.9.8 Short recovery of infrastructural charges

Under SRS, as explained above, incentive Floor Space Index (FSI) is given to make schemes financially viable for the developers. For this excess FSI, the developer has to pay infrastructural charges as per Clause 9.2 of Appendix IV of DCR 33(10) which states that an amount of ₹ 840 per sq m (or ₹ 560 per sq m for the localities mentioned in sub-regulation 3.4) has to be paid by the owners/ developers/ Societies/ NGOs for the built-up area over and above the normally permissible FSI, for the rehabilitation and free sale component. We noticed that this was neither computed correctly nor collected efficiently as detailed below:

- i. 'Normally permissible FSI' as stated in Clause 9.2 was not calculated by SRA as defined in DCR 35(1). For a plot having an area of more than 2500 sq m, 15 *per cent* of the area for recreational open space was to be deducted for FSI computation. The infrastructural charge was to be collected on the difference between this and the FSI approved for the SR scheme. However, it was noticed that SRA was not making deductions of 15 *per cent* in BUA while calculating the normally permissible FSI. Infrastructural charges were calculated on lesser area than applicable in the seven schemes of MIAL. Thus, infrastructural charges amounting to ₹ 3.06 crore recoverable on 15 *per cent* of gross plot area admeasuring 54619 sq m were not considered (**Appendix 2.1.6**).

²⁷ Land equivalent of 72005.97 sq m after considering FSI of 3.688 considered for the plot.

²⁸ 18514.15 sq m calculated as $213967.30 / 4 = 53491.80$ (25 *per cent*)
Free sale equivalent – 53491.80 i.e. $72005.97 - 53491.80 = 18514.17$

- ii. As per Clause 9.2, infrastructural charges were to be calculated on total rehabilitation (including BUA for tenements as well as common facilities) and the free sale component approved for the scheme. However, SRA calculated the charges on applicable rehabilitation FSI (783816.40 sq m) in seven schemes of MIAL by excluding rehabilitation components like balwadi, society office, common passage, welfare centre *etc.* When these were considered, the rehabilitation component worked out to 1262694.77 sq m. This resulted in infrastructural charges being calculated on lesser area than applicable. Thus, infrastructural charges amounting to ₹ 26.82 crore recoverable on the difference in area admeasuring 478878.37 sq m (1262694.77 – 783816.40) were not considered by SRA (**Appendix 2.1.6**).

The ratio of rehabilitation and free sale component are dealt with in Clause 3.3 of Appendix IV of the DCR 33(10). In the island city²⁹ if the rehabilitation component is 10 sq m of BUA, then an additional 7.5 sq m will be permitted. As per Clause 3.4, in the suburbs and extended suburbs, if rehabilitation component is 10 sq m, then an additional 10 sq m of BUA is to be permitted. As per clause 3.5, in difficult areas³⁰ if the rehabilitation component is 10 sq m, then an additional 13.33 sq m BUA can be permitted. All the schemes taken up under Clause 3.11 of DCR 33(10) were considered as deemed difficult areas (as all the schemes received 1:1.33 FSI on the rehabilitation component). Hence, the slum rehabilitation did not fall into the localities mentioned in Clause 3.4 but in difficult localities as mentioned in clause 3.5. This fact was ignored by SRA and infrastructural charges were continued to be calculated as per the reduced rate of ₹ 560 per sq m applicable for localities mentioned in clause 3.4 instead of ₹ 840 per sq m. This resulted in loss of revenue amounting to ₹ 103.66 crore to SRA in these seven schemes.

2.1.10 Special Township Projects

In order to achieve economic upliftment and empowerment of slum-dwellers by upgrading health standards, income levels and knowledge together with addressing employment, environmental and socio-economic issues in an integrated holistic manner, the housing policy of the State envisaged (July 2007) rehabilitation of slum areas which is spread over 40 hectares or more on a sustainable basis through a comprehensive approach. This policy change was based on the experience of the Dharavi Redevelopment Project which was a Government-initiated (February 2004) project. The policy further stated that this was to be achieved through public-private partnership projects.

2.1.10.1 Government initiated project - Dharavi Redevelopment Project

The Afzulpurkar Committee had identified Dharavi, the biggest slum in Asia where the slum structures are overwhelmingly dense and where the culture of poverty is predominant, resulting in lack of demand for free sale tenements. A Task Force headed by the Chief Secretary and consisting of 11 Government

²⁹ Greater Mumbai comprises of island city of Mumbai and Mumbai Suburban District.

³⁰ Initially Dharavi was treated as difficult area and SRA was to consider declaring additional areas as difficult areas based on the criteria prescribed in Clause 3.19 of Annexure IV of DCR 33(10)

and non- government officials was constituted (October 2003) by the Government to prepare an action plan for transforming Mumbai into a world class city³¹ by 2013. In its report of February 2004, the Task Force emphasized that its recommendations should be processed on fast track. One such initiative recommended was the development of Dharavi.

A proposal of a Project Management Consultant (PMC) Shri Mukesh Mehta, for redevelopment of Dharavi was accepted (February 2004) by the Government on the recommendation of SRA. The Government appointed (2004) the PMC with a consultancy fee of one *per cent* of the estimated project cost of ₹ 5600 crore. A separate office of an OSD within SRA for the Dharavi Redevelopment Project (DRP) was set up. The expenditure on DRP was to be met from the resources of SRA. A scrutiny of the project revealed that the survey to identify the details of the structures in the project area was incomplete, acquisition of private land required for the project was not done, global tenders for the project was cancelled and the project failed to take off even as of November 2011 as discussed below:

Incomplete survey

In order to identify the details of the structures in the project area, the work of Plane Table Survey (physical enumeration of land details with structures and slum-dwellers) for the project was started (April 2004) but could not be completed due to resistance from some pockets of the project area. A fresh geographical information system based bio-metric baseline socio-economic survey ordered (November 2007) by the OSD/DRP was also not completed due to continued opposition from some pockets of the area.

Non-acquisition of private land

The DRP covers an area of 240.35 hectares, of which 57.68 hectares³² is owned by private parties and needs to be acquired for the project. As the land acquisition process is complicated and time-consuming, the Government decided (September 2008) that land acquisition should be done by the developers. If the developer fails to acquire, the land would have to be acquired under the Maharashtra Housing and Area Development Act 1976 or the Maharashtra Regional & Town Planning Act 1976 as the case may be. It was decided to exclude 66.60 hectares of land (57.68 hectares private land plus 8.92 hectares of railway land) from the DRP with a condition to merge the same in DRP at a later date. Since the tendering process was cancelled (discussed in the next paragraph), the process of land acquisition was stalled (August 2011).

Cancellation of global tenders

DRP invited expression of interest from developers in June 2007 and shortlisted 19 developers on the basis of specified selection criteria like

³¹ This task force was set up by the Chief Minister in October 2003 to prepare an Action Plan for transforming Mumbai into a World Class City by scrutinising the report 'Vision Mumbai' submitted by the Bombay First, an NGO.

³² Private land 41.18 Ha, additional properties to be treated as private 6.09 Ha and ownership not specified 10.41 Ha

completion of at least one housing project in minimum 40 hectares of land area, bid security of ₹ 41.50 crore, performance security deposit, *etc.* At the time of inviting tenders, the basic parameters like eligibility, acquiring of land under private ownership, modification of DCRs for the project *etc.* were not finalized. We noticed that these issues were still pending (August 2011). Owing to non-finalization of the basic parameters of the project, 13 bidders withdrew their bids. Six bidders remained for five sectors in Dharavi. The OSD consulted an expert in September 2008 regarding the tendering process initiated by DRP and the expert found it defective. As the DRP was a PPP project, the invitation should have been a Request for Proposal (RFP)³³ instead of bids invited by the DRP. The various risk perception of developers in the DRP such as political risks, the risk of acceptance by the slum-dwellers, delays in approvals by various bodies like MCGM, trends in real estate market were not analyzed by DRP. The bid document did not provide for any risk sharing or risk mitigation. Based on this, the expert suggested (September 2011) rewriting the RFP. However, this advice was not heeded by DRP and the bids were kept alive and cancelled only in May 2011. Thereafter, Government issued (May 2011) an order to award the redevelopment of one sector *i.e.* Sector-V through MHADA. MHADA had not prepared any plan proposal for this sector (October 2011).

Non-commencement of work after seven years of planning

Though DRP is a prestigious project of the Government, inception of a project of such a huge magnitude without sufficient groundwork, the delay on the part of the Government in deciding the various aspects of the project; lack of analysis of the complexities involved in the selection of PMC; eligibility of slum-dwellers, feasibility study, land acquisition process, infrastructure development study, tender process *etc.*, rendered the expenditure of ₹ 50.95 crore incurred on DRP unfruitful. It was still at the planning stage even after seven years of its inception.

2.1.10.2 Public-private partnership projects

The State Housing Policy, 2007 envisaged development of larger slums by addressing employment, environmental and socio-economic issues in an integrated and holistic manner through special township projects (STPs) involving slum areas above 40 hectares. In addition, the Government in UDD amended (April 2008) the DCR to the effect that the developer would pay to SRA a land premium equivalent to 25 *per cent* of the ready reckoner rate of the land prevailing as on date of issue of Letter of Intent. It was in May 2009 that the Government (Housing Department) clarified that the introduction of land premium was in lieu of tendering. The Government invoked the provisions of Section 3 (K) of the Slum Act³⁴ for approval of six STPs on PPP mode during 2007-2010 and on the basis of the recommendations from SRA, directed SRA to approve all the six STPs. We noticed the following in respect of six STPs.

³³ Request for proposal (RFP) is a method used in PPP mode to obtain proposals from developers/contractors *etc.* to shortlist prospective tenders before tendering.

³⁴ The Government is vested with powers under Section 3 (K) of the Slum Act to direct SRA to carry out purposes of the Act and SRA is bound to act upon such direction.

- Directions were given (between August 2008 and November 2010) by the Government in favour of a particular developer even before preparation of detailed plans and guidelines and without specifying the detailed procedure for implementation of STPs. In all the six STPs, the proposals were initiated by developers to undertake STPs. These directions were issued on first come first serve basis, disregarding the recommendations of a Committee of Secretaries³⁵ in DRP and the Housing Policy of 2007 to select the developer by open tender process.
- All the six STPs were directed to be allotted to developers without assessing their financial and technical capability to execute projects, which was against the housing policy.
- SRA issued (November and December 2009) provisional LOI for STP to two developers³⁶ even though there was no provision for issuance of provisional LOI under any Act or Rule. Issuance of provisional LOI when the papers relating to Annexures I, II and III were not submitted, was irregular.

A Government direction in respect of a specific scheme at Golibar, Santacruz is discussed below:

2.1.10.3 Rehabilitation in Golibar, Santacruz

A rehabilitation scheme to rehabilitate slum-dwellers on the same site involving a slum on 18 acres of MHADA land in Golibar, Santacruz was sanctioned between 2006 and 2007 to be executed by M/s Shivalik Ventures, Mumbai. While the work was in progress, the developer submitted (January 2008) a proposal to the Chief Minister for integrated redevelopment (special township project) of the slum in Golibar, Santacruz, involving a total area of 125 acres for rehabilitating approximately 26,000 families. Of the 125 acres, 26 acres of land belonged to MHADA, of which 18 acres were entrusted to the same developer for in-situ rehabilitation and 52 acres were owned by private persons, of which the developer claimed to have obtained rights in respect of 22 acres. The other landowners were either not available or not interested in the remaining land. Fourty-three acres of the land belonged to the Defence Ministry, two acres were owned by the Central Excise Department and two acres by the State Government. The proposal for development of Golibar slums as a special township project was approved (April 2008) by the Chief Minister by issuing instructions under Clause 3 (K) of the Slum Act. In pursuance of such approval, the Housing Department issued an order (August 2008) to SRA. The various aspects of the order and our observations are as mentioned below :

³⁵ Committee of Secretaries is an arrangement at Government level to monitor the implementation of DRP. This is headed by the Chief Secretary and six other Secretaries as its members.

³⁶ (i) Ackruti City, Mumbai and (ii) M/s.Ruchi Priya Developers Pvt. Ltd., Mumbai

Government Order (August 2008) directing SRA	Audit observation
To take measures to declare the private land, not in the possession of M/s Shivalik Ventures as slum and include these areas in a proposal.	To declare a private land as a slum, it was necessary that proposals from the chosen developer along with 70 per cent consent of the slum-dwellers was to be submitted for SRA to initiate proceedings for acquisition of private land. No objection certificate from the landowner in favour of such a project was not available on record. M/s Shivalik Venture's claim to have acquired 22 of the 52 acres land for which consent had been acquired was not verified by Government/SRA before issue of such an order.
To accept the proposal of M/s Shivalik Ventures on State Government land of two acres encumbered by slums as a township project.	This order confers all the rights for redevelopment of a town ship project on M/s Shivalik Ventures without any transparent bidding as envisaged in the housing policy of July 2007. Government also did not formulate any guidelines for selection of developer as well as implementation of the project.
To charge a land premium of 25 per cent of prevailing ready reckoner rate as per UDD directions of April 2008. Further, it was also directed to revise the LOI as and when the land belonging to GOI, State, MCGM and private is brought in the township scheme.	Fixing of 25 per cent land premium on ready reckoner rates was arbitrary and without any justification in lieu of tendering. Though the housing policy of 2007 envisaged execution of STP on the lines of DRP, no cost-benefit analysis of the project was done before giving such directions to SRA. In this project, 43 acres of land belonged to the Defence Ministry and two acres were owned by the Central Excise Department. No objection certificates from these two Ministries were required to be obtained before approval of the project. This was not done.

The *suo moto* decision on the part of Government at the instance of one developer's willingness to go ahead with the STP lacked transparency in selection of developer and it effectively assisted the developer to take up a large township scheme.

We noticed that M/s Shivalik Ventures operated as a partnership firm when it had requested (January 2008) Government for the STP and was converted into a limited company in which Unitech Limited, held a substantial interest of 50 per cent stake in the company.

As per the LOI in August 2009, 5,079 rehab tenements were approved, of which six buildings with 583 rehabilitation tenements were constructed (May 2011). Work was in progress in respect of eight more buildings with 1,686 tenements. Similar directions under Section 3 (K) of Slum Act were issued by Government in respect of another five projects as detailed in **Appendix 2.1.10**.

2.1.11 Financial Management

SRA receives funds in the form of infrastructural charges³⁷, Maharashtra Regional and Town Planning (MR&TP) Development charges³⁸, land premium³⁹ and maintenance charges⁴⁰, from developers. Infrastructural charges are retained by SRA to the extent of one-third in Mumbai city and 10 *per cent* in Mumbai suburban. The infrastructural charges retained as per Clause 9.2 of DCR 33 (10) by SRA are to be utilised for improvement of the infrastructure in slums or slum rehabilitation areas. In the case of development charges, one-third of the amount is retained, while in the case of land premium, 10 *per cent* is retained by SRA. The rest of the amount is then transferred to the MCGM (Infrastructural and Development charges) while 90 *per cent* of land premium is transferred to the Maharashtra Housing and Area Development Authority (MHADA). Hundred *per cent* of scrutiny and other fees and charges⁴¹ are retained by SRA. The maintenance deposits so collected from the developers are to be refunded to SRA Co-operative Housing Societies after a period of 10 years from the date of occupation certificate issued to the rehabilitation building of SRA Co-operative Housing Society.

We noticed that though DCR provisions clearly specified utilization of infrastructural charges recovered on improvement of infrastructure in slums, ₹ 78.89 crore recovered and retained from 1996 by SRA towards infrastructural charges was lying as of August 2011 without being used for the said purpose.

During the exit conference, the Principal Secretary accepted (October 2011) the lapse and directed the CEO, SRA to prepare schemes for utilization of the balance infrastructural funds.

2.1.12 Monitoring

2.1.12.1 Review by Slum Rehabilitation Authority

SRA was set up under the Chief Minister to monitor the overall implementation of the schemes. It was noticed that 12 meetings were held from March 1996 to June 2004. Of the 12 meetings, nine were held in the first five-year period. No meeting had been held for the last seven years. Thus, the schemes were not being adequately monitored.

³⁷ Infrastructural charges are levied to strengthen the finance of MCGM to augment drinking water and other infrastructure to ease the pressure on infrastructure, due to additional incentive in SRS.

³⁸ Development charges are applicable to all development permissions that are sought from the planning authority (SRA) as per Section 124E of The Maharashtra Regional and Town Planning (MRTP) Act, 1966.

³⁹ 25 *per cent* of ready reckoner rate is to be collected as land premium.

⁴⁰ As per clause 9.1 of DCR 33 (10) ₹ 20,000 per rehab tenement is to be collected as a deposit for maintenance to be passed on to the slum-dwellers co-operative society after 10 years from granting of OC.

⁴¹ Other fees and charges include layout deposit, amended layout charges, revalidation charges, regularization charges, transit camp fees, balcony enclosure premium, open space deficiency premium *etc.*

2.1.12.2 Participation of non-official members

Of the 15 members of SRA, six non-official members⁴² were removed by the Government in July 2005 in public interest. These vacancies had not been filled till date (July 2011). Incidentally, we noticed that in DRP, Government appointed a Committee of Experts (CoE) consisting of members from NGOs to guide Government/DRP for the speedy implementation of the scheme.

2.1.12.3 Non-enforcement of technical and quality checks

The Afzulpurkar Committee⁴³ had observed (July 1995) that quality of construction would have to be ensured as sub-standard construction was an unacceptable proposition, but more so because faulty and sub-standard construction would lead to abandoning of dwelling limits, giving rise to urban decay. The Slum Act did not have any provision regarding the quality of work rendered in the SRSs. The Tata Institute of Social Science's⁴⁴ report of December 2003 mentioned that the rehabilitated buildings showed presence of cracks, leakages, weak foundation, incomplete finishing and bad masonry works and that such defects occurred due to the bad quality of construction.

In view of the several complaints on quality of construction and delays in completion, SRA empanelled (June 2008) 21 consultants for third party quality audit (TPQA) and 18 PMCs to ensure the quality and speedy implementation. We found that neither any system for entrustment of assignment to these consultants had been evolved by SRA nor any minimum standards of quality of standard for construction were prescribed. As a result, the empanelment of the consultant did not serve the intended purpose.

During exit conference (October 2011), the CEO, SRA stated that the minimum standards of quality of construction of rehabilitation buildings were pending for Government sanction. Principal Secretary accepted the fact that there were many buildings with problems of bad construction.

2.1.12.4 Lack of internal control

A Management Information System is a part of an organisation's internal control mechanism. Though SRA had taken the initiative to install software for the functions of all departments, the system was not capable of generating any report other than the proposals received in SRA. Further, a geographical information system for slums in Mumbai, procured (September 2005) at a cost of ₹ 33 lakh was lying idle for want of data. As per Section 3-O of the Slum Act, SRA was to submit its Annual Financial Statements and the programme of work for the succeeding financial year to the State Government. This was not done (October 2011). In SRA, the system of internal audit was absent for initial 14 years. It was only in the year 2010 that an internal auditor was appointed.

⁴² They were members of NGO and experts in Housing Sector.

⁴³ A Committee appointed by the Government of Maharashtra, chaired by a former Chief Secretary of Maharashtra, Shri D.K.Afzulpurkar, for the rehabilitation of slum-dwellers and hutment-dwellers through reconstruction.

⁴⁴ Tata Institute of Social Science a premier institute in the field of social sciences was engaged by SRA in May 2000 for conducting a survey regarding utilization of slum rehabilitation tenements provided to slum-dwellers under SRS.

2.1.13 Conclusion

There was no evaluation of developers and the quality of the construction was left to their discretion. Beneficiaries in the approved Annexure II lists were found to be ineligible during re-verification. SRA did not have any database of slums to decide whether Governmental intervention was required for redevelopment of non-viable slums. The developer for the Mumbai international airport slum rehabilitation project was granted huge concessions. The Dharavi Redevelopment Project was yet to take off even after seven years of its approval. Special township projects were sanctioned to developers even though all prerequisite requirements had not been fulfilled by them. As against the targeted rehabilitation of 8.05 lakh slum dwellings within five years, only 1.27 lakh slum dwellings could be rehabilitated in 15 years of implementation.

2.1.14 Recommendations

Government may :

- fix norms to evaluate developers technically and make lists of qualified developers available to the slum-dwellers;
- minimize the time overruns in Slum Rehabilitation schemes by close monitoring of progress and effective interventions;
- enforce norms to ensure quality of construction of rehabilitation buildings;
- ensure effective compliance with the provisions of the Maharashtra Slum Areas (Improvement, Clearance and Redevelopment) Act, 1971, to check unauthorized transfer of tenements;
- ensure transparency in the selection of bidders/developers for township projects; and
- ensure strict compliance of the provisions of the Maharashtra Slum Areas (Improvement, Clearance and Redevelopment) Act, 1971, regarding non-transfer of rehabilitated tenements and complete the distribution of photo identity cards to the beneficiaries.

The matter was referred to the Government (September 2011). Reply had not been received (October 2011).

Environment Department

2.2 Role of Maharashtra Pollution Control Board in Prevention and Control of Water Pollution in Maharashtra

Highlights

Water pollution means contamination of water or alteration of the physical, chemical or biological properties of water by discharge of various kinds of wastes into water, directly or indirectly, which renders water harmful for public health, health of animals, plants, aquatic organisms etc.

A performance audit of the role of the Maharashtra Pollution Control Board, which was responsible for implementation of various Acts and Rules in the State related to pollution, covering a period from 2006-07 to 2010-11 was conducted. It was noticed that the sources contributing to water pollution in the State had not been identified; industries were running without valid consents; domestic and industrial effluents were being released into water bodies without treatment etc.

Some of the significant findings are as follows :

None of the six test-checked Regional Officers had prepared the databases of the pollutants, sources of the same and pollution loads, as a result of which, risks to the environment and health caused by water pollution could not be assessed by the Maharashtra Pollution Control Board.

(Paragraph 2.2.6.2)

The Maharashtra Pollution Control Board did not initiate any action to prepare a river health booklet or identify any river for pilot study for abatement of water pollution.

(Paragraph 2.2.6.4)

There was no mechanism in place for monitoring the validity period of the consents granted to various industries by the Maharashtra Pollution Control Board. As of August 2011, 10,156 consent applications were pending for more than 120 days.

(Paragraph 2.2.8.1)

In 18 urban local bodies, domestic effluents were discharged without any treatment and in seven urban local bodies, the treatment capacity was in the range of 48 to 94 per cent vis-à-vis the sewage generation.

(Paragraph 2.2.9.1)

There were 14,737 water pollution-prone industries in the State of which 1,726 industries had only partial effluent treatment facilities and 356 industries had no effluent treatment facilities.

(Paragraph 2.2.10)

Common Effluent Treatment Plants and Effluent Treat Plants were found inadequate to treat industrial effluents and the treated effluents

exceeded the consented standard of Chemical Oxygen Demand and Biological Oxygen Demand.

(Paragraph 2.2.10.1)

Due to non-completion of the works under the National River Conservation Programme, untreated sewage water (around 27 million litres per day) was being discharged into the Krishna river at Sangli. At Nanded, though the work had been completed, the entire untreated sewage/waste water (60 MLD) was being directly discharged into the Godavari river due to non-commissioning of the programme.

(Paragraph 2.2.14)

Since 2000-06, 23 polluted river stretches were identified (July 2007) by the Central Pollution Control Board, which further increased to 28 by October 2010.

(Paragraph 2.2.15.2)

The number of water-borne diseases increased from 3.14 lakh in 2006-07 to 21.24 lakh in 2010-11, which indicated the failure of the respective authorities in mitigating water pollution.

(Paragraph 2.2.16)

In the six test-checked Regional Offices, there were shortfalls ranging from 16.83 to 52.51 per cent in collection of samples for testing, as of December 2010.

(Paragraph 2.2.17.2)

2.2.1 Introduction

Water pollution means contamination of water or alteration of the physical, chemical or biological properties of water by discharge of any sewage, trade effluent or substance of any kind into water, directly or indirectly which renders water harmful for public health, domestic, commercial, industrial, agricultural or other legitimate uses as well as health of animals, plants or aquatic organisms. Pathogens such as bacteria and viruses enter waterways through untreated sewage, storm drains *etc.*, and are harmful for human life. Untreated sewage and fertilizers contain nitrates and phosphates, which are harmful for aquatic life. Water pollution covers both surface water pollution and groundwater pollution. The major types of water pollution can be classified as municipal, industrial and agricultural water pollution, which affect the bio-diversity and ecology adversely.

The Maharashtra Pollution Control Board (MPCB) is responsible for implementation of the various Acts and Rules relating to water pollution in the State, which has four major rivers *viz.*, the Godavari, Krishna, Tapi and Narmada and a number of lakes, rivers and other water bodies, which make up its main sources of water.



MPCB, being a major regulator for implementation of environmental laws and pollution control in the State, plays an important role in securing sustainable development by enforcing various laws, rules, regulations *etc.* pertaining to prevention and control of pollution. It is also responsible for monitoring of pollution and for preventive and curative action.

The Water (Prevention and Control of Pollution) Act, 1974, a Central Act, was adopted by the Government of Maharashtra in 1981 to regulate water pollution in the State. The Act empowered MPCB to issue consents for operation of industries in the State and their periodical renewal. It also empowered MPCB to take action against the industries which did not adhere to the conditions laid down in the consents. In 1981, the Government of Maharashtra also adopted the Water (Prevention & Control of Pollution) Cess Act, 1977, which empowered MPCB to collect water cess from industries and local bodies. MPCB was also to initiate remediation or restoration projects by imposing remediation costs and penalties with the approval of the Central Pollution Control Board (CPCB). MPCB's primary role is of a regulator. However, it goes beyond regulations in order to advise all stakeholders involved in environment management and pollution control for compliance of the laws to organize the systems necessary for securing these objectives and also to sensitize the laws and their implications.

2.2.2 Organisational set-up

The State Environment Department headed by a Secretary, formulates the plans and programmes for meeting the statutory requirements regarding pollution and also oversees the working of the main pollution regulatory body, the MPCB. The activities of MPCB consist of capacity building, development of infrastructure, engaging services of professionals/environmental scientists, outsourcing of work, preparation and implementation of Action Plans for environmental management, environmental monitoring and enforcement of the various environmental legislations and Rules notified thereunder. The Member Secretary of MPCB executes the decisions taken by the Board. There are 12 Regional offices of MPCB, each headed by a Regional Officer (RO). MPCB has a Central Laboratory and six regional laboratories, which are attached to the concerned regional offices.

2.2.3 Audit objectives

The objectives of the performance audit were to assess whether:

- the planning process for identifying the sources of water pollutants was efficient and effective;
- the grant of consents to industries to establish and operate treatment plants was efficient and effective;
- the existing effluent treatment systems in the industries and non-industries was efficient and effective;
- the river water and coastal water quality was maintained; and
- a monitoring mechanism was in place to enforce control of water pollution effectively.

2.2.4 Audit criteria

The criteria adopted for the performance audit were:

- The Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988;
- The Water (Prevention and Control of Pollution) Rules, 1975;
- The Water (Prevention & Control of Pollution) Cess Act, 1977;
- The Environment (Protection) Act and Rules, 1986;
- Rules, orders, notifications and instructions issued by the Government/ Central Pollution Control Board (CPCB) from time to time.

2.2.5 Audit scope, coverage and methodology

A performance audit was conducted during January-May 2011 to assess the role of MPCB with regard to implementation of the Acts and Rules relating to water pollution in Maharashtra by MPCB. For the purpose, records covering the period 2005-11 of the office of the Environment Department (ED), the MPCB headquarters office and six⁴⁵ out of 12 Regional Offices (ROs) were test- checked. The ROs were selected on the basis of the number of pollution-prone industries in each region. Joint site visits were also conducted by Audit along with the officials of MPCB. An entry conference was held with the Secretary, Environment Department on 18 March 2010. Audit findings were discussed with the Secretary, Environment Department in an exit conference held on 21 September 2011. The Secretary accepted the recommendations. Responses received from the authorities concerned have been incorporated at appropriate places.

Audit findings

2.2.6 Planning process

2.2.6.1 Inventory of water pollution bodies

The Environment Department of the State had conducted (July 2009) a survey through MPCB to identify all the rivers in the State and prepare an inventory

⁴⁵ Aurangabad, Kalyan-Dombivali, Kolhapur, Nagpur, Nashik and Navi-Mumbai,

of river basins. However, surveys to identify all the lakes and groundwater resources, run-off streams, ponds and tanks was not conducted by MPCB. It was stated (February 2011) that there was no such programme envisaged to be a comprehensive responsibility of MPCB.

In the exit conference the Secretary, Environment Department stated (September 2011) that it had taken steps to get the inventory of all the major water bodies prepared in the State by satellite through the Maharashtra Remote Sensing Application Centre and had also directed all the ROs of MPCB to compile information regarding the water bodies in their regions, to rank them on the basis of pollution potential.

2.2.6.2 Database for identification of risk

As per Section 17 (1) (a) of the Water (Prevention and Control of Pollution) Act, 1974, the State Pollution Control Board has to plan a comprehensive programme for the prevention, control or abatement of pollution of streams and wells in the State and to secure the execution thereof. The National Water Policy 2002 also envisages development of an information system for water related data at the State level for resource planning. In order to plan the programme, the Board must have a detailed database of the pollutants, sources of the same and pollution loads.

Scrutiny of records revealed that none of the six test-checked ROs had prepared the database. As a result, risks to the environment and health caused by water pollution could not be assessed by MPCB.

In the absence of a data base, the pollution factor, pollution load *etc.*, were not ascertainable. Hence, MPCB was not able to exercise effective control over consent management⁴⁶ of the industries, pollution load assessment, planning for pollution abatement measures and the statutory function of dissemination of information to other agencies was not discharged. Further, lack of identification of risks of poor water quality on environment would result in irreversible species loss, destruction of habitats as well as impairment of the ecosystem.

MPCB stated (October 2011) that the database could not be prepared due to progress of work of inventorisation of industries and updation of the Master register.

In the absence of such vital information, the planning for water pollution abatement programme would be severely affected.

2.2.6.3 Comprehensive Action Plan to address water pollution

The Government had not formulated a separate policy for addressing water pollution in Maharashtra. It had not enacted legislations for ecological restoration of rivers, lakes and groundwater. Periodic and regular meetings of the Water Quality Review Committee⁴⁷ had taken place, but no steps had been taken to improve co-ordination between the Centre and the State. Thus policy,

⁴⁶ Issuing consents for establishment of industries and their periodic renewal

⁴⁷ A committee formed by the Government to review the water quality monitoring network; to review water quality; analyse and interpret data in order to identify problem areas and develop an action plan for improving water quality on a sustainable basis.

In the six test-checked Regional Offices, databases showing the factors contributing to water pollution were not maintained

legislations, Action Plan programmes to control water pollution were not prepared by the State Government.

In the exit conference the Secretary, Environment Department stated (September 2011) that a comprehensive Action Plan, to address the policy for abatement of water pollution, was pending before the state cabinet for approval.

2.2.6.4 Preparation of Action Plan to enhance water quality

Section 12 (5) of the Maharashtra Water Resources Regulatory Authority (MWRRA) Act, 2005 and Clause 2.3 of the Maharashtra State Water Policy 2003 envisaged preservation and enhancement of the water quality in the State. These provisions required the MWRRA⁴⁸ and MPCB to make special efforts to improve water quality (mainly river water) in the State. A meeting was convened by the MWRRA on 9 October 2007 with the officers of the MPCB to discuss the coordinated action to be taken by the MWRRA and MPCB for implementation of the above provisions and it was decided that:

- MPCB would bring out a river health booklet, with maps, for the State based on analysis of available river water quality data giving reach⁴⁹-wise details of river water quality, identification of industries and local bodies responsible for pollution in the reach with quantum of waste water generated by each and identification of very critical reaches needing urgent attention.
- MPCB would identify one or two river reaches for a pilot study on water quality improvement identifying all the industries, local bodies in the reach, the waste water generated by each, level of treatment and river water quality month wise at various points and suggest action plan to remedy the situation to enhance the water quality to an acceptable standard.

We noticed in audit that there was nothing on record to show that MPCB had initiated any action to prepare the river health booklet (with maps) or identified any river for pilot study for abatement of its pollution. However, in the exit conference the Secretary, Environment Department stated (September 2011) that Upper Bhima River was being considered for preparing a comprehensive Action Plan.

2.2.6.5 Preparation of Zoning Atlas

The Ministry of Environment and Forests (MoEF) introduced (1995) a Zoning Atlas programme with the financial assistance of the World Bank through the CPCB. It was envisaged that the Zoning Atlas would specify suitable locations to set up industries district-wise. MoEF accorded sanction (1994) to implement a project of preparing a Zoning Atlas for Siting of Industries (ZASI). Initially, zoning of Ratnagiri, Pune and Aurangabad districts was approved by the CPCB in October 2001 and CPCB sanctioned ₹ 36.95 lakh to

⁴⁸ It is an authority established to regulate water resources within the state of Maharashtra, facilitate and ensure judicious, equitable and sustainable management, allocation and utilisation of water resources *etc.*

⁴⁹ Stretches of river

MPCB during 2003-08 for this purpose. M/s Mitcon Ltd. Pune was invited by MPCB for the work of formulation of Zoning Atlas.

Scrutiny of records of MPCB revealed that the process of preparation of the Zoning Atlas in respect of Pune District was completed in February 2007 and submitted to the Industries Department, Government of Maharashtra for consideration of industry siting plan. The reports in respect of Ratnagiri and Aurangabad districts were not finalised though they were submitted to CPCB (September 2006) and the Government (February 2007) respectively for technical approval. The work order of preparation of the Zoning Atlases in respect of Latur and Nanded was issued (November 2008) to M/s. Development Alternatives, New Delhi and that of Nashik and Solapur districts was issued (November 2008) to M/s. GIS Enabled Environment & Neo-Graphic Center, Ghaziabad, however the same were yet to be finalised. The Zoning Atlas in respect of remaining districts was yet to be prepared.

In reply, MPCB stated (September 2011) that work for Latur, Nanded, Nashik and Solapur districts was in progress and the draft reports had been presented to District Collectors and stakeholders. MPCB also stated that the process had been delayed due to delay in finalizing the methodology for preparing Zoning Atlas and non-receipt of guidelines for expenditure out of Cess Funds from CPCB.

The reply is not acceptable as MPCB being entrusted with the responsibility of prevention and control of water pollution should have ensured timely preparation of Zoning Atlases.

2.2.7 Financial Management

2.2.7.1 Funds and expenditure

Financial resources and their utilization by MPCB during 2005-11 were as given in Table 1.

Table 1: Financial Resources and its utilization by MPCB (₹ in crore)

Year	Opening Balance	Assistance from CPCB/GOI	Reimbursement of Water Cess from GOI	Internal Resources	Interest on Investment	Total	Expenditure	Closing Balance
2005-06	50.69	5.77	9.14	52.45	3.59	121.64	76.13	45.51
2006-07	45.51	1.51	11.74	60.10	2.96	121.82	61.87	59.95
2007-08	59.95	4.75	16.97	43.06	11.17	135.90	45.44	90.46
2008-09	90.46	5.65	25.97	53.18	9.56	184.82	45.35	139.47
2009-10*	139.47	5.52	10.66	50.52	9.70	215.87	47.54	168.33
2010-11*	168.33	0.68	12.76	57.50	9.90	249.17	76.25	172.92
Source MPCB								

* Accounts for the year 2009-10 and 2010-11 were not prepared by MPCB

The above figures of resources and their utilisation include all prevention and control of pollution activities like air pollution, water pollution, solid waste management, bio-medical waste *etc* because separate figures for water pollution activities were not available with MPCB. In view of this, it was not possible for Audit to specifically comment on the utilization of resources for water pollution.

While the total funds including internal revenue of MPCB increased from ₹ 121.64 crore in 2005-06 to ₹ 249.17 crore in 2010-11, the expenditure decreased from ₹ 76.13 crore in 2005-06 to ₹ 47.54 crore in 2009-10 and again increased to ₹ 76.25 crore in 2010-11.

In reply, MPCB stated (May 2011) that during 2010-11, expenditure increased to ₹ 76.25 crore mainly due to increase in financial assistance from cess (₹ 10.66 crore), in 2009-10 to ₹ 12.76 crore in 2010-11. Further, there was expenditure on awareness programmes and publicity (₹ 1.75 crore) and purchase of equipments and fixed assets (₹ 11.03 crore).

2.2.7.2 Under-utilization of cess funds received from CPCB

According to the instructions⁵⁰ issued (December 1998) by GOI, MoEF, up to 80 per cent of the cess amount collected from local bodies and industries towards water consumption by the Pollution Control Boards in the States were to be reimbursed to the Boards in accordance with Section 8 of the Water (Prevention and Control of Pollution) Cess Act, 1977 for meeting their approved expenditure requirements. It was observed that;

a) GOI's 80 per cent share for the period from 1983-84 to 2009-10 amounting to ₹ 80.38 crore was receivable as reimbursement against which ₹ 12.77 crore was received and ₹ 67.61 crore remained outstanding. (Appendix 2.2.1).

b) The expenditure incurred on office operations and establishment of the Pollution Control Boards of the States was not to exceed 25 per cent of the amount so reimbursed and the remaining 75 per cent was to be utilized on programmes and activities directly related to the prevention and control of pollution. However, MPCB did not utilize the funds as per the prescribed norms. There was underutilization of funds⁵¹ ranging between ₹ 18.88 crore to ₹ 42.95 crore on activities relating to prevention and control of pollution during the period of 2005-06 to 2008-09⁵², while ₹ 13.18 crore to ₹ 25.95 crore was utilized in excess on establishment during the same period as shown in Table 2.

Table 2: Utilisation of funds received from CPCB (₹ in crore)

Year	Purpose of utilisation (Percentage)	To be utilised	Actually utilised	Short (+)/excess utilisation (-) less utilisation
2005-06	Office and establishment (25)	24.55	42.22	(-) 17.67
	Pollution control activities (75)	73.64	30.69	42.95
2006-07	Office and establishment (25)	27.48	44.10	(-) 16.62
	Pollution control activities (75)	82.45	53.79	28.66
2007-08	Office and establishment (25)	31.73	44.91	(-) 13.18
	Pollution control activities (75)	95.18	70.73	24.45
2008-09	Office and establishment (25)	38.22	64.17	(-) 25.95
	Pollution control activities (75)	114.65	95.77	18.88

Source: MPCB

⁵⁰ MoEF, GOI order No. Q 17011/1/88-CP dated 28 December 1998

⁵¹ This includes all prevention and control of pollution activities like air pollution, water pollution, solid waste management, bio-medical waste etc.

⁵² Figures for the year 2009-10 and 2010-11 were not furnished as the accounts are yet to be audited

MPCB replied (January 2010) that underutilization of funds was due to delay in sanctioning of schemes and delayed issue of guidelines for schemes by CPCB.

The Government stated (September 2011) that excess expenditure on office and establishment from 2005-06 onwards was due to provisioning of funds for pension which was shown as expenditure. However, the same was invested in fixed deposits by MPCB. Underutilization of cess funds for pollution control activities was because the schemes were under progress or schemes were yet to be started or schemes were awaiting administrative approval or financial sanction. The fact remains that funds were underutilized for pollution control activities and excess expenditure was incurred under office and establishment, which was against the norms fixed for utilization of cess funds.

2.2.7.3 Outstanding recovery of cess on water

The Water (Prevention & Control of Pollution) Cess Act, 1977 provided for levy and collection of cess based on water consumed by industries and by local bodies. The cess was meant to augment the resources of the Central and State Pollution Control Boards for prevention and control of water pollution. The cess, so collected by the State Pollution Control Boards were to be remitted to CPCB, which in turn was to remit back 80 *per cent* of the cess to the State Pollution Control Boards. Under Section 10 of the Act, if any industry or local authority failed to pay the cess payable under Section 3 to the State Government within the date specified, they were liable to pay interest at the rate of two *per cent* on the amount to be paid for every month or part of a month from the due date till such amount was actually paid. Scrutiny of records of MPCB revealed that:

- An amount of ₹ 50.60 crore was outstanding on account of cess on water consumed for the period from April 1983 to March 2009 by 17 local bodies (₹ 14.68 crore) and six industries (₹ 35.92 crore). Interest payable for delay in payment of cess as specified under the Act was not levied from the defaulters.
- Out of 253 local bodies in the State, the assessment of cess for only 240 local bodies was done by MPCB up to March 2010. The assessment of cess for 13 local bodies was not done since these were newly added. However, assessment notices had been issued to them by MPCB in July 2010.

The Government stated (September 2011) that many letters, payment notices and reminders were issued to all the local bodies to make the payments immediately to MPCB and continuous efforts were being made to recover the dues from local bodies and industries.

2.2.8 Functions of Maharashtra Pollution Control Board

The important regulatory functions of MPCB include issuing of consents to industries to establish and to operate, issuing consents to local bodies to discharge of domestic effluents (sewage water) into the water resources, monitoring and watching compliance of the consent conditions and taking control measures whenever deviations are observed.

2.2.8.1 Grant of consents to industries and local bodies by MPCB

As per Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 no person should, without the previous consent of the State Pollution Control Board, establish or take any steps to establish any industry, operation or process or any treatment and disposal system, which is likely to discharge sewage or trade effluents into a stream or well or sewer or on land. The consent would be granted within 120 days from the date of application (vide Section 25(7) of the Water Act, 1974), failing which, it would be treated as a deemed consent. Urban local bodies are also required to obtain consents for operating sewage treatment plants to treat the domestic effluents generated in their municipal areas. Delays of over 120 days in giving consents would mean that the consents were deemed to have been granted.

As of 21 August 2011, 10,156 applications for grant of consent were pending beyond the prescribed limit of 120 days

Scrutiny of records of MPCB revealed that 10,156 consent applications were pending for more than 120 days as of 21 August 2011. There was no mechanism in place for monitoring the validity period of the consents granted to various industries.

MPCB stated (November 2011) that the applications received recently were under process and remaining was pending for want of compliance to queries. Though MPCB communicated the queries to the industries, the fact remains that there was no monitoring mechanism to ensure granting of consent to the industries within the prescribed time limit.

2.2.9 Treatment of domestic effluents

The Twelfth Schedule under Article 243W of the Constitution of India entrusts urban local bodies with the duties of protection of the environment and promotion of ecological aspects, which include water supply, sewerage *etc.* Further, as per Section 17 (1) (f) of the Water (Prevention and Control of Pollution) Act, 1974, MPCB is required to inspect sewage or trade effluents for their treatment.

2.2.9.1 Inadequate treatment of domestic effluents

Scrutiny of the records of MPCB revealed that there were 150 local bodies under the jurisdiction of six test-checked ROs but Sewage Treatment Plants (STPs) were provided by only eight⁵³ local bodies. The status of domestic effluents generated and treated in these STPs as of March 2010 is detailed in **Table 3.**

⁵³ Aurangabad Municipal Corporation, Nanded Waghala Municipal Corporation, Kalyan-Dombivli Municipal Corporation, Nasik Municipal Corporation, Navi Mumbai Municipal Corporation, Sangli Miraj Kupwad Municipal Corporation, Nagpur Municipal Corporation and Kolhapur Municipal Corporation

Table 3: Domestic effluents generated and treated in test-checked ROs

Name of Regional Office	Name of city under R.O	Quantity of domestic effluent generated (MLD) ⁵⁴	STP treatment capacity (MLD)	Effluent disposed without treatment (MLD)	Treatment Gap (Percentage)
Aurangabad	Aurangabad	107	6.5	100.5	94
	Jalna	18.35	0	18.35	100
	Latur	21	0	21	100
	Beed	11	0	11	100
	Nanded	60	0	60	100
	Parabhani	24	0	24	100
Kalyan	Kalyan	184	30	154	84
	Ambernath	24	0	24	100
	Kulgaon-Badlapur	18	0	18	100
	Bhivandi-Nizampur	84	17	67	80
	Ulhasnagar	88	0	88	100
Nashik	Nashik	250	130-140	110-120	48
	Jalgaon	48	0	48	100
	Bhusaval	11.4	0	11.4	100
	Malegaon	15	0	15	100
	Dhule	28	0	28	100
	Ahmednagar	35	0	35	100
Navi Mumbai	Navi Mumbai	136	136	0	0
Nagpur	Nagpur	350	100	250	71
	Wardha	5.18	0	5.18	100
	Gondia	4.83	0	4.83	100
	Chandrapur	29.7	0	29.7	100
Kolhapur	Kolhapur	90	43.5	46.5	52
	Ichalkaranji	37	0	37	100
	Sangli-Miraj	40	13*	40	100
	Kupwad				

Source: Report on Status Evaluation of STPs in Maharashtra(MPCB)
 *As the STP at Sangli was not in working condition, all the effluents were discharged into the Krishna river without treatment.

Majority of the domestic effluents were discharged without treatment

Therefore, in 18 out of 25 cities in the test-checked ROs, domestic effluents were discharged without any treatment and in seven cities (except Navi Mumbai) the gap between sewage generation and treatment capacity was in the range of 48 to 94 *per cent*. This indicated that the status of treatment of domestic effluents in the test-checked ROs was far from satisfactory. The reasons for not providing of STPs in 18 cities were not intimated by MPCB.

In reply to an audit query, the ROs stated (March-April 2011) that warning notices and show-cause notices had been issued to all the defaulting local bodies discharging effluents without any treatment.

2.2.9.2 Functioning of STPs

As stated above, there were gaps between the sewage generated and the actual sewage treated. These gaps resulted in environmental degradation of water

⁵⁴ Million Litres Daily(MLD)

bodies. In this background, it was imperative that the sewage was treated efficiently and effectively.

Joint visits (March-April 2011) to seven STPs in the test-checked ROs along with MPCB officials revealed the following:

(i) STP at Adharwadi, Kalyan

In the STP at Kalyan, we noticed that a flow meter to measure the quantum of inflow and outflow of sewage had not been installed. Therefore, the actual inflow and outflow of sewage could not be ascertained. The secondary digester⁵⁵ had not functioning since 1990, resulting in non-degradation of sewage at this stage. Alternative power supply arrangements required for treatment of sewage during load shedding were not made by the Municipal Corporation.



Secondary Digester of the STP at Adharwadi

Kalyan Dombivli Municipal Corporation stated (October 2011) that tenders to upgrade the STP with diesel generator back-up had been issued in September 2011.

(ii) STP at Chehedi, Nashik

The work on the STP, with a capacity of 22 MLD, was sanctioned in March 2001 at a total cost of ₹ seven crore. Though the project was scheduled for completion by March 2003, it was actually completed in June 2007 after a delay of four years and three months. The delay was attributed to reasons like non-acquisition of land, change in design, increase in span of rainy seasons *etc.* On completion of the STP, it did not perform up to full treatment capacity due to non-pumping of adequate quantity of sewage and STP treated only 15 MLD of sewage. The rest of the sewage (seven MLD) remained untreated and was being discharged into the Godavari river, defeating the purpose for which the STP was constructed.

The Secretary, Environment Department, replied (September 2011) that the delay of work was due to the land acquisition issues, changes in design and increase in the span of the rainy season. Further, the STP treated only 18

⁵⁵ A tank where sewage is degraded to a certain limit. After treatment in the primary digester, effluents are transferred to the secondary digester to ensure that the biological oxygen demand level is maintained and then transferred to a 'centrifuge', which removes sludge from effluents before discharging the same into nearby *nallahs* or creeks.

MLD of average sewage due to an inadequate sewerage network, the improvement of which had been taken up under JNNURM and was still under progress.



STP at Chehedi, Nashik

(iii) Old Ganeshwadi Pumping Station, Nashik

At the Old Ganeshwadi Pumping Station, Nashik, it was noticed that the sewage pumping station had a capacity of 22 MLD. The sewage collected on an average was 22 to 28 MLD at this pumping house and thus was more than its capacity. Moreover, the untreated sewage from the entry point of the sewage pumping station was found to be overflowing into the River Godavari, which was the primary source of drinking water in the area and polluting it.

The Nashik Municipal Corporation replied (March 2011) that the pumping station was renovated with a revised capacity of 25 MLD and an overflowing pipe was provided for maintenance purposes during emergencies. However, the audit observation during the field visit was confirmed by the department. It was stated that an overflow pipe was provided to direct sewage of the outfall sewer during emergency.

The reply is not acceptable since even after upgradation, the revised capacity remained lower than the maximum average of 28 MLD sewage received at the pumping house, which showed lack of proper planning and estimation.

(iv) STP at Nanded

At the STP at Nanded, it was noticed that the sewage pumping station near the old bridge at Nanded was not in working condition, as a result of which all effluents intercepted were being discharged into the Godavari River without treatment. Municipal solid waste generated was dumped on the bank of Godavari River unscientifically. As such, the possibility of heavy contamination of the Godavari river due to discharge of leachate⁵⁶ could not be ruled out.

⁵⁶ Liquid that seeps through solid wastes or other medium and has extracts of dissolved or suspended material from it;

2.2.10 Pollution by industries

Characteristics of industrial waste water can differ considerably, both within and among industries. The impact of industrial discharges depends not only on their collective characteristics, such as biochemical oxygen demand and the amount of suspended solids, but also on their content of specific inorganic and organic substances. Water pollution caused by major industries can be controlled at the point of generation by constructing effluent treatment plants (ETPs) for individual industries and common effluent treatment plants (CETPs) for clusters of medium and small-scale industries.

Scrutiny of records of MPCB revealed that there were 14,737 water -pollution prone industries in the State, including 8,737 in the six test- checked ROs. Out of them, 12,655 industries had adequate treatment facilities (7,516 in test-checked ROs), whereas 1,726 industries had partial effluent treatment facilities (905 in six test-checked ROs) and 356 industries in the State (316 in six test-checked ROs) had no effluent treatment facilities. There were only 20 CETPs in Maharashtra covering seven (ROs) and the remaining five (Aurangbad, Nasik, Chandrapur, Mumbai and Amravati) ROs had no CETPs under their jurisdiction. Due to non-installation of ETPs untreated effluent flows into the nearby water bodies causing water pollution. The details of the CETPs/ETPs *etc.*, are given in **Table 5**.

Table 5: Status of ETPs and CETPs in test-checked ROs as of March 2010

In the State as a whole		In test-checked ROs						Total in ROs
		Navi-Mumbai	Kalyan	Nashik	Aurangabad	Nagpur	Kolhapur	
Pollution prone industries	14737	1144	1078	2402	751	687	2675	8737
Industries having adequate facilities (ETPs)	12655	1144	792	2313	701	567	1999	7516
Industries with partial treatment facilities (Water)	1726	0	1	89	48	93	674	905
Industries without Treatment facilities(Water)	356	0	285	0	2	27	2	316
Number of CETPs operating	20	2	5	--	--	1	3	11
Number of CETPs under construction/ yet to be commissioned	6	--	1	--	1	--	4	6

Source: MPCB's Statistical Report, 2009-10

Though MPCB had issued proposed directions⁵⁷ to the defaulting industries, no legal action was taken as required under Section 33(1) of the Water (Prevention and Control of Pollution) Act, 1974 to ensure adequate treatment of effluents by these industries.

⁵⁷ As per Rule 4 of the Environment (Protection) Rules, 1986 proposed directions issued under Section 5 of the EPA specify the nature of action to be taken and the time within which it shall be complied giving an opportunity of not less than 15 days to file objections to the proposed directions.

CETPs and ETPs were found inadequate to treat the industrial effluents and the treated effluents also did not conform to the standards

2.2.10.1 Consented standards not maintained by CETPs

The objective of establishing CETPs was to set up economical effluent treatment facilities for small-scale industries before disposal of the treated water into streams, rivers or seas. CETPs were to be set up in industrial estates where there were clusters of small-scale industrial units and where many polluting industries were located.

Scrutiny of records in the test-checked ROs revealed the following:

- There were no CETPs under the jurisdiction of the ROs concerned in Aurangabad, Nasik, Ratnagiri and Sangli districts though there were 7931, 15318, 444 and 608 industries respectively under their jurisdiction. In reply, RO Nasik stated (March 2011) that a proposal for establishment of CETPs had been forwarded (July 2010) for approval to the Maharashtra Industrial Development Corporation.
- In respect of five CETPs under the jurisdiction of the RO, Kalyan and two CETPs under the jurisdiction of RO, Navi Mumbai, Chemical Oxygen Demand (COD)⁵⁸ in the treated effluents ranged from 326 to 3740 mg/l, thereby exceeding the consented COD limit of 250 mg/l.
- Out of the five CETPs under RO Kolhapur, three CETPs were in operation and two CETPs *i.e.*, Ichalkaranji Textile Development Cluster Ltd. and Parvati Co-operative Industrial Estate had not been commissioned as of December 2010. Construction of a CETP had not been started by the Parvati Co-operative Industrial Estate and construction was in progress in the Ichalkaranji Textile Development Cluster Ltd. area. As a result, effluents generated from the industries were discharged without treatment into a nearby *nallah*, which was flowing into the Krishna river and polluting it.
- There was one CETP in the jurisdiction of RO, Kolhapur (Chiplun) in the MIDC area of Lote Parshuram, the capacity of which was 4.5 MLD. However, the quantity of effluents generated was six MLD. The analysis report of the treated effluents showed high Biological Oxygen Demand (BOD)⁵⁹ of 850 mg/l against the prescribed limit of 100 mg/l and COD of 1750 mg/l against the prescribed limit of 250 mg/l. Hence, it was clear that untreated effluents were being discharged into the Dabhol creek, which was located nearby.
- A joint visit along with the officials of MPCB revealed that the consent to operate a CETP at MIDC Butibori, Nagpur, had expired on 31 January 2011. The consent was not renewed by MPCB as the effluents received were in excess of the CETP's designed capacity (five MLD). MPCB stated (April 2011) that the consent would be renewed after augmentation of the capacity of the existing CETP. In reply, MPCB further stated that augmentation work was in progress and after that, consents would be granted. The decision of the MPCB was flawed as it should have ensured full treatment of effluents flowing into the CETP before the renewal dates of the consents of the industries which were connected to it. Till

⁵⁸ A measure of chemically oxydizable organic matter

⁵⁹ A measure of biodegradable organic matter

augmentation of the CETP was completed, untreated effluents would flow into the river.

2.2.10.2 Adherence to consented standards by industries

The consent to operate is granted to industries by MPCB under Section 26 of the Water (Prevention and Control of Pollution) Act, 1974 and Section 21 of the Air (Prevention and Control of Pollution) Act 1981, which require an industry to provide a comprehensive effluent treatment system consisting of primary, secondary and /or tertiary⁶⁰ treatment as is warranted with reference to influent quality and operate and maintain the same continuously so as to achieve the quality of treated effluents as per MPCB specifications.

Scrutiny of records in respect of five out six test-checked ROs revealed that the treated effluents released by the industries had a very high biological oxygen demand (BOD) and chemical oxygen demand (COD) content compared to the prescribed consent conditions. The effluents discharged by the industries after treatment by ETPs did not conform to the norms as detailed in **Table 6**.

Table 6 : Range of BOD and COD in the test-checked ROs

Sr. No.	Region	Number of industries exceeded the consented limits during 2009-11	BOD range (norm: 100 mg/l)	COD range (norm: 250 mg/l)
1	Aurangabd	22	120-6050	300-9600
2	Kalyan	6	170-2800	440-5680
3	Kolhapur	25	140-5500	320-2400
4	Nashik	21	110-1500	280-2800
5	Nagpur	9	105-3500	316-3200

Source: JVS test reports of ROs

This pointed towards serious deficiencies in the treatment process being followed by these industries. This also seems to show that MPCB did not conduct adequate number of inspections and even if they did so, the inspections were likely to have been perfunctory.

The concerned ROs replied (April 2011) that show-cause notices and proposed directions had been issued (November 2010) to the industries under the Section 33A of Water (Prevention and Control of Pollution) Act, 1974.

The reply is not acceptable as apart from issuing notices, MPCB should have directed the water and electricity supplying agencies to stop services until the fulfilment of requirements under Water (Prevention and Control of Pollution) Act, 1974

2.2.11 Joint visits to industries

(i) M/s Konkan Marine Export & Karunya Marine Export, Ratnagiri

It was noticed that the flow meter of the ETP was not installed to the inlet to measure the quantities of effluents generated and treated. Samples were tested

⁶⁰ Primary treatment is removal of floating and suspended solids from sewage. In secondary treatment, biological methods such as digestion are used and tertiary treatment removes all but a negligible portion of bacteria and organic matter.

by MPCB once in three months instead of monthly as prescribed in MPCB's sampling norms. MPCB had not been monitoring groundwater quality in the premises of M/s Konkan Marine Export & Karunya Marine Export, Ratnagiri.



**M/s Konkan Marine Export & Karunya Marine Export, Ratnagiri
discharging effluents into sea**

(ii) M/s Gadre Marine Export Pvt. Ltd., Ratnagiri

The ETP of M/s Gadre Marine Export Pvt. Ltd., Ratnagiri was not working properly as the final effluent analysis (done by the company in its laboratory) report (February and March 2011) indicated that oil and grease in the treated effluents ranged from 21 to 145 mg/l against the consented limit of 10 mg/l and total dissolved solids ranged from 2187 to 2620 mg/l against the consented limits of 2100 mg/l. A flow meter had also not been installed to assess the quantity of inflow and outflow of the effluents. The final discharge into the sea was also not at the point designated by the National Institute of Oceanography (NIO).



**M/s. Gadre Marine Export Pvt. Ltd., Ratnagiri,
Flow meter at inlet point not installed**

2.2.12 Status of compliance of "Corporate Responsibility for Environmental Protection" (CREP) norms

Ministry of Environment and Forests (MoEF) launched a Charter on CREP in March 2003 with the purpose of going beyond the compliance with regulatory norms for prevention and control of pollution. The Charter set targets concerning conservation of water and disposal of pollutants in an

environment-friendly manner. The Charter enlisted action points for pollution control for 17 categories of highly polluting industries, which were not complying with the standards notified under the Environment (Protection) Act, 1986. The State Pollution Control Boards were responsible for monitoring these industries.

Scrutiny of records in five out of the six test-checked ROs⁶¹ revealed that out of 182 industries notified under the CREP norms, 89 had not complied with the norms while 47 industries had partially complied with the norms. Non-compliance with CREP norms would result in environmental pollution.

The concerned ROs stated (March-April 2011) that proposed directions⁶²/interim directions⁶³ had been issued (February 2011), as required, to all the non-complying industries.

2.2.13 Other sources of water pollution

Sources of water pollution can mainly be divided into two categories *viz.*, point source of pollution and non-point source of pollution. Point sources of pollution are identified sources such as industrial effluents and domestic effluents emitting harmful effluents directly into water bodies and thus can be monitored and regulated. Non-point sources of pollution are unidentified sources delivering pollutants indirectly through transport *e.g.* flowing *nalla* or environmental changes⁶⁴, which are much more difficult to monitor and control.

2.2.13.1 Pollution from slaughter houses

Standards for discharge of effluents from slaughter-houses have been laid down and notified under the Environment (Protection) Act, 1986. Abattoirs generally use large quantities of water for washing meat and cleaning processing areas. CPCB had prescribed (January 2001) that waste water discharged from slaughter-houses should be treated appropriately to meet the prescribed standards. Discharge of untreated effluents from these slaughter-houses could result in increase in pathogens which may percolate and contaminate groundwater.

Scrutiny of the records of the six test-checked ROs revealed that there were 56 slaughter-houses under their jurisdiction. Out of these, 39 were functioning without any consent from MPCB and had not even applied for the consents and 17 had applied for consent. An ETP was provided in only one slaughter-house at Aurangabad, while 55 slaughter-houses were discharging their effluents without treatment through open drains which were finally flowing into the water bodies near them.

⁶¹ RO, Aurangabad; RO, Navi Mumbai; RO, Nagpur; RO, Nasik; and RO, Kolhapur

⁶² A notice issued to defaulting industries warning them for their non-compliance of the consent conditions even after issue of show cause notices and allowing them to represent themselves.

⁶³ A direction issued to an industry prior to directions for its closure so as to give a final opportunity to the industry for rectifications.

⁶⁴ Water gets contaminated with pollutants present in the environment during the course of its flow. Environmental changes can also cause water pollution.

The ROs stated (March-April 2011) that action had been taken against the slaughter-houses by issuing proposed directions (July 2008) to the concerned local bodies such as Aurangabad Municipal Corporation, Nashik Municipal Corporation *etc.* However, closure directions or direction to cut water and electricity supply, under Section 33A of the Water Act, 1974, to the concerned abattoirs had not been issued.



Effluents released into an open soak-pit



Abattoir releasing effluents and solid wastes

Though MPCB issued proposed directions and show-cause notices to the respective municipal corporations, provisions of Section 41 to 44⁶⁵ of Water (Prevention and Control of Pollution) Act, 1974 dealing with prosecution of defaulting slaughter-houses, were not invoked.

2.2.13.2 Disposal of waste from dairies

There are 106 dairies operating in the State, which do not have effluent treatment facilities. These dairies discharge their effluents into drains, agricultural land, open *nallas* and gutters and they ultimately reach the water bodies nearby (**Appendix 2.2.2**). These dairies were discharging (as of May 2011) around 10 MLD of effluents into the water bodies. MPCB issued show-cause notices in six cases, proposed directions in five cases, interim directions in one case and closure directions⁶⁶ to one of these polluting dairies. In respect of the remaining 93 dairies, action was still to be initiated (March 2010). Discharge of untreated effluents from dairies would result in increase in harmful microbes affecting the water quality of the receiving water bodies.

MPCB stated (October 2011) that now there were only 31 defaulting dairies against which action had already been initiated by them.

⁶⁵ Section 41: Failure to comply with directions under sub-section (2) or sub-section (3) of section 20, or orders issued under clause (c) of sub-section (1) of 32 or directions issued under sub-section (2) of section 33 or section 33A, Section 42: Penalty for certain acts, Section 43: Penalty for contravention of section 24 and Section 44: Penalty for contravention of section 25 or section 26

⁶⁶ The final direction issued to close down an industry

2.2.13.3 Pollution caused by cattle sheds

MPCB issued (February 2001) guidelines for prevention of pollution caused by cattle sheds. MPCB had also laid down guidelines for location of cattle sheds. The total number of cattle sheds existing in the State was not available with MPCB. The waste water generated due to washing, leaching *etc.* in the cattle sheds, found its way into nearby *nallas*, ultimately meeting either a water body or into the drainage system provided by municipal corporations for the disposal of routine domestic liquid waste.

As stated by the respective municipal corporations, there were 167 cattle sheds with 6,153 cattle in Kalyan-Dombivli, 1,150 cattle sheds with 8,000 cattle in Nagpur and 69 cattle sheds with 1,532 cattle in Navi Mumbai located in corporation areas. Though these cattle sheds had a number of buffalos and other animals which generated huge quantities of waste, there were no arrangements for collection of the waste dung, liquid wastes *etc.*, and storage thereof until disposed off. Though guidelines provided for locations of cattle sheds, no survey to locate all cattle sheds in the State was done by MPCB.

The RO, Aurangabad stated (April 2011) that large cattle sheds having more than 10 animals were not present in Aurangabad. RO, Kalyan was in the process of shifting these cattle sheds outside the corporation areas and the other ROs stated that they had not conducted any such survey. RO, Kalyan stated (March 2011) that due to a financial crunch, the Kalyan Municipal Corporation could not acquire land for shifting of cattle sheds. He had requested the Collector, Thane to provide land free of cost. RO, Navi Mumbai did not offer any specific reply to the audit observations and stated (October 2011) that licences to cattle sheds were issued by the District Dairy Development Officers.

2.2.13.4 Issue of consents to Railway Workshops

Central Railways has workshops in Maharashtra, located at Matunga, Manmad, Bhusawal, Parel, Khurduwadi, Byculla and Nashik Road. These workshops use chemicals for their water-cooling systems. The water from the workshops is discharged into local drains. Since the waste water contains high levels of oil and grease, these pollutants should be removed from the water before discharge to the water bodies through non-point sources. However, it was seen in audit that this was not being done. The Railway workshops should have obtained consents from MPCB for carrying out their activities. It was observed that only two workshops *i.e.*, Central Railway, Matunga and Central Railway, Locomotive Workshop, Parel which repair and maintain coaches and locomotives had obtained consents to operate from MPCB.

MPCB replied (July 2010) that out of seven, two workshops (Lower Parel and Bhusawal) had applied (July 2010) for consent. The workshop at Bhusawal had a valid consent up to 30 August 1992 only. The fact remains that MPCB had failed to take action and issue directions in pursuance of Section 5 of the Environment Protection Act.

2.2.13.5 Environmental problems in religious places

MPCB, in its 139th Meeting held in January 2004, considered that the environmental problems in religious places were serious and decided to

implement a project on environmental improvement of religious places. For this purpose, MPCB engaged (July 2010) the services of a consultant⁶⁷ viz. WSAPL to carry out a detailed assessment of the environmental problems and infrastructure needs in Alandi, Shirdi and Shani-Shingnapur and prepare a technical project report in line with the guidelines of the ECO-City project being implemented by CPCB.

MPCB stated (September 2011) that in respect of Shirdi and Shani-Shingnapur, a concept plan had been prepared and handed over to the concerned District Collector and religious institution for implementation and in respect of Alandi, an MoU had been entered into on 19 April 2008 between the District Collector, Pune, the Alandi Municipal Council and MPCB for a total project cost of ₹ 2.8 crore and an amount of ₹ 10 lakh had been released by MPCB to the Collector, Pune. However, implementation of the project on environmental improvement of religious places was still to be initiated (October 2011). This reflected the apathy of the district administration towards improvement of the environmental quality around these important religious places.

2.2.14 National River Conservation Programme

The Krishna, Godavari and Tapi rivers had been selected for pollution abatement projects under the National River Conservation Programme (NRCP). The physical and financial progress of the projects are given in **Table 4:**

Table 4: Status of implementation of NRCP

River/city	Name of the project	Sanctioned cost (₹ crore)	Actual cost (₹ crore)	Sanctioned date of completion	Actual project end date	Reasons for delay in completion
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Krishna/ Karad	STP	0.55	0.86	June 2002	December 2006	Change in the type of work
	I&D ⁶⁸	2.64	2.28	June 2002	December 2006	Change in the type of work
Godavari/ Nashik	I&D	31.46	29.69	March 2003	July 2006	Abandonment of work by the contractor and completion by Nashik Municipal Corporation (NMC) by engaging another agency.
	STP 78 mld at Tapovan	20.82	20.90	March 2003	April 2004	Not available
	STP 22 mld at Chehdi	6.89	6.89	March 2003	June 2007	Land acquisition, change in design, increase in the span of rainy seasons etc.

⁶⁷ Wilbur Smith Associates Pvt. Ltd.

⁶⁸ Interception and Diversion is intercepting nallas and diverting them towards STP so that waste water gets treated before meeting any water body.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Krishna/ Sangli	I&D	30.22	21.31	March 2007	Not completed	Litigation and stoppage of work due to opposition from villagers
	STP	4.49	3.3	August 2004	Not completed	No information
Godavari/ Nanded	STP	2.77	2.44	June 2005	Completed June 2006	Land litigation, rainy season, shifting of High Tension power line of M.S.E.B., obtaining approval of revised cost estimate (RCE) <i>etc.</i>
	I & D	9.94	9.92	June 2005	Commis- sioned - June 2006	Land litigation, heavy rainfall, delay in obtaining approval of Revised Cost Estimate <i>etc.</i>

Due to non-completion of the works at Sangli, untreated sewage water (around 27 MLD) was being discharged into the Krishna river. Though the work at Nasik was complete, 110-120 MLD of untreated sewage was being discharged into the Godavari river due to insufficient capacity of the STP. At Nanded, the work of I&D and the STP had been completed but not commissioned, and hence, the entire untreated sewage/waste water (60 MLD) was being directly discharged into the Godavari river.

In the exit conference the Secretary, Environment Department stated (September 2011) that the I&D work at Sangli was not completed due to opposition of villagers. However, the matter had now been sorted out and the work of realignment was in progress. While accepting the under-utilisation of the STP at Chehedi due to the inadequate sewage network, it was stated that the work of additional sewage network (upto the year 2041) had been taken up under JNNURM, which was still in progress. In respect of the Nanded Waghala City Municipal Corporation (NWC MC) it was stated that 87 MLD STP under JNNURM was under construction and after completion, the sewage generated would be treated and disposed off safely.

2.2.15 Water bodies in Maharashtra

An approximate 49 *per cent* of the area of four river basins *i.e.*, Krishna, Godavari, Tapi and Narmada, consisting of 43 *per cent* of the population of the area around these basins were considered by the Maharashtra Water Resources Regulatory Authority as deficit or highly deficit with regard to water availability. The sizes of these deficit areas was likely to increase steadily with the increasing population and economic growth in the years to come. There were 380 rivers in the State and their total length was 19,269 km. Further, there were 117 lakes in Maharashtra. The State had a 720 km long coastline along the Arabian Sea.

The Groundwater Survey and Development Agency⁶⁹ delineated 1531 watersheds in 33 districts based on the geomorphology of the State. The total rechargeable fresh groundwater resources in the State were computed as 35.79

⁶⁹ An agency under Water Supply and Sanitation Department, GoM responsible for groundwater survey and monitoring.

billion cubic metre (BCM) and the net groundwater availability was 33.91 BCM. The deficiencies noticed in the quality of river water, coastal water and lakes are discussed below.

2.2.15.1 Maintenance of minimum river water flow

A study was conducted (June 2005-May 2010) by engineers of the Hydrology Project Circle (Collection), Nashik under the Water Resources Department, for analysis of surface water quality. It revealed that the Krishna basin was most critical as the percentage of sodium at 27 locations out of 33 was beyond the limit. Further, the National Water Policy 2002 (Clause 14.3) enunciated that a minimum flow of water should be ensured in perennial streams based on ecological and social considerations. However, there were no norms/guidelines prescribed by it for maintaining minimum water flow in the rivers/streams in Maharashtra State.

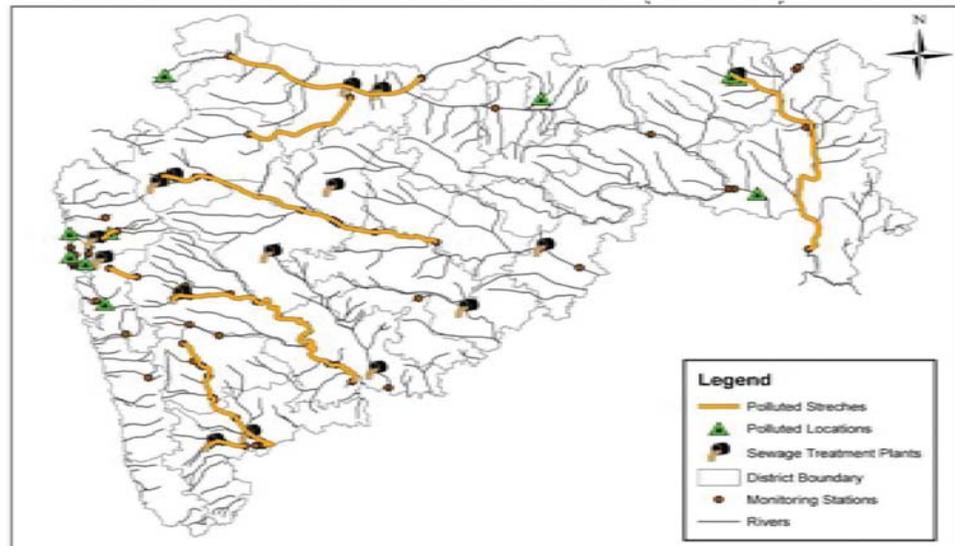
The Government stated (March 2011) that the issue of maintaining minimum flow of three TMC in Krishna river as per Krishna Water Disputes Tribunal order (December 2010) was being examined by the Technical Advisor appointed (February 2011) by the State Government. No such examination had been started in respect of the other rivers and streams.

2.2.15.2 Deteriorating water quality of rivers

Monitoring of water quality of rivers and lakes was taken up in the year 2000 by CPCB and MPCB. On the basis of results of analysis of data of seven years from 2000-06, 23 stretches (20 rivers and three creeks) were identified (July 2007) by the CPCB where the water quality did not fulfil the criteria of BOD. CPCB instructed (July 2007) MPCB to take immediate steps to prevent and control pollution in these identified stretches. CPCB further identified (October 2010⁷⁰) that the stretches of rivers not fulfilling the criteria had increased from 23 to 28 (**Appendix 2.2.3**). MPCB was directed by CPCB to inventorise all urban centers and industrial units discharging in the polluted stretches directly or through a tributary, streams and drains as it affects the public health and aquatic life. It was further instructed to take immediate steps to prevent and control pollution in the identified polluted stretches. It was however noticed that MPCB had not prepared any Action Plan for prevention and control of pollution as directed by CPCB. This was reflected by the deteriorating water quality of the rivers over a period of time.

Polluted river stretches had increased from 23 to 28 over the last few years

⁷⁰ vide DO Letter No. A-14011/1/2010-MON/83 dated 4 October 2010



Polluted river stretches in Maharashtra

The details of polluted river stretches in five (there are no polluted stretches in Navi Mumbai) out of the six test-checked ROs of MPCB are given in **Table 7**.

Table 7: Polluted river stretches in test-checked ROs

Sr. No.	Selected ROs	No. of polluted stretches	Rivers	Location of Stretch	No. of monitoring locations	Permissible limits of BOD	Actual BOD
1	Kalyan	3	Ulhas	Badlapur	1	3 mg/L or less	>6 mg/L
				Mohane	2		
			Kalu	Atale village	1		
2	Nashik	3	Godavari	Nasik Down stream to Paithan	12		
				Tapi	Madhya Pradesh border to Bhusaval		
3	and Auragabad	3	Girna		Malegaon to Jalgaon	2	
			4	Kolhapur	3	Krishna	Dhom dam to Kolhapur
Panchganga	Kolhapur	1					
5	Nagpur	4	Kanhan	Down stream Nagpur	3		
				Wainganga	Down stream Ashti	6	
				Wardha	Rajura village	3	
				Kolar	Kamptee	1	
Total		13			40		

MPCB stated (September 2011) that the list of polluted stretches was communicated by the Environment Department to the Urban Development Department for giving priority to taking up of environmental infrastructural projects like sewage treatment plants in these identified locations. The list had also been shared with the Department of Water Supply & Sanitation, so that the towns on the banks of these rivers could be taken up on priority for

sanitation programmes. In the exit conference the Secretary, Environment Department stated (September 2011) that increase in the number of polluted stretches was due to increase in domestic sewage discharged into the rivers and due to inclusion of the Mithi river in the survey.

Non-preparation of an Action Plan by MPCB for prevention and control of pollution resulted in the deterioration of water quality of rivers over a period of years.

2.2.15.3 Coastal water quality

On 7 August 2010 and 4 August 2011, Maharashtra had witnessed two major mishaps along the coastline, during which ships containing huge volumes of oil, hazardous waste *etc.* had collided causing major oil spills along the coastal areas of western Maharashtra. These incidents had adversely affected the coastal water quality and sea life along the coast. In a study conducted (February 2007 and February 2008) by the National Environmental Engineering Research Institute (NEERI) it was pointed out that untreated sewage from human population, effluents from industries and oil and grease spills had adversely affected the coastal waters at Thane Bassein and Mahim creek.

MPCB had engaged (2007-08) the National Institute of Oceanography (NIO), for conducting a study of the coastal marine and estuarine ecology of Maharashtra. NIO conducted a pre- monsoon study (February to May 2007) and a post- monsoon study (October 2007 to February 2008) and submitted its report (2008) to MPCB.

The study revealed that the water along the northern coast of the State was deteriorating due to reasons such as high level of BOD, influx from domestic and industrial effluents *etc.* The study also revealed the deteriorating water quality at Manori, Versova, Thane creek, Patalganga estuary *etc.* Accordingly, NIO recommended (December 2009) the monitoring of estuaries for bacterial counts, water quality (dissolved oxygen, BOD, nutrients *etc.*) and maintaining of a clean and healthy creek/estuary ecosystem along coastal Maharashtra. However, these recommendations had not been implemented by MPCB.

MPCB stated (July 2010) that these recommendations were circulated to the concerned offices and departments for developing action plans and taking corrective measures. However, it was found that no further action had been taken by MPCB.

Delay in implementing the recommendations of NIO would result in further deterioration of coastal water quality.

2.2.15.4 Inadequate monitoring of lake water quality

As per the “Uniform protocol for monitoring of water quality” prescribed by MoEF, the frequency of monitoring of lakes should be four times a year. Test check of records of six ROs revealed that MPCB had not monitored the water quality as detailed below:

- There were 21 lakes in the Navi Mumbai region. It was observed that the RO, Navi Mumbai had been monitoring the water quality of only three lakes (Belapur, Nerul and Airoli) once in a year.

Recommendations of NIO in relation to deteriorating coastal water quality were not implemented in the State

In the test-checked ROs, monitoring of lake water quality by MPCB was inadequate

- There were nine lakes⁷¹ in the jurisdiction of Kalyan-Dombivali Municipal Corporation (KDMC). The RO, Kalyan had not monitored the water quality of any of these lakes.
- Kolhapur region had seven lakes⁷². The RO, Kolhapur had been regularly monitoring the water quality in respect of Rankala lake only.

RO, Navi Mumbai stated (March 2011) that monitoring of all lakes could not be done due to manpower constraints. RO, Kalyan stated (March 2011) that since the lakes were not a drinking water source hence the same were not monitored. RO, Kolhapur stated (December 2010) that monitoring of other lakes was conducted only on receipt of complaints.

Due to non-monitoring of these lakes pollution identification and further planning, programming for pollution abatement was likely to have been affected.

2.2.16 Effects of water pollution

Shortfalls in effluent treatment in STPs, CETPs and ETPs in the State have been discussed in the above paragraphs. Poor treatment of effluents before finally discharging them into *nallahs* and rivers adversely affects public health in the State. Polluted water causes water-borne diseases. Incidence of such diseases and deaths due to these diseases increased in the State during the period from 2006-07 to 2010-11 as given in **Table 8**.

There was a substantial increase in the number of water-borne diseases in the State during 2006-11

Table 8: Incidence of diseases and deaths due to these diseases

Year	Gastroenteritis		Diarrhoea		Hepatitis		Typhoid		Total	
	Attacks	Deaths	Attacks	Deaths	Attacks	Deaths	Attacks	Deaths	Attacks	Deaths
2006-07	52844	58	221946	6	5202	0	33770	0	313762	64
2007-08	228118	202	1593175	14	17086	16	82134	0	1920513	232
2008-09	174436	62	1777396	6	9824	2	87822	0	2022778	70
2009-10	223007	106	1524936	25	8333	2	112275	14	1868551	147
2010-11	237502	75	1759108	19	8715	41	118243	0	2123568	135

Source: Information furnished by Public Health Department, Government of Maharashtra

As may be seen from the above table, the number of water-borne diseases increased from 3.14 lakh in 2006-07 to 21.24 lakh in 2010-11. This indicated the failure of the authorities in controlling water pollution.

2.2.17 Monitoring

2.2.17.1 Non-monitoring of Environmental Audit Reports of industries

As per Rule 14 of the Environment (Protection) Rules, 1986, every person carrying on an industry, operation or process requiring consent under Section

⁷¹ Adharwadi, Bhatale, Chole, Gauripada, Kalatalav, Rahatale, Sapad, Titwala and Umbarde

⁷² Jaisingrao lake, Kalamba lake, Laxmi lake, Rankala lake, Rajaram lake, Sarpirajirao lake and Vadgaon lake

25 of the Water (Prevention and Control of Pollution) Act, 1974 or under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 or both or Authorization under Hazardous Wastes (Management and Handling) Rules, 1989 issued under the Environment (Protection) Act, 1986 was to submit an Environmental Audit Report (EAR) for the financial years ending 31 March in Form V to the State Pollution Control Board (MPCB) on or before 30 September of every year beginning from 1993. All the industries were required to submit EARs as per the Rule.

The total number of industries, category-wise, as per the Annual Report for the year 2009-10 in respect of the test-checked ROs' offices is detailed in **Table 9**.

Table 9: Category-wise details of industries in test-checked ROs

Category	Number of industries					
	Aurangabad	Nashik	Navi Mumbai	Kalyan	Kolhapur	Nagpur
Red ⁷³	938	2708	917	1392	1575	1074
Orange ⁷⁴	2041	2630	486	410	1617	2294
Green ⁷⁵	4952	9980	1477	1874	1174	3616
Total	7931	15318	2880	3676	4366	6984

Audit scrutiny of the test-checked ROs revealed that all the industries had not submitted their EARs as required under rules.

In reply, the ROs of Nashik, Kalyan, Navi-Mumbai and Aurangabad stated (March-April 2011) that Red category industries of large and medium scale were submitting their EARs. RO, Nagpur stated (April 2011) that during 2010-11, only 50 industries had submitted EARs and RO, Kolhapur replied (March 2011) that industries were submitting their EARs directly to the MPCB office online. MPCB stated (September 2011) that it had issued (April 2011) a circular to all ROs to ensure submission of EARs by all industries and also stated that as on 15 September 2011, only 85 out of 72762 industries had submitted online EARs. In the absence of EARs, MPCB would not be able to correctly assess the pollution load of industries, adequacy of the treatment facilities and compliance of the consent conditions.

2.2.17.2 Non-adherence to sampling norms

MPCB prescribed (May 1999) that each field officer under the charge of RO should collect 13 samples of air emissions and seven environmental samples per month for analysis in the Regional laboratories. He was to also collect 20 samples in the presence of industrial representatives for checking.

Scrutiny of statistical reports of the test-checked ROs for the quarter ending December 2010 revealed that there were shortfalls ranging from 16.83 to 52.51 per cent⁷⁶ in collection of the samples.

MPCB had not adhered to its own sampling norms

⁷³ Highly polluting industries

⁷⁴ Moderately polluting industries

⁷⁵ Least polluting industries

⁷⁶ RO, Aurangabad – 49.36, RO, Kalyan – 33.96, RO, Kolhapur – 19.09, RO, Nagpur – 16.83, RO, Nasik – 52.51 and RO, Navi Mumbai – 31.89.

Due to inadequate collection and analysis of samples from industries, MPCB and the industries would be deprived of the knowledge regarding the composition and quantity of pollutants and therefore, would not be able to take effective remedial action.

In the exit conference the Water Pollution Abatement Engineer (WPAE), MPCB stated (September 2011) that as of now, 107 posts of field officers had been filled up and henceforth, there would not be any shortfalls in sample collection.

2.2.17.3 Integrated Management Information System (IMIS)

Implementation of IMIS

MPCB decided (March 2007) to develop, an Integrated Management Information System (IMIS), which included development of an enterprise solution of MPCB's multi-disciplinary functions through 10 modules⁷⁷. The work was expected to be completed by December 2008. However, it was observed that IMIS was commissioned (April 2010) in all Regional offices but was still to be implemented in 15 stand-alone sub-regional offices (SROs)⁷⁸ (May 2011).

Laboratory Information Management System

The main feature of the system was to integrate laboratory functions, such as receipt and testing of various types (waste water, industrial effluents, hazardous wastes *etc.*) of samples and providing results of analysis online to all the offices of MPCB. It was initially rolled out at the Central Laboratory at Mhape, Navi Mumbai, and Regional Laboratories at Aurangabad and Pune. MPCB rolled out (January 2010) Laboratory Information Management System (LIMS) modules⁷⁹ at other locations⁸⁰. Scrutiny (May 2011) revealed that:

IMIS introduced by MPCB to systemise laboratory management activities did not yield the desired results

- i. At a time, only 10 users could log in and use the software and access was denied to other users unless at least one of the earlier users logged out. Therefore, there were substantial delays in testing samples collected by MPCB to assess pollution levels. Thus the objective of collecting the samples by MPCB could not be achieved. MPCB stated (May 2011) that the requirement of LIMS was being reviewed.
- ii. It was seen that as of May 2011, the LIMS module was being used only for watching the receipt of consent applications from the industry. Digitization of industries was not completed by all the RO offices and only the Red category and Orange category industries had been entered into the system. Further the master register maintained manually by

⁷⁷ File tracking system, Complaint Management, Consent Management, Authorisation Management, Waste Management, Cess Management, Human Resources, Asset and Stores, Legal and Laboratory Information Management System

⁷⁸ SRO Tarapur, SRO Taloja, SRO Mahad, SRO Satara, SRO Solapur, SRO Jalgaon, SRO Ahmednagar, SRO Latur, SRO Parbhani, SRO Nanded, SRO Bhandara, SRO Akola, SRO Sangli, SRO Ratnagiri and SRO Chiplun.

⁷⁹ A web-based technology available to ROs and laboratory on Virtual Private Network

⁸⁰ Aurangabad (Nanded, Parbhani and Latur), Kalyan, Navi Mumbai, Raigad; RO, Mumbai, Pune (including Solapur and Satara) and Thane.

ROs' was also not updated. As a result, MPCB could not take any action against the industries, which did not renew their consents in time. Though LIMS was implemented in January 2010, the delay in issue of consent applications was still persisting (May 2011). MPCB stated that the project was expected to be rolled out by December 2011.

Thus, the objectives envisaged by the Board were not achieved. MPCB stated (May 2011) that Green category industries were being digitized.

In the exit conference the Secretary, Environment Department stated (September 2011) that this issue has now been sorted out and would be implemented in the second phase.

2.2.17.4 Board meetings

Section 8 of the Water Act required that MPCB should meet at least once in three months to discuss the status of implementation of various rules, regulations and other administrative purposes. The members of the Board comprised Secretaries from the Environment, Urban Development, Industries, Water Supply and Sanitation and Public Health departments, the CEO of Maharashtra Industrial Development Corporation *etc.*

It was observed that only eight meetings were held during 2005-06 to 2009-10 as against 20 meetings required to be held. In seven out of the eight meetings held, the required quorum was not met as a result of which representation from all the concerned departments were not ensured.

MPCB stated (March 2010) that the required number of meetings were not held as the Board had not been fully constituted in 2005-06. Other reasons included the election, code of conduct, deputation of the Member Secretary for election duty and transfers of Member Secretaries.

Shortage in Board meetings held indicated laxity on the part of MPCB to monitor implementation of various rules and regulations

2.2.18 Conclusion

Maharashtra Pollution Control Board had not formulated any framework to identify the sources contributing to water pollution in the State. There were substantial delays at its level in finalization of applications received for grant or renewal of consents. In the jurisdiction of the test-checked regional offices, a majority of urban local bodies were found to be discharging domestic effluents into water bodies without treatment. Existing Common Effluent Treatment Plants and Effluent Treatment Plants were found to be inadequate to treat industrial effluents. Consented standards in respect of treated effluents were also not maintained by the Common Effluent Treatment Plants and Effluent Treatment Plants. Though polluted river stretches in the State had increased from 23 to 28 during the last eight years, Maharashtra Pollution Control Board had not taken any action to prevent further deterioration. Assessment of lake water quality by Maharashtra Pollution Control Board was found to be inadequate. Increase in water-borne diseases in the State during 2006-11 substantiated the diminishing standards in potable water. Maharashtra Pollution Control Board had not adhered to its own norms prescribed for

collection of samples from industries to monitor pollution levels. The Integrated Management Information System introduced by Maharashtra Pollution Control Board with a view to systematize pollution control functions did not yield the desired results. The deficiencies in the implementation of Acts and Rules for water pollution control had not only affected the health of human beings but also the environment.

2.2.19 Recommendations

- The Government may ensure that applications received from local bodies and industries for grant and renewal of consents are dealt with within the prescribed time limit, through a specific monitoring mechanism for this purpose.
- The Government may fix minimum flow of water in each river and strictly implement it for ecological conservation of aquatic flora and fauna.
- Maharashtra Pollution Control Board may chalk out a time-bound Action Plan to implement the recommendations of the Central Pollution Control Board in relation to the increasing number of polluted river stretches.
- Maharashtra Pollution Control Board may strictly follow the uniform protocol for monitoring of water quality prescribed by Ministry of Environment and Forests.
- Maharashtra Pollution Control Board may strictly adhere to its sample collection and testing norms to ensure that pollution levels are within the limits.

The matter was referred to the Government (August 2011). Reply had not been received (October 2011).

Water Resources Department

2.3 Working of Vidarbha Irrigation Development Corporation for creation and utilization of irrigation potential

Highlights

Government established the Vidarbha Irrigation Development Corporation (VIDC) in 1997 under the VIDC Act. It started functioning since April 1997. Besides transfer of 10 ongoing projects from the Government in Irrigation Department in 1997, 86 new projects were transferred in 1998, 141 in 2007 and 83 in 2008 totalling 320 projects, of which only 58 projects were nearly completed as of March 2011. A review of the working of VIDC for the period 2006-2011 revealed poor progress in execution of projects, land acquisition and rehabilitation of project-affected persons, resulting in delays and stoppage of works, huge cost overruns and defective execution of projects.

Limited resources were thinly spread over too many projects by VIDC contrary to the recommendations of the High Power Committee. In some cases, the department released funds in excess of the administrative approvals for the projects.

There were shortfalls in creation and utilisation of irrigation potential (IP). Against the targeted IP of 15.74 lakh hectare, IP of only 3.82 lakh hectare at a cost of ₹11732 crore was created and only 26000 hectare was utilised as of March 2011.

Monitoring of the projects by the Governing Council and Executive Committee was inadequate. Water Users Associations were either not formed or not registered.

Some important findings of the performance review are given below:-

Due to execution of projects in disregard of the recommendations of the High Power Committee, most of the projects remained incomplete

(Paragraph 2.3.5.2)

Improper planning and change in design resulted in time overruns with consequent cost overruns of ₹ 7,126.52 crore as of March 2011 in 49 projects entrusted in 1997-99.

(Paragraph 2.3.7.1)

In 37 projects, forest clearances were not obtained from the Government of India, which resulted in blocking of ₹ 1,161.60 crore, besides non-creation of IP of 4.78 lakh hectares.

(Paragraph 2.3.7.2)

Under the Prime Minister's Special Rehabilitation Package, in respect of 12 out of 27 selected projects, the distribution network including canal works and field channel works were not started with the result that the objective of the PM's package of mitigating the distress of farmers was not achieved.

(Paragraph 2.3.7.3)

Change in the plan for construction of a cement concrete main canal to an earthen canal and again to a cement concrete canal resulted in avoidable wasteful expenditure ₹ 54.37 crore.

(Paragraph 2.3.7.5)

Allotment of new work without calling for fresh tenders resulted in extra cost of ₹ 5.52 crore.

(Paragraph 2.3.7.6)

To create additional IP in the command area of the Wan Irrigation Project, 119 tubewells installed with submersible pumps at the cost of ₹ 4.96 crore between March 2008 and April 2009 could not be operated for want of power supply.

(Paragraph 2.3.7.8)

2.3.1 Introduction

The Vidarbha region of Maharashtra comprising 11 districts and spread over 97.43 lakh hectares (ha) is deficient in rainfall. Due to the scanty rainfall in the area, the agrarian economy of the region, which is mostly dependent upon rainfall, is quite volatile. In order to boost the agrarian economy, the Government initially launched 10 irrigation projects in the region to augment the scanty rainfall and provide assured availability of water round the year. Dams and canals were the main components of the irrigation system.

In March 1997, the Government estimated that the cost of the 10⁸¹ ongoing irrigation projects would be ₹ 4,430 crore and that the cost of the future projects would be ₹ 9,631 crore. However, the Government could provide ₹ 200 to ₹ 300 crore per year through budget, and it would take 15 years to complete them. As per the targets set, these projects were to be completed within five years. Therefore, in order to expedite the completion of the ongoing projects in time, a provision of ₹ 3,800 crore was required in the next five years. The Government felt that for completion of these 10 ongoing projects to create irrigation potential of 5.89 lakh ha, the budgetary support would have to be supplemented through open market borrowings. Accordingly, the Government established the Vidarbha Irrigation Development Corporation (VIDC) in 1997, under the Vidarbha Irrigation Development Corporation Act (the Act). The 10 ongoing projects were transferred (1997) to the Corporation. Eighty six new projects were transferred in 1998, 141 in 2007 and 83 in 2008 to it totalling 320 projects as of 2009.

The Vidarbha region consists of the districts of Akola, Amravati, Bhandara, Buldhana, Chandrapur, Gadchiroli, Gondia, Nagpur, Washim, Wardha and Yeotmal and has two river basins, *i.e.* the Godavari and Tapi river basin. The total cultivable command area of the region is 57.03 lakh hectares (ha) with an estimated irrigation potential of 22 lakh ha. Prior to the formation of VIDC (1997), the Government had created irrigation potential of seven lakh ha in the region.

⁸¹ Gosikhurd, Human, Bembla, Wan, Khadakpurna, Tultuli, Upper Wardha, Lower Wenna, Lower Wardha, Dhapewada Stage-1

VIDC had created irrigation potential and water storage of 3.82 lakh ha and 87.40 thousand million cubic meters (TMC) at a cost of ₹ 11,732 crore as against the target of 15.74 lakh ha and 273.15 TMC respectively (March 2011). However, the irrigation potential was utilized to the extent of only 25,977 ha and potential to the extent of 3.56 lakh ha remained to be utilized due to non-completion of work below outlets such as canals and distributory networks. The deficiencies noticed in audit in creation and utilization of irrigation potential have been discussed in succeeding paragraphs.

2.3.1.1 Objective of the Vidarbha Irrigation Development Corporation

The main objective for the establishment of VIDC was to make special provisions for mobilization of resources required for completion, promotion and operation of the ongoing irrigation projects in a time-bound manner and to achieve the total irrigation potential of 15.74 lakh ha in the region through 320 projects. The stipulated period for completion for the first 10 projects was initially decided to be five years but subsequently, after 86 projects were transferred in 1998, the completion of all these projects was targeted for 2007. The years of completion of the remaining 224 projects transferred in 2007-09, was not specified. by the Government.

2.3.1.2 Organizational set-up

The Governing Council of VIDC is headed by the Minister for Water Resources Department (WRD) as the ex-officio Chairman. The Minister of State for WRD and the Chief Secretary are the ex-officio Vice-Chairmen. The Secretary, WRD is the ex-officio Managing Director (MD) supported by the Executive Director (ED) who acts as the Member-Secretary of the Executive Committee (EC). The EC functions under the chairmanship of the MD, with the ED, Chief Engineers (CEs) of WRD and the Chief Accounts and Finance Officer (CAFO) of VIDC as members. Under the superintendence and control of the MD, the ED is responsible for the overall execution of the projects and is assisted by the members of the EC. There are four CEs, 13 Superintending Engineers (SEs), at the circle level and 57 Executive Engineers (EEs), at the divisional level. A chart indicating the organizational set-up is given in **Appendix 2.3.1.**

2.3.2 Audit Scope and Methodology

A performance audit of VIDC was conducted during April and July, 2011 covering the period from 2006-07 to 2010-11. Records of the ED and two CEs were test-checked. Out of 320 projects with VIDC, only 94 had expenditure of more than ₹ 10 crore each as of March 2011. Out of these 94 projects, 27 were selected (**Appendix 2.3.2**) on simple random sampling basis. The audit objectives and audit criteria adopted for the performance audit were discussed with the Principal Secretary, WRD in the entry conference held on 9 June 2011. The audit findings were discussed with the Principal Secretary, WRD during the exit conference held in Mumbai on 9 November 2011. The responses of the Government to the observations of Audit have been included in the Report.

2.3.3 Audit Objectives

The audit objectives were to assess whether:

- the planning process for irrigation projects was effective;
- the fund raising activities and financial management were efficient;
- implementation of the irrigation projects was economical, efficient and effective;
- an effective monitoring mechanism and a proper internal control system were in place.

2.3.4 Audit Criteria

The audit criteria adopted for conducting the performance audit were:

- Vidarbha Irrigation Development Corporation Act, 1997;
- Government Resolutions and Orders issued from time to time;
- Guidelines for the funding pattern;
- Maharashtra Public Works (MPW) Account Code and MPW Manual; and,
- Guidelines for compensation to project-affected persons, acquisition of land *etc.*

Audit Findings

2.3.5 Planning

The deficiencies noticed during audit of the planning process have been discussed in the succeeding paragraphs.

2.3.5.1 Non-formulation of plan

VIDC was established to expedite completion of ongoing irrigation projects in the region, to increase agriculture production in the area and improve the living standards of the local people. The completion of these projects would also facilitate hydro-electric power generation and allied benefits such as tourism, fisheries, sports, and industries. As per the VIDC Act, annual plans and five-year development plans were to be prepared to achieve the predetermined objectives.

It was noticed that VIDC had published (March 1997) its first plan to complete 10 ongoing projects within a period of five years in the bonds offer document⁸² in 1997. Its second plan to complete 96 projects (the 10 ongoing and 86 newly transferred to VIDC) comprising major, medium and minor projects within a period of eight years, was published in the bonds offer documents in 1999. However, VIDC could not complete any of the projects as of 2006. Thereafter, a plan indicating the total outlay required for completion of 82 projects within a stipulated period of three years was prepared by it

VIDC did not plan for speedy completion of projects

⁸² Secured non-convertible redeemable bonds offered by VIDC to raise funds

under the Prime Minister's package⁸³. The Corporation failed to achieve the projected irrigation potential and other allied benefits from any of the projects assigned to them as they were not executed efficiently, as discussed in the succeeding paragraphs.

2.3.5.2 Non-adherence to the recommendations of the High Power Committee on planning

Due to execution of projects in disregard of the HPC recommendation, most of the projects remained incomplete

A High Power Committee (HPC) headed by the Secretary, Planning Department was set up (November 2001) to review the status of irrigation projects across the State. The HPC recommended (November 2001) prioritization of allocation of funds to the projects in order to expedite their completion in the following manner:

- Projects on which expenditure incurred was 75 per cent or more of the project cost were to be completed first.
- Projects on which 50 to 75 per cent expenditure was incurred were to be taken up next so that the remaining works could be completed within the stipulated period.
- Projects on which expenditure incurred was less than 50 per cent were to be stopped.

The erstwhile Irrigation Department (now Water Resources Department) accepted the recommendations and issued instructions (January 2002) for planning and executing the projects accordingly.

Details of the projects with progress of financial expenditure of less than 50 per cent, more than 50 per cent but less than 75 per cent and above 75 per cent are given in **Table 1**.

Table 1: Expenditure incurred on projects

Percentage of expenditure incurred on individual projects (2002-03)	Number of projects			
	Major	Medium	Minor	Total
75 per cent and above	04	12	29	45
50 to 75 per cent	01	06	07	14
Less than 50 per cent	09	09	19	37
Total	14	27	55	96

Source:-Status Report of VIDC (March 2011)

Scrutiny (April 2011) of records of VIDC revealed that the balance cost of 45 projects having financial progress of expenditure of above 75 per cent was ₹ 401.75 crore as of 2002-03 as detailed in **Appendix 2.3.3**. Disregarding the HPC's recommendation, VIDC allocated the available funds to all the 96 ongoing projects. An expenditure of ₹ 418.35 crore, was incurred during 2003-04 to 2004-05 on 37 projects having financial progress of expenditure of less than 50 per cent. As a result, VIDC could not complete these 45 projects by 2004-05, resulting in non-availability of the benefits to the farmers. Out of

⁸³ The Prime Minister's package was announced in July 2006 for assured irrigation facilities to distressed farmers in Maharashtra.

these 45 projects, only 10 had been completed by March 2011 at a cost of ₹ 460.22 crore.

Government accepted (November 2011) that the recommendations of the HPC could not be strictly adhered to considering the Governor's directive for distribution of funds to various districts to remove the financial backlog in Vidarbha. The reply is not acceptable as the Governor's directive was of a general nature, for allocation of funds to the Vidarbha region to remove the financial backlog and not for allocation to any specific project. However, application of the funds should have been made as per the prioritization recommended by the HPC. Thus, the generalised distribution of funds without prioritization led to the incompleteness of projects, thus depriving beneficiaries of assured availability of water round the year.

2.3.5.3 Overburdening of works by handing over new projects to the Vidarbha Irrigation Development Corporation

Insufficient funds led to delay in progress of work

As stated earlier, initially 10 ongoing major projects estimated to cost ₹ 4,430 crore were transferred (April 1997) to VIDC for completion within five years. Thereafter, 86 more projects were transferred (November 1998). The updated cost of the 96 projects which were to be completed within eight years (by March 2007) as of April 1999 was ₹ 10,353 crore. Accordingly, the annual average requirement of VIDC was ₹ 1,294.12 crore. However, the annual average availability of funds with the VIDC during above period (1999-2007) was only ₹ 634.59 crore, which included a total contribution of ₹ 364.22 crore from the Government. Thus, there was an average annual shortfall of nearly ₹ 659.53 crore to complete the 96 projects within the stipulated period of eight years.

It was also observed that in spite of the poor financial status and inadequate physical progress of the projects (upto 42.02 per cent), the Government transferred further 224 projects estimated to cost ₹ 27,917.94 crore during 2007-08 and 2008-09 to VIDC. This resulted in over-burdening of the VIDC as 262 out of 320 projects remained incomplete as of March 2011.

The Government stated (November 2011) that the decision to transfer the projects was taken at the highest level and it did not affect the Corporation financially, as all the irrigation projects were funded through the Government.

The reply is not acceptable because there was an average annual shortfall of ₹ 659.53 crore to complete 96 projects within the stipulated period of eight years *i.e.* by 2006-07 as adequate funds were not received from the Government.

2.3.6 Financial Management

2.3.6.1 Funding Pattern

The main sources of funds of VIDC were the following:

- The State Government's contribution of ₹ 2,245 crore as share capital in suitable instalments over a period of 10 years.
- Borrowings from the open market by issue of bonds, debentures *etc.*

- Financial assistance released by Government of India (GOI) for 43 projects from 2003-04 under the Accelerated Irrigation Benefit Programme (AIBP).
- Funds released for 82 projects in six districts of Vidarbha under the PM's Package during 2006-07 to 2008-09 for mitigating distressed farmers.

2.3.6.2 Funds position

As against the annual contribution of ₹ 224.50 crore, as envisaged above, the Government contributed ₹ 52.58 crore per annum on an average during the initial period of six years. Besides this, no salary grant was contributed during 1997-98 to 2002-03 and in 2004-05, as a result of which VIDC had to bear an extra burden of ₹ 214.62 crore, which could otherwise have been utilized for completion of the ongoing projects.

The position of funds demanded by VIDC *vis-à-vis* funds provided by the Government and funds received from various sources against the demands and the expenditure incurred during 2006-07 to 2010-11 were as detailed in **Table 2** and **Table 3**.

Table 2: Funds demanded *vis-à-vis* received (₹ in crore)

Year	Demand	Receipts from State Government		Other Receipts	Total Receipts	Shortfall	Percentage Shortfall
		Works	Salary				
2006-07	1675.54	1179.79	55.46	20.92	1256.17	419.37	25.03
2007-08	2323.02	2209.00	79.35	18.32	2306.67	16.35	0.71
2008-09	3376.65	2923.52	100.81	19.42	3043.75	332.90	9.86
2009-10	4644.03	2951.73	141.13	18.20	3111.06	1532.97	33.00
2010-11	5213.10	2985.13	181.22	32.54	3198.89	2014.21	38.64
Total	17232.34	12249.17	557.97	109.40	12916.54	4315.80	

Source: Vidarbha Irrigation Development Corporation statement.
 Note: - other receipts include AIBP, fund, bank interest, water cess etc.

Out of ₹ 17232.34 crore demanded for execution of the projects, the Government had provided ₹ 12916.54 crore, against which ₹ 11731.98 crore was spent, leaving a balance of ₹ 1184.56 crore with an overall cumulative balance of ₹ 958.29 crore as of March 2011. The shortage of funds ranged from ₹ 16.35 crore to ₹ 2014.21 crore during 2006-07 to 2010-11, with the percentage shortfall being between 0.71 and 38.64 per cent.

Table 3: Funds received vis-à-vis expenditure (₹ in crore)

Year	Total Receipts	Expenditure		Total Expenditure	Closing balance	Cumulative balance
		Works	Salary			
2005-06						-226.27
2006-07	1256.17	1324.53	59.15	1383.68	(-)127.51	-353.78
2007-08	2306.67	2073.74	87.21	2160.95	(+)145.72	-208.06
2008-09	3043.75	3151.06	102.94	3254.00	(-)210.25	-418.31
2009-10	3111.06	2150.02	164.63	2314.65	(+)796.41	+378.10
2010-11	3198.89	2441.03	177.67	2618.70	(+)580.19	+958.29
Total	12916.54	11140.38	591.60	11731.98		

Source : Vidarbha Irrigation Development Corporation.
Note (+) indicates saving and (-) indicates excess.

Table 3 above indicated that there was a cumulative deficit balance of ₹ 226.27 crore. Further the expenditure incurred on works and salaries during 2006-07 and 2008-09 was more than the grants received by it during the respective years. As a result, the deficit increased to ₹ 418.31 crore by the year 2008-09. Thus, the budget provision was consistently low and insufficient to meet the expenditure incurred up to 2008-09. Thereafter, VIDC failed to utilise the funds received during the years 2009-10 and 2010-11, which finally resulted in an unspent balance of ₹ 958.29 crore at the end of the year 2010-2011, due to tardy implementation of projects.

Scrutiny of records revealed that :

- **Withdrawal of power to borrow money**

Scrutiny (April-June 2011) of records of the ED revealed that VIDC had raised ₹ 1678.99 crore during the period from 1996-97 to 2002-03 by issue of bonds on the basis of guarantees given by the Government. Thereafter, the power to borrow money was withdrawn by the Government and this power was entrusted to the Maharashtra Patbandhare Vittiya Company Limited (MPVCL) who stopped funding after allotment of ₹ 424.65 crore during 2003-04 to 2005-06. Due to stoppage of funds from MPVCL, Government had to provide (May 2007) funds through budgetary grants. Government however, did not give adequate funds, resulting in deficit funding from the year 1999-2000 to 2007-08. Despite provisions made in the VIDC Act, the powers to raise funds and to mobilise resources were not entrusted to VIDC and it became dependent on the State Government for funds to execute projects. This resulted in the slow progress of works due to shortage of funds.

- **Diversion of funds**

The area of operation of VIDC as notified by the Act is the Vidarbha region of Maharashtra. The balance sheet of VIDC for the year ending 31 March 2010 depicted that VIDC had given a loan of ₹ six crore to the Maharashtra Water Resources Regulatory Authority (MWRRA) during 2007-08, for purchase of land. Further, ₹ 267.93 crore was given to the Tapi Irrigation Development Corporation (TIDC) for the Kurha Wadoda Lift Irrigation Scheme (a project under TIDC) between 2007-08 and 2009-10. Both the loans were to be

Unnecessary inflation of allocation of funds.

adjusted against the submission of utilization certificates from MWRRA and TIDC. Thus, allotment of funds through VIDC to entities which were not part and parcel of VIDC had unnecessarily inflated the allocation of funds by the Government to it.

Government stated (November 2011) that the payment to MWRRA, Mumbai was made for purchase of land for construction of an office building from where monitoring work of the irrigation activities all over Maharashtra was to be undertaken. Since 54 *per cent* of the command area of the Kurha Wadoda project was situated in Buldana district, under the jurisdiction of VIDC, payment had been made to TIDC.

The reply is not acceptable as the Government could have allotted funds directly to the above organisations instead of routing it through VIDC.

2.3.7 Implementation of projects

2.3.7.1 Delay in execution of projects leading to cost overruns

VIDC had taken up projects without ensuring clear possession of land. As stated earlier, it did not also adhere to the HPC recommendation to undertake completion of advanced projects⁸⁴ on priority basis. It was further observed that in 16 out of 27 test-checked projects, the cost overrun was due to change in design by the Central Design Organisation, Nasik, after the issue of work orders for construction of the projects. Improper plannings and change in design resulted in time overruns with consequent cost overrun of ₹ 7126.52 crore as of March, 2011 against the original estimated cost of ₹ 5199.79 crore on 49 projects (10 major, 16 medium and 23 minor) entrusted in 1997 and 1998-99. The details of the projects are given in **Appendix 2.3.4**.

Government stated (November 2011) that the main reason for the cost overruns was delay in execution of projects which involved various factors such as ensuring clear possession of land, finalization of the design by design authorities, alignment of canals/distributory network and dams. In fact, the project construction activities and land acquisition process are taken up simultaneously so as to minimize the time period in statutory clearance and construction activities.

The reply is not acceptable because execution of work without prior acquisition of required land and approved design in contravention of the manual provisions result in delays, cost overruns and blocking of funds.

2.3.7.2 Commencement of work without obtaining forest clearance

The Vidarbha region covers 55.86 *per cent* of the forest area of the entire State. According to para 251 of Maharashtra Public Works Manual, no work should commence without acquisition of the entire land required for it. Further, as per the Forest Conservation Act 1980, prior approval of GOI for use of forest land for non-forest purpose, is mandatory. The Act also stipulated that, where the proposed work involved forest as well as non-forest land, work should not be commenced on the non-forest land, until the approval of GOI for release of the forest land was received.

⁸⁴ Ongoing projects with 75 *per cent* completion

It was observed from the status report of VIDC for the month ending March, 2011 that out of a total of 320 projects, work of 37 projects was held up due to non-receipt of forest clearances from GOI. In the meanwhile, an amount of ₹ 1,161.60 crore was spent on this work as of March 2011. Besides, this also resulted in non-creation of irrigation potential of 4.78 lakh ha (**Appendix 2.3.5**).

The Government stated (November 2011) that forest clearances of these projects were at different levels of sanctions and expenditure of ₹ 1161.64 crore was mainly on payment of net present value of the land and compensatory afforestation. Hence, it was not blocking of funds.

The reply is not acceptable as before the start of work on these projects, forest clearances should have been obtained.

2.3.7.3 Non-achievement of objectives under Prime Minister's package

GOI launched (July 2006) a Special Rehabilitation Package to mitigate the distress of farmers in six districts (Akola, Amravati, Buldana, Wardha, Washim and Yavatmal) of the Vidarbha Region, where the incidence of farmer's suicides was very high. The package, which was also called the Prime Minister's (PM's) package to be implemented over a period of three years for creation of assured irrigation facilities.

The VIDC prepared (July 2006) an action plan for completion of 82 projects within a period of three years for creation of irrigation potential of 144745 ha at an estimated cost of ₹ 2085 crore. However, out of 82 projects selected under PM's Package, the work was held up for want of land acquisition (16 projects), for forest clearances (two projects) and the problems of PAPs (four projects). It was further observed that the Corporation had spent ₹ 2500.01 crore during the planned period of three years but could not complete the remaining 60 projects and created irrigation potential of 115740 ha as of March 2009, which was 72.66 *per cent* of the targeted potential. It was further observed that the distribution system (canal works) had not been completed (less than 50 *per cent*) in respect of 28 out of 60 projects. The benefits of irrigation, therefore, did not reach the farmers of these 28 areas.

It was observed that out of 27 selected projects, 12 projects were selected under the Special Rehabilitation Package. It was further observed that in four⁸⁵ out of these 12 projects, the distribution network including canal work, field channel works (Part I) were not started. due to problems of PAPs. Thus, due to non-acquisition of land, forest clearance, non-rehabilitation of PAPs and non-completion of the projects already taken up within stipulated period of three years, the objective of the PM's package was not achieved and also resulted in cost overrun ₹ 415 crore upto March 2009, which further increased to ₹ 811.89 crore (November 2011).

2.3.7.4 Improper scheduling of work

The work of the head works of the earthen dam of the Jigaon project, estimated to cost ₹ 282.25 crore, was entrusted (November 2006) to a

⁸⁵ Goji, Kharda, Lower Pedhi, Pachpahur

Awarding of fabrication work without obtaining the land for dam work

company for completion within 60 months. The work could not be started due to non-acquisition of land for the dam seat. However, overlooking this fact, the work of fabrication and erection of spillway and radial gates estimated at ₹ 77.78 crore, was entrusted (November 2007) to another company, M/s S.S. Fabricators, Nagpur for completion within 60 months, the latter brought 2347 MT of steel to the work site (December 2008 to March 2010) for which part payment of ₹ 21.35 crore inclusive of price escalation of ₹ 2.25 crore, was made to the contractor. The work of the dam seat of the earthen dam could not be started even after the lapse of a considerable period of more than two and half years for want of land acquisition. The work of fabrication was also not started for want of an approved design from the Central Design Organisation (CDO), Nasik and the steel material brought to site remained unused.

Government stated (November 2011) that the environmental clearance and forest clearance was obtained in May 2007 and June 2008 respectively and works were commenced in November 2008.

The reply is not acceptable as the issue a of work order before acquisition of land was in contravention to the para 251 of the Manual which led to avoidable blocking of funds for the period for which work had not been started.

2.3.7.5 Inadequate project designs leading to wasteful expenditure

Out of 27 test-checked projects, it was observed that in 16 projects⁸⁶ the designs were changed during execution of the project work, resulting in cost overrun. Two such cases are discussed below:

- **Avoidable wasteful expenditure due to change in work design**

Change in plan for construction of cement concrete main canal to earthen canal and again to cement concrete canal resulted in avoidable wasteful expenditure of ₹ 54.37 crore

In respect of the Bembla project consisting of 126 km Main Canal in cement concrete (CC) lining, it was decided (August 2004) to construct an earthen canal instead of the originally considered cement concrete canal due to cost considerations. The length and bed width of the said canal was decided to be as 115 km and 19.90 m respectively. However, when the work was in progress, approval for re-conversion of the earthen canal to a cement concrete one was accorded (August 2009) by the Government, taking into consideration the water loss. The length and bed width of the canal was revised to 113 km and 16.50 m respectively.

Audit observed that while awarding the contract for construction of 113 km cement concrete canal with a width of 16.50 m to a company⁸⁷ (July 2009), VIDC had to pay ₹ 54.37 crore towards extra murum filling for reducing the bed width from 19.90 m (already excavated) to 16.50 m. Thus, the change in the plan for replacing the cement concrete main canal with an earthen canal and changing it back to cement concrete canal resulted in avoidable wasteful expenditure of ₹ 54.37 crore as of March 2011.

⁸⁶ Jigaon, Lower Pedhi, Bembla, Sapan, Uma Barrage, Sonapur Tomta, Bordinalla, Potharanalla, Lower Chulband, Dongargaon, Paknadi, Charghar, Kawarnalla, Popetkhed-II, Nagthan-II, Lower Charghar.

⁸⁷ M/s Metacaps Engineering, Mumbai

The Government stated (November 2011) that on the recommendation of the SE, a proposal for CC lining of the entire length of the main canal was considered and approved by VIDC. Due to black cotton soil in the region, murum filling behind the concrete lining was mandatory as per the requirement of the soil pressure.

The reply is not acceptable because the department should have ascertained the soil strata before execution of the lining work. Further, the execution of an unlined canal for entire length with larger width was subsequently covered by murum filling.

- **Execution of sub-standard work**

Decision to allot CC lining work without seeking approval of CDO, Nasik resulted in wasteful expenditure of ₹ 51.49 crore.

WRD, vide its circular dated 18 February 1995, issued guidelines for execution of canal works. As per the circular, a decision of providing lining in the entire length of canals passing through expansive soils was to be taken only after studying the performance of the lining executed in some kilometers (km) on an experimental basis. Before deciding to provide CC lining in such stretches, approval from the Central Designs Organization (CDO) was essential.

The work of construction of CC lining by mechanical paver and batching plant of the Gosikhurd Left Bank Main Canal (LBMC) in km 1 to 10 and 11 to 22.93 were awarded (January/August 2007) to two contractors at agreed costs of ₹ 16.08 crore and ₹ 20.25 crore, for completion within 24 months. The contractors were paid (August 2009) ₹ 25.80 crore and ₹ 25.69 crore respectively. However, the CC lining developed cracks within one to two years after completion of the works. On examination, the work was found (March 2010) to be sub-standard by the Maharashtra Engineering Research Institute, Nasik. Thus, the decision to allot CC lining work without seeking the approval of the CDO, Nasik resulted in wasteful expenditure of ₹ 51.49 crore.

The Government stated (November 2011) that rectification works had already been taken up at the risk and cost of the original contractor and his running account bills had been withheld by the department.

The reply is not acceptable as records indicating rectification work carried out by the same contractor were not shown to Audit inspite of specific request. Similarly, the running account bills of the contractor which were withheld for payment were also not furnished to Audit.

2.3.7.6 Extra cost due to irregular rejection of lowest offer

Attachment of work without calling for fresh tenders resulting in extra cost of ₹ 5.52 crore

In response to a tender invited (December 2007) for construction of a Cross Regulator (CR)-cum-escape of the Right Bank Main Canal of the Gosikhurd Project⁸⁸, the lowest offer received was ₹ 13.96 crore, which was 12.75 per cent above the estimated cost of ₹ 12.38 crore. The offer was cancelled (June 2008) by the CE, Gosikhurd Project on the plea that the bidder was not ready to negotiate his offer. Thereafter, instead of inviting fresh tenders, the work was attached (August 2009) under clause 38 of the general agreement to another contractor who was executing similar type of work of the same canal at a different site. Such allotment of work to another contractor was irregular.

⁸⁸ Out of 10 irrigation projects mentioned in para no. 1.

Scrutiny of records revealed that while attaching the work to the contractor under clause 38 the estimate of the work was assessed as ₹ 16.60 crore by adopting the current Schedule of Rates (CSR) of the Nagpur region. The contractor had been paid ₹ 13.15 crore as of June 2011.

Had the offer of 12.75 *per cent* above the estimated cost of the earlier contractor been accepted, the work would have cost ₹ 13.98 crore instead of ₹ 19.50 crore (17.50 *per cent* above ₹ 16.60 crore). This resulted in avoidable extra cost of ₹ 5.52 crore.

The Government stated (November 2011) that the lowest bidder was not ready to negotiate and therefore, his offer was rejected and the work was attached to another contractor, and that by attaching the work, there was a saving of ₹ 64.95 lakh.

The reply is not acceptable as such attachment of work is not permissible under the MPW manual as clause 38 relates to execution of extra quantity of tendered work. Fresh tenders should have been invited in this case.

2.3.7.7 Avoidable interest payment on payment of award

According to Section 31 of the Land Acquisition Act, 1894, on making an award for acquisition of land under Section 11, the Collector should tender payment of compensation to the person entitled thereto. When the amount of such compensation is not paid, the Collector should pay the amount awarded with interest thereon at the rate of nine *per cent* from the time of taking possession of the land till the date of payment of the compensation provided that if such compensation was not paid within a period of one year the interest at the rate of 15 *per cent* per annum shall be payable, on the amount of compensation or part thereof.

Scrutiny (November 2010) of records of Deputy Collector (No.III), Gosikhurd, Nagpur revealed that in two cases, though land awards for ₹ 86 lakh and ₹ 2.82 crore were declared on 25 October 2001 and 25 November 2001, payment thereof was delayed by VIDC by 983 and 903 days respectively. The Deputy Collector paid interest of ₹ 1.01 crore on 30 July 2010 due to delayed payment of compensation. Had the compensation been paid in time, the payment of interest could have been avoided.

On this being pointed out, Government stated (November 2011) that immediate payment was not possible due to paucity of funds and therefore, the required funds were deposited in January 2004.

The reply is not acceptable as the annual financial report for the year 2001-02 of VIDC depicted a substantial balance with it and as such should have made provision of funds accordingly.

2.3.7.8 Non-electrification of submersible pumps

The Wan Irrigation Project was administratively approved (June 1979) by Government for ₹ 13.37 crore. The work of the dam and canal of the project was completed by the year 2006, after incurring expenditure of ₹ 230.39 crore and the division was supplying water for various purposes since then. Further, as per the recommendations of the Central Water Commission to use 27.77 million cu m of ground water for creation of additional irrigation potential, the

In spite of incurring expenditure of ₹ 4.96 crore, no additional irrigation potential was created

department had installed 119 tubewells with submersible pumps in the command area at a cost of ₹ 4.96 crore between March, 2008 and April, 2009.

Audit observed that the tubewells with submersible pumps could not be operated for want of power supply (July 2011). Thus, the additional irrigation potential was not created.

The Government stated (November 2011) that efforts were being made to provide power supply to the tubewells as early as possible.

2.3.8 Targets and Achievements

2.3.8.1 Non-achievement of projected irrigation potential and water storage capacity

The position of irrigation potential and water storage capacity created by VIDC from 320 projects (including 224 projects transferred during 2007-09) as of June 2010 was as shown in **Table 4**.

Table 4: Targets and achievements of irrigation potential and water storage

No. of Projects	Irrigation Potential (in ha)			Capacity storage(in TMC)*		
	Target	Achievement	Percentage Creation	Target	Achievement	Percentage Creation
96 as of June 2005	1173437	241287	20.56	225.13	58.29	25.89
Addition of 224 in 2005-10	372993	141552	37.95	48.02	29.11	60.62
Total of 320 as of June 2010	1546430	382839	24.75	273.15	87.40	31.99

* TMC= thousand million cubic metres

Irrigation potential of 3.82 lakh ha could be created up to June 2010

As may be seen from the table, as against the targets, the achievements were very low. Similarly, creation of water storage as of June 2010 was only 31.99 *per cent*. This indicates poor progress in creation of irrigation potential and water storage in the five years from June 2005 to June 2010.

In 19 out of the 27 test-checked projects, the reasons for non-creation of irrigation potential were non-obtaining of forest clearance (three cases: Dhapewada II, Jigam and Pandhari), non-completion of canal work (four cases: Kawara-Nalla, Naghthana, Pothra-Nalla and Sonapur Tomta) and non-completion of dam work (12 cases)⁸⁹. The remaining eight projects were nearing completion.

2.3.8.2 Under-utilization of irrigation potential

Scrutiny in Audit revealed that out of 320 projects, 58 projects were nearly completed with minor residual works pending as of March, 2011. The utilization against the irrigation potential of 87353 ha created through these 58 projects was only 25977 ha, which was 30 *per cent* as of March 2011. The area-wise details of irrigation potential created and utilized were as shown in **Table 5**.

⁸⁹ Pothra-Nalla, Kawara-Nalla, Naghthana, Sonapur Tomta, Uma, Bawanthadi, Yegalkheda, Kharda, Borghat, Pachpohur, Lower Chulband, Paknadi, Lower Chargad, Lower Pedhi, Goji, Bordinalla

Table 5: Details of irrigation potential created and utilized

Sr. No	Region	Project	No. of projects completed	Projected IP (ha)	Created IP (ha)	Utilization of IP (ha)	Percentage of utilization of IP (ha)
1	Nagpur	Major	1	25545	25545	8811	34.49
		Medium	4	14134	14134	3302	23.36
		Minor	14	10217	10217	2778	27.19
	Total		19	49896	49896	14891	29.84
2	Amravati	Major	00	00	00	00	00
		Medium	02	14262	14262	3967	27.82
		Minor	37	23195	23195	7119	30.69
	Total		39	37547	37457	11086	29.60
Grand Total			58	87353	87353	25977	29.74

Note:- IP = irrigation potential

Under-utilization of irrigation potential was due to non-completion of work below outlets. Under-utilisation of irrigation potential in three out of the 27 test-checked projects is described below:

- **Non-utilization of irrigation potential created through Owara Project**

Non- utilization of created irrigation potential due to non-acquisition of submergence land

The Owara MI Tank having a projected irrigation potential of 1367 ha was administratively approved (March 1984) by the Government for ₹ 1.78 crore. The cost of the project was revised (March 2005) to ₹ 25.65 crore and thereafter, a proposal for revision of the cost to ₹ 49.03 crore was submitted (June 2011) to Government. The work of the dam seat was completed (June 2007) and was ready for erection of the gates.

Audit scrutiny (July 2011) revealed that the proposal for the second revised administrative approval was submitted (June 2011) for enhancement in irrigation potential from 1777 ha to 2405 ha by increasing the height of the dam from 339.45 m to 341 m with tilting gates of 6m x 1.55m. Further scrutiny revealed that though the division had created irrigation potential of 2405 ha, it was not able to impound the expected yield of water for irrigation purposes by closing the gates due to non-acquisition of the additional land falling under submergence as a result of the change in the height of the tank. The division had to keep the gates open to let out water so as to prevent any untoward incident.

Thus, even after incurring a huge expenditure of ₹ 42.16 crore as of March 2011, the division was not in a position to store water up to the level of 341 m to provide irrigation to the beneficiaries as planned in the project report.

Government stated (November 2011) that the water was stored in the dam up to the level of 339.45 m and irrigation facilities were provided in Khariff. Additional water up to the level of 341 m would be stored only after acquisition of additional submergence land which was in progress.

- **Delay in rehabilitation of project-affected persons, resulting in blocking of utilization of irrigation potential**

(i) The head works and the Right Bank Main Canal of the Gosikhurd Project were completed with a total expenditure of ₹ 4990.33 crore as of March 2011. Irrigation potential of 24588 ha was created. However, water could not be stored in the dam due to non-rehabilitation of 65224 PAPs (14840 families) in 87 villages. Hence, the amount spent on the project remained blocked till completion of rehabilitation work. The VIDC should have ensured rehabilitation of the PAPs before starting the work.

(ii) Similarly, the gorge filling of Bembla Project was completed in 2007. The total expenditure of the project as of March 2011, was ₹ 1176.74 crore. However, the division was not in a position to supply water after creation of irrigation potential of 27505 ha due to non-rehabilitation of 26099 PAPs (6717 families) in 24 villages. As a result, the total expenditure incurred on the project was blocked till rehabilitation of the PAPs.

Government stated (November 2011) that the process of rehabilitation of the PAPs of the Gosikhurd project was in progress.

2.3.9 Other Irregularities in Implementation

2.3.9.1 Infertuous expenditure due to overlapping of schemes

The Government accorded (September 1999) administrative approval to the work of construction of the Borghat Lift Irrigation Scheme (LIS) at an estimated cost of ₹ 23.94 crore with projected irrigation potential of 4675 ha. However, due to lapse of the said administrative approval for non-availability of funds for a period of more than five years, a fresh administrative approval was accorded (November 2006) for ₹ 69.20 crore for completing the project within five years. This resulted in increasing the projected cost by 200 *per cent*.

The detailed project report (DPR) of the said scheme indicated that the water lifted from the lift irrigation scheme would be supplied to a branch canal of the Asolamendha tank, as the area was receiving scanty rainfall. The DPR for the Borghat LIS was prepared with an expectation that the Asolamendha tank which was under renovation by the Irrigation Department would take 25 to 30 years to complete and the life of the Borghat LIS would lapse by that time.

Audit scrutiny revealed that though the revised administrative approval of the Borghat LIS project was received in November 2006, the work order was issued in July 2009 for ₹ 36.49 crore with a stipulation to complete the work within 36 calendar months, *i.e.* by July 2012. The work of the renovation of the Asolamendha tank under the Gosikhurd irrigation project was also awarded (August 2009) for completion by August 2012. The Borghat LIS was also to be completed by July 2012. Thus, the scheme of feeding of branch canal of the Asolamendha tank through Borghat LIS could become unfruitful as both the Borghat LIS and the renovation of the Asolamendha tank were likely to be completed simultaneously in July 2012 and August 2012 respectively. This could result in overlapping of the command area of the Asolamendha tank, besides rendering the expenditure of ₹ 20.10 crore, incurred on the Borghat LIS, infertuous.

The Government accepted (November 2011) that the Asolamendha scheme had overlapping command with the Gosikhurd project. However, considering the advance stages of construction of Borghat LIS and the speed with what the Gosikhurd national project and the Asolamendha renovation component were progressing, it was decided to take up the Wardha project canal on Mokhabardi LIS and Paoni LIS as part of the Gosikhurd project in place of Borghat LIS.

The reply is not acceptable because the work of Borghat LIS was taken up as a supplementary arrangement to feed the command area of the Asolamendha and since the Asolamendha renovation work was already taken up, the work of Borghat LIS should have been cancelled.

2.3.9.2 Non-regularization of excess expenditure by the competent authority

According to Para 134 (c) of the MPW Manual, revised administrative approval (AA) is to be obtained, if the expenditure exceeds the amount of the original AA by more than 10 *per cent* or ₹ one crore, whichever is less. No officer should incur expenditure over AA without permission of the competent authority.

Scrutiny of records and VIDC's status report for the month of March, 2011 revealed that in respect of four (Kalpathari, Potharanala, Chargad, Owara) projects, the total original AA sanction of ₹ 11.52 crore was revised (between May 2006 and March 2009) to ₹ 174.58 crore. However, the VIDC incurred an expenditure of ₹ 214.76 crore as of March, 2011, thereby exceeding the revised AA by ₹ 40.18 crore. The excess expenditure of ₹ 40.18 crore incurred was not regularised (August 2011) by the competent authority as prescribed in MPW Manual. The percentage increase in expenditure in these projects ranged between 12.47 *per cent* and 63.14 *per cent* as detailed in **Appendix 2.3.6**.

The Government stated (November 2011) that the revised approval of the cost of these projects was under process.

2.3.9.3 Irregular grant of mobilization and machinery advances

The Government issued (March 2000) a circular directing that no provision to give any kind of advances should be included in any tender. Out of the 27 projects selected for audit, mobilization/machinery advances of ₹ 399.91 crore were paid to contractors in five⁹⁰ projects even though there was no provision in the tenders. In respect of the Dhapewada and Jigaon projects, advances amounting to ₹ 20.28 crore were paid (February and August 2009) to two contractors and even after a lapse of two years, the work was not started. As a result, the amount of advance was still pending for recovery (July 2011). Thus, payment of mobilization and machinery advances had resulted in undue benefit to the contractors.

Government stated (November 2011) that though the condition for payment of mobilization advance was not included in the tender conditions, considering the initial investment and purchase of material/machinery of huge cost advances were paid to the contractors in the interest of work.

Undue favor to
contractors
without tender
condition

⁹⁰ Jigaon, Lower Pedhi, Gosikhurd, Dhapewada-II, Uma

The reply is not acceptable as the financial and physical capacity of the contractor is the main criteria for allotment of work and if the condition for payment of mobilization advance had been included in the tender, more bidders might have been attracted for the work.

2.3.9.4 Non-execution of plantation work

Provision for plantation work was made in the project reports of major, medium and minor projects. Scrutiny in 19⁹¹ out of 27 test-checked projects revealed a total provision of ₹ 6.89 crore was kept for plantation work as per the project reports in respect of 17 projects. However, no plantation work was done. In respect of two⁹² projects, provision of ₹ 4.79 crore was made but the expenditure incurred between 1995-96 and 2004-05 was ₹ 13 lakh only. Thus, plantation works which were necessary for maintenance of environmental balance was not done.

The Government stated (November 2011) that plantation work could be taken up only after the construction works were completed as the survival of plants depended on watering which was possible only after completion of the projects.

The reply is not acceptable because in nine out of 19 projects the dam work was completed and as such plantation work could have been taken up, besides keeping provision of funds for plantation work in anticipation of completion of projects was irregular.

2.3.9.5 Formation of water users association

As per the VIDC Act, water users associations (WUAs) were required to be formed for each completed project. Further, the Government reiterated (July 2001) the need for formation of WUAs for optimum and efficient utilization of water for irrigation purposes, whenever a dam was ready for distribution of water to the beneficiaries. Government also clarified that there should be no distribution of water to the beneficiaries until WUAs were formed.

Scrutiny of records of the 27 test-checked projects revealed that though the dam works of 10 projects⁹³ were completed. WUAs had not been formed in five⁹⁴ projects.

Government stated (November 2011) that out of the five projects, WUAs had been formed in two projects and for the remaining three projects, the process of formation of WUAs was in progress.

2.3.9.6 Non-construction of hydro-electric projects

The VIDC Act envisaged construction and management of hydro-electric projects (HEP) in respect of the irrigation projects assigned and handed over to VIDC. VIDC had constructed irrigation-cum-power outlets in 25 projects

⁹¹ Nagthana-II, Bordinalla, Lower Pedhi, Lower Chargad, Bawanthadi, Lower Chulband, Owara, Pothara Nalla, Borghat LIS, Dongargaon, Sonupur Tomta LIS, Sapan, Kawaranalla, Paknadi, Bembla, Gosikhurd, Jigaon, Kharda, Pachpohur

⁹² Bembla, Gosikhurd

⁹³ Nagthana-II, Bembla, Owara, Gosikhurd LBC, Gosikhurd Dam, Gosikhurd RBC, Wan Project, Panchpohur, Kharda, Dongargaon

⁹⁴ Kharda, Nagthana II, Owara, Panchpahur and Wan

during 1993 to 2005 for the purpose of construction of HEPs thereon to generate power. However, the work of only one HEP on Wan was completed (August 2007) and power generation had started. Thus, due to non-construction of HEPs power generation could not be started and the objective of earning revenue on sale of power remained unachieved.

The Government stated (November 2011) that tenders for nine projects had been called and a letter of permission had been awarded to one developer. Price bid evaluations for three projects had been submitted to the Government for approval.

2.3.10 Monitoring, Review, Evaluation and Control

A sound monitoring arrangement was required for periodical review and supervision of timely achievement of goals assigned. As stated earlier, in pursuance of Section IV of the VIDC Act, a Governing Council (GC) and an Executive Council (EC) had been established for monitoring the work assigned to VIDC. The deficiencies noticed in the working of these councils is discussed below:

2.3.10.1 Governing Council

The Governing Council functions as the monitoring body for reviewing the physical and financial progress of the projects and is required to meet once a month. As against 167 meetings to be held by the GC during 1997-2011, only 47 meetings were convened to discuss issues such as demands for funds, land acquisition problems *etc.* Even though projects were held up for long periods due to issues such as land acquisition problems, compensation to PAPs, forest clearance *etc.*, these were not discussed in the GC meetings. The issue of observance of HPC recommendations mentioned in paragraph was not discussed in the GC meetings held up to September 2010. Thereafter, no meetings were held (March 2011). Further, the ex-officio members from financial institutions, Legislative Assembly/Council had not attended the meetings on a single occasion. Absence of these key individuals in the GC meeting defeated the purpose of establishment of an effective monitoring system under the Act.

Government (November 2011) accepted that only 47 meetings of the GC had been held during May 1997 to March 2011.

2.3.10.2 Executive Committee

The Executive Committee was entrusted with the power to accept tenders of above five *per cent* and up to 15 *per cent* of the estimated cost and to deal with contractors claims up to ₹ 15 lakh. However, no norms were fixed by the VIDC or the Government for holding meetings. The EC met on 14 occasions during 1997 to 2010 and thereafter, no meetings were convened, which showed lack of monitoring and evaluation of projects for effective and timely completion of the projects.

Government stated (November 2011) that there were no prescribed norms for conducting the EC meetings and accepted that only 14 meetings of EC had been held.

2.3.10.3 Non-maintenance of records

Internal control is an integral component of an organization's management process. It is intended to give reasonable assurance that its operations are carried out according to laid down rules and regulations in promoting orderly, economical, efficient and effective operations to provide quality products and services consistent with the organization's mission.

There are 13 circle offices, 56 divisional offices and 262 sub-divisional offices in the VIDC. It was observed that monthly accounts were received from the divisional offices but were not consolidated by VIDC. As a result, no monthly financial statements were prepared. VIDC did not maintain any records in respect of fixed assets and did not have a system of physical verification of fixed assets.

The Government stated (November 2011) that due to lack of manpower with VIDC, the consolidation and compilation of monthly accounts received from divisional offices were not being done. However, now the work had been entrusted (March 2011) to a firm of Chartered Accountants, viz M/s Rodi & Dabir & Co. A consolidated Fixed Assets Register was under preparation at the VIDC office.

2.3.10.4 Non-maintenance of database

To get advantage of uniformity, efficiency, accountability, responsibility, economy *etc.* in day-to-day working and reporting to the Government a provision to establish a Management Information System (MIS) was approved (August 1997) by the GC.

Audit scrutiny revealed that even after the lapse of 14 years, no such system had been developed in VIDC till August 2011.

The Government stated (November 2011) that the MIS was pending due to lack of manpower with VIDC, especially computer knowing experienced staff. However, appropriate steps had been taken to entrust the work to a private firm.

2.3.10.5 Monitoring of dam safety

As per guidelines issued (January 1982) by the Dam Safety Organization (DSO), Nasik, dams were to be inspected by the respective Executive Engineers at the pre-monsoon and the post-monsoon periods. Discrepancies, defects, omissions noticed during the inspection were to be rectified and attended to urgently by the EEs for safety of the dams and the adjoining areas.

Scrutiny of Annual Consolidated Dam Health Status Reports by the Dam Safety Organisation, Nasik in respect of Amravati and Nagpur regions for the year 2009 revealed deficiencies such as pitching of disturbed drains, damage of rubber seal of spillway gates, erosion of foundation, leakage through masonry of dam *etc.* in seven⁹⁵ projects which required immediate repairs but remedial action had not been initiated by the concerned Executive Engineers. The Status Report for the year 2010 was still to be received from the Dam Safety Organization Nasik.

⁹⁵ Bembla, Uma, Wan, Lower Wenna, Lalnalla, Harashi, Dongargaon

Government stated (November 2011) that the dams were being inspected by the concerned EEs at the pre-monsoon and post-monsoon periods and the defects noticed during inspection were being rectified urgently. Further for major, medium and minor projects, a separate organization for dam safety, headed by SE was established to monitor the projects from time to time and prepare health status reports of the projects for submission to the Government.

The reply is not acceptable because even after preparation of such reports (2009) in Amravati and Nagpur region, rectification work for the deficiencies enlisted in the said report had not been started.

2.3.11 Conclusion

VIDC failed to ensure completion of projects in hand which were at an advanced stage. This was despite High Power Committee recommendations to the contrary. Projects with Vidarbha Irrigation Development Corporation suffered due to insufficient release of funds by the Government at the initial stage and transfer of additional projects. Works were commenced without acquisition of private as well as forest land, contributing to time and cost overruns. Monitoring of the projects by the Governing Council and the Executive Council was inadequate. VIDC had created irrigation potential and water storage of 3.82 lakh ha and 87.40 thousand million cubic meters at a cost of ₹ 11,732 crore as against the target of 15.46 lakh ha and 273.15 thousand million cubic meters respectively and utilized irrigation potential of only 26000 ha.

2.3.12 Recommendations

The Government may :

- re-prioritise execution of the projects as recommended by the High Power Committee and ensure adequate budget provision to complete ongoing projects without further delay.
- expedite land acquisition processes, rehabilitation and other related problems of Project Affected Persons for timely completion of projects.
- strengthen the monitoring mechanism and internal control for effective implementation of the projects.

Rural Development and Water Conservation Department

2.4 Implementation of Soil and Water Conservation Programmes

Highlights

Performance audit of the 'Implementation of Soil and Water Conservation Programmes' was conducted to assess the status and impact of implementation of selected soil and water conservation schemes. Audit scrutiny revealed that comprehensive integrated planning was not done, watershed projects were implemented with inadequate project plans, farm ponds were not serving the intended purpose of percolation of water, farmers' suicides continued, soil and water conservation works were not executed in the prescribed sequence by adopting the ridge to valley strategy, watershed treatment works were taken up in command areas of irrigation projects, the targets set were not achieved due to financial constraints, there was shortfall in works taken up and completed and there was decrease in Static Water Level in 20 talukas of three districts.

Percentage of funds released at the fag end of the year in the month of March ranged between 34 and 100 and funds of ₹ 5.65 crore were diverted to other scheme.

(Paragraphs 2.4.7.2)

Farm ponds were constructed without providing inlets and outlets and without carrying out stone pitching works to prevent soil erosion.

(Paragraph 2.4.8.1)

The Vidarbha Watershed Development Mission did not achieve the basic objective of controlling the suicide cases of farmers despite expenditure of ₹ 16.44 crore.

(Paragraph 2.4.8.5)

The ridge to valley strategy was not adopted and more thrust was given to the works in lower reaches, neglecting the execution of works in the upper/middle reaches of watersheds. The soil and water conservation works were undertaken in command areas of irrigation projects.

(Paragraph 2.4.8.7)

2.4.1 Introduction

The State of Maharashtra comprises an area of 307.58 lakh hectares (ha), of which 159 lakh ha is drought-prone, due to scanty rains and leasing out of moisture content from the soil surface. The deficiency of water and soil erosion is caused by highly erosive rains, high wind velocity and generally shallow soil. Consequently, soil becomes infertile for agriculture. In order to tackle these problems, the Government of Maharashtra launched 14 schemes/programmes (**Appendix 2.4.1**), from 1992 onwards to conserve soil and rain water in order to increase the productivity of agriculture and to boost the agrarian economy.

Out of 44,184 watersheds⁹⁶, the Government proposed (1992) to take up soil and water conservation (SWC) programmes in 33,467 watersheds through watershed management implemented by the Agriculture Department in co-ordination with the Water Conservation Department. Out of 33,467 watersheds, works were undertaken in 26,897 watersheds. However, only 10,887 watersheds could be completed (March 2011).

Soil and water conservation programmes consist of treatments such as Continuous Contour Trenches (CCT), Compartment Bunding (CB), Loose Boulder Structure (LBS), Mati Nalla Bandh (MNB), Cement Nalla Bandh (CNB), farm ponds *etc.* The area suitable for soil and water conservation works was spread over 241 lakh ha. The conservation programmes have been undertaken in 26,897 watersheds covering 111.24 lakh ha under 14 schemes⁹⁷. The balance area of 129.76 lakh ha has not yet been covered. The deficiencies noticed in the implementation of the programmes are discussed in the succeeding paragraphs.

2.4.2 Organizational set-up

The Rural Development and Water Conservation Department (RD & WCD) undertakes soil and water conservation works which are implemented by Agriculture Department⁹⁸. The Secretary, WCD is the head of the department. The Director, Soil Conservation and Watershed Management, Pune (Director) in the office of the Commissioner of Agriculture (COA), Pune is in charge of implementing the soil conservation works and is assisted by eight Divisional Joint Directors (JDs) of Agriculture, 33 District Superintending Agriculture Officers (DSAOs), 90 Sub-Divisional Agriculture Officers (SDAOs) and 353 Taluka Agriculture Officers (TAOs) in the entire State. The organizational chart is given in **Appendix 2.4.2**.

2.4.3 Scope and methodology of audit

Performance audit of the 'Implementation of Soil and Water Conservation Programmes' was conducted between February and July 2011, covering the period from 2006-07 to 2010-11 by collection of information through audit queries/questionnaire and test check of records in the Rural Development and Water Conservation Department Secretariat and the Directorate of Soil Conservation and Watershed Management as well as the records of four Joint Directors of Agriculture (JDsA), nine District Superintending Agriculture Officers (DSAOs), nine Sub-Divisional Agriculture Officers (SDAOs), 39 Taluka Agriculture Officers (TAOs) and Circle Agriculture Officers (CAOs). The DSAOs and Taluka Agriculture Officers were selected (**Appendix 2.4.3**) by adopting the simple random sampling without replacement method using Idea software.

Descriptions of the six schemes selected for test check out of the 14 conservation schemes are given in **Appendix 2.4.4**. The audit objectives, audit

⁹⁶ A catchment of rain basin which falls between a ridge line and a drainage point through which all the rain water falling in that area drains out. It is categorized as Mega (above 15,000 ha), Mini (3,000-5,000 ha) and Micro (500-600 ha)

⁹⁷ Centrally sponsored and six State sponsored

⁹⁸ The Agriculture Department is an implementing agency and funds are provided by RD&WCD.

criteria, scope and methodology of audit were discussed in an entry conference held on 6 June 2011 with the Principal Secretary, Water Conservation Department. An exit conference was held on 18 October 2011 with the Principal Secretary, Water Conservation Department who accepted all the recommendations. The responses of the Government during the exit conference have been included at appropriate places.

Out of the six schemes selected for performance audit, the National Agriculture Development Programme (NADP), the River Valley Project (RVP) and the National Watershed Development Programme (NWDP) are Centrally sponsored and the Marathwada Watershed Development Mission (MWDM), the Vidarbha Watershed Development Mission (VWDM) and the Accelerated Watershed Development Programme (AWDP) are State sponsored.

2.4.4 Audit objectives

The audit objectives were to assess whether:

- the planning process for the implementation of programmes was efficient;
- the financial management was efficient and effective;
- the implementation of the programme was efficient, effective and economical;
- effective monitoring and internal control mechanisms were in place.

2.4.5 Audit criteria

The audit criteria adopted for the performance audit were:

- Manual of the Soil and Water Conservation Department;
- Programme guidelines, instructions, orders, circulars, issued by Government of India (GOI) and Government of Maharashtra (GOM) from time to time and
- Plans of soil and water conservation works and records pertaining to their implementation.

Audit Findings

2.4.6 Planning

All schemes (Centrally as well as State sponsored) are planned by the RD & WCD in consultation with the Agriculture Department. The Taluka Agriculture Officers prepare the plan for development of micro-watersheds and submit the same to the District Level Committee⁹⁹ (DLC) for sanction. The DLC accords sanctions and submits demands to the Government for funds. It was noticed that no comprehensive integrated planning comprising all the schemes under implementation and entire area of the State was being done by the department.

⁹⁹ A district level watershed committee headed by the District Collector for sanctioning taluka level watershed project plans

2.4.7 Financial Management

2.4.7.1 Funding pattern

During each financial year, budget proposals for all the schemes are sent to the RD&WCD by the Director for scrutiny. The Finance Department finalizes the budget allocations and passes it on to the Commissioner of Agriculture, Pune (COA). The Government of Maharashtra has constituted online budget distribution system for allocation of funds. In this system, grants are allocated month wise.

2.4.7.2 Budget and expenditure

The expenditure incurred on the six schemes of soil and water conservation selected for audit was ₹ 1,342.48 crore (during 2006-11). The details are given in **Appendix 2.4.5**. It was seen that despite having sufficient funds, the expenditure was very little under the National Agriculture Development Programme in 2010-11, RVP in 2006-07 and 2009-10, MWDM in 2006-07, 2007-08 and 2008-09 and VWDM in 2007-08 and 2009-10 with the result that there was a shortfall in achievement of targets as discussed in the succeeding paragraphs.

(i) Release of funds at the fag end of the year

Rule 56 (3) of the General Financial Rules, stipulates that rush of expenditure, particularly in the closing months of the financial year should be regarded as a breach of financial propriety and should be avoided.

Scrutiny (May 2011) of the records of the Director revealed that the release of funds under selected schemes for the State was maximum in the month of March as shown in **Appendix 2.4.6**. The percentage of funds released at the fag end of the year in the month of March under the selected programmes during 2006-11 ranged between 34 and 100.

Test check of records revealed that out of the total grants of ₹ 324.62 lakh and ₹ 230.26 lakh released under AWDP to the Amravati and Nashik districts, grants of ₹ 219.42 lakh (58 *per cent*) and ₹ 81.02 lakh (35 *per cent*) respectively were released in the month of March. Similarly, out of the total grants of ₹ 54.61 lakh and ₹ 114.57 lakh released under NWDP in the same districts, during 2006-11, grants of ₹ 13.02 lakh (24 *per cent*) and ₹ 44.66 lakh (39 *per cent*) respectively were released in the month of March.

The Government accepted (October 2011) that funds were released at the fag end of the year.

(ii) Diversion of scheme funds

Rule 26 (ii) of the General Financial Rules states that the duty of a Controlling Officer is to ensure that expenditure is incurred for the purposes for which funds have been provided.

It was observed that in two out of the nine selected DSAOs, the grants meant for NADP works were diverted as detailed below.

Release of funds under selected schemes was maximum in the month of March

GOI funds for the scheme under NADP were diverted to MGNREGS

- The total target for farm ponds under NADP during the year 2009-10 for Buldhana district was 2,300 against which only 188 farm ponds were completed as of January 2011 leaving a balance of 2,112. It was further observed that the GOI funds for the scheme under NADP to the extent of ₹ 3.78 crore were diverted (January 2011) to the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), at a stage when the farm ponds of NADP were still incomplete.

The DSAO, Buldhana stated (May 2011) that the DLC had permitted the diversion of funds.

- Similarly, NADP funds to the extent of ₹ 1.87 crore were diverted by the DSAO, Nashik for payment of 287 farm ponds taken up under MGNREGS. Payment for works sanctioned under MGNREGS, from the funds allotted for NADP, was irregular.

The DSAO, Nashik stated (June 2011) that since the physical target to be achieved under MGNREGS was more and the beneficiaries were deprived of the grants due to them, the funds were diverted with the orders of the JDA, Nashik.

The replies are not acceptable as diversion of NADP funds for achievement of MGNREGS targets is not justified, especially when there was a shortfall in achievement of NADP targets.

(iii) No guidelines for treatment of accrued interest

Funds allotted for watershed works are provided to watershed committees (WCs) for execution of works at the village level. These funds are kept in the saving bank accounts of WCs. However, there were no specific instructions in the guidelines about the manner of utilization of the interest earned.

The Government stated (October 2011) that the competent authority had been requested to issue guidelines in this regard.

(iv) Diversion of funds earmarked for training

Funds earmarked for training was unutilized defeating the purpose of training

According to NWDP guidelines, short duration orientation courses should be arranged for honorary office bearers of the registered societies established under the project at the micro-watershed level for creation of awareness of SWC schemes amongst farmers.

An amount of ₹ 4.76 lakh was released (June 2008) to the Taluka Agriculture Officer, Sangamner for training of Watershed Development Team (WDT) members in respect of nine watersheds. However, only ₹ 56 thousand was utilized for training and the remaining amount was diverted for SWC works without prior approval of the higher authorities. This resulted in defeating the objective of creation of awareness of SWC schemes amongst farmers, which was an essential component of the scheme for its successful implementation.

The Taluka Agriculture Officer, Sangamner stated (July 2011) that the amount meant for training which was utilized for other purposes would be proposed for ex-post facto sanction. The reply is not acceptable as diversion of funds meant for training was irregular.

(v) Incorrect reporting of expenditure

In the Taluka Agriculture Office, Anjangaon Surji, it was observed that expenditure of ₹ 2.99 crore on VWDM works reported to the Government was inclusive of ₹ 23.46 lakh (including interest of ₹ 6.30 lakh) lying unspent in the bank accounts.

The TAO stated (June 2011) that funds of ₹ 14.56 lakh were received (May 2010) for study tours of farmers of the watershed at the taluka level. However, no detailed plan of the study tour had been received from the watershed committees and as such, the amount could not be spent.

The reply is not acceptable as depiction of unspent amounts as expenditure was incorrect

2.4.8 Programme implementation

2.4.8.1 National Agriculture Development Programme (NADP)

• Limited use of farm ponds as storage tanks

Farm ponds are constructed with the objectives of increasing groundwater table, increasing the storage of rain water, improving recharge of wells and providing protective irrigation. The ponds are constructed by the beneficiaries from their own resources and after due inspection by the authorities, subsidy is paid. Against the target of 79,000 farm ponds to be constructed under NADP during 2007-11, 62,018 farm ponds were constructed to store rain water for recharging ground water as well as life saving irrigation to crops.

It was observed that out of 39 selected TAOs, in two test-checked TAOs (Miraj and Sangamner), the farmers/beneficiaries were using the farm ponds as storage tanks by lining the pond with plastic covers to prevent percolation, thereby defeating the objectives of recharging of wells and increase in the water table.

The TAO, Miraj stated (June 2011) that payments for works done were made after due inspection of the sites and ensuring fulfillment of technical requirements and the plastic covers were used by the farmers afterwards.

The reply is not acceptable as the use of plastic covers in farm ponds should have been stopped as soon as it was noticed.

The TAO, Sangamner stated (June 2011) that the department had permitted (August, 2010) the use of plastic and also stated that even if the farm pond was covered with plastic, it would not affect the storage of rain water and protective irrigation.

The reply is not acceptable as the Government order (August 2010) did not permit use of plastic covers.

• No inlet and outlet provided in farm ponds

According to technical specifications given in the NADP guidelines, a farm pond should have an inlet and an outlet and there should be pitching (stone work) inside the farm pond. The height of the inlet to the farm pond should not be more than the ground level in watershed area. Scrutiny of records in audit and interviews and interaction with the beneficiaries revealed that the farm ponds were constructed without the above specifications.

Plastic covers were used against the guidelines, defeating the objective of percolating rain water

Farm ponds were constructed without stone pitching work and inlets and outlets

Out of 39 selected TAOs, in four test-checked TAOs, the technical guidelines of NADP were not observed. The cases are given in **Appendix 2.4.7**. Further, SDAO, Malegaon (TAO, Nandgaon) and TAO, Devla made a payment of subsidy of ₹ 82,000 each, for the works not executed as per the technical specifications, which was irregular.

Plantation or pitching was not provided during construction of farm ponds

- **Non-prevention of siltation and soil erosion**

The scheme guidelines of NADP provide for planting some vegetative grasses near the inlet and outlet where flow of water was more. It was mandatory for the beneficiaries to do it from their own budget. The technical specification also provided for pitching to avoid soil erosion and depositing of silt.

Out of 37 TAOs, it was found that plantation or pitching were not provided by the farmers under TAO, Shrirampur and there was no record with the TAO, Dharmabad to show such plantations by the farmers.

The audit observations were accepted by the Government (October 2011).

Beneficiaries preferred farm ponds of bigger size despite small land holdings

- **Non-consideration of norms for determining size of Farm Ponds**

According to guidelines, the minimum holding for a farmer to be eligible as a beneficiary was 0.60 ha and there was no provision for payment of subsidy as per their land holdings. The scheme guidelines provided for farm ponds of different sizes and the subsidy to be paid was based on their sizes. The details are given in **Table 1**.

Table 1: - Sizes of farm ponds and admissible subsidy

Sr. No.	Size of farm pond (Meters)	Admissible subsidy (₹)
1	15x15x3	16,515
2	20x15x3	23,260
3	20x20x3	32,810
4	25x20x3	42,360
5	25x25x3	54,715
6	30x25x3	67,075
7	30x30x3	82,240

During the audit of 39 TAOs, it was observed that NADP has been implemented in 37 TAOs. Audit scrutiny revealed that

- In TAO, Jath, the beneficiaries preferred farm ponds of bigger size despite small land holdings. As per the list of the beneficiaries, 42 farmers whose land holdings were between 0.60 and 1.5 ha, had opted for the biggest sizes of the farm ponds for which subsidy admissible per farm pond was ₹ 82,240.
- In TAO, Dharmabad, in 94 (78 per cent) out of 121 cases, the sizes of farm ponds selected by the beneficiaries were the biggest ones and Government paid subsidy of ₹ 98.11 lakh for 121 farm ponds according to the sizes of farm ponds.

Government stated (October 2011) that out of the prescribed seven sizes of farm ponds, the farmers had their own choice to select any size.

The reply is not acceptable as allowing the biggest size of farm pond to beneficiaries having small land holdings would decrease the area under cultivation, deny benefits to a larger number of farmers and would also result in decrease in yield.

- **Shortfalls in works taken up and completed**

The farm pond programme under NADP was being implemented since 2007-08. The physical target of 200 farm ponds per taluka was set during 2007-08 and later, targets were fixed on the basis of grant received from GOI.

The beneficiaries are selected by a committee headed by the District Collector and work orders are issued to the beneficiaries. The payments are made to the beneficiaries after completing farm ponds as per specifications. The year-wise information is shown in **Table 2**.

Table 2: Status of NADP

Item	2007-08	2008-09	2009-10*	2010-11	Total
Number of programme implementing districts	16	21	25		25
Selected beneficiaries	17,500	47,037	40,703		1,05,240
Physical targets of farm ponds (Numbers)	17,500	21,500	40,000		79,000
Achievement (Numbers)	17,500	21,620	22,898		62,018
Shortfall (Numbers)	0	+120	-17,102		-16,982
Budget provision (₹ in crore)	80.00	136.52	224.00		440.52
Expenditure upto 31 March 2011 (₹ in crore)	80.00	136.48	202.07		418.55
Unutilised Fund (₹ in crore)	0	00.04	21.93		21.97

(*Programme was ongoing)

Thus, there was a shortfall of 16,982 farm ponds despite the availability of sufficient funds (₹ 21.97 crore).

Government stated (October 2011) that due to late receipt of funds from GOI, the works could not be completed within time.

The reply is not acceptable as the Government should have ensured timely availability of funds for the completion of the farm ponds.

2.4.8.2 River Valley Project (RVP)

- **Deficiencies in preparation of project report**

A watershed project, covering Shegaon and Banali villages, was taken up by the Taluka Agriculture Officer, Jath under RVP for a period of eight years from 2003-04 to 2010-11 at a cost of ₹ 2.28 crore. The major components of the project were demarcation, contour vegetative hedges supported by contour bunds, agro-forestry, horticulture development, pasture development and drainage line treatment in the upper, middle and lower reaches. The total expenditure incurred on the project upto March 2011 was ₹ 3.97 crore. The project was to be completed by 2010-11. However, it was not completed due to slow progress of a few components of project works as detailed in **Table 3**.

Inadequate planning led to either delays in completion or revision of projects

Table 3: Execution of work without proper planning (as of 31 March 2011)

Component	Target		Achievement		Shortfall in percentage	
	Physical (Number)	Financial (₹ in lakh)	Physical (Number)	Financial (₹ in lakh)	Physical	Financial
Earthen loose boulder structure	1,382	55.94	85	2.41	94	96
Agro-forestry	831	8.31	416	4.16	50	50
Contour trench	935	12.90	125	1.47	87	89
Sowing and planting	625	15.43	0	0	100	100
Drainage line treatment, upper reaches	331	5.96	15	0.24	95	95
Check bunds	77	6.75	6	0.79	71	88
Total	4,181	105.29	647	9.07	85	91

The Taluka Agriculture Officer, Jath stated (June 2011) that during the year 2002-03, when project was sanctioned, the activities of the upper and middle reaches were cancelled due to non-availability of required boulders in the nearby areas for Loose Boulder Structures (LBS) works. The agro-forestry, sowing and planting, pasture development and vegetative hedges works were cancelled due to uncertain and erratic rainfall.

The reply of Taluka Agriculture Officer indicated lack of adequate survey and investigation before preparation of the project report. The availability of boulders was not ensured prior to taking up of the works.

- **Non-installation of sediment monitoring stations**

With a view to measuring the hydrological and sediment response of the watershed for a period of seven years, selection of at least one out of five watersheds for establishment of sediment monitoring stations (SMS) was mandatory as per RVP guidelines.

Out of the 39 test-checked TAOs, RVP was under implementation in five. In four TAOs, it was observed that sediment monitoring stations were not installed/ working as detailed in **Table 4**.

Table 4: Installation of SMS

(₹ in crore)

Name of District/ Taluka	Year of commencement	Cost of SMS component under project	Present status
Ahmednagar	2002-03 2009-10	0.16 0.40	Not installed
Nanded/Naigaon	2000-01	0.03	Installed but washed away
Sangli/Kadegaon	2002-03	0.05	Not installed
Sangli/ Jath	2010-11	0.53	Not installed
Total		1.17	

Thus, due to non-installation of SMS, hydrologic and sediment response of the watersheds could not be measured. While accepting the point, Government stated (October 2011) that SMS would be installed as per norms.

Cash payments to contractors and pieceworkers were made in violation of Government rules

• **Payment to contractors and pieceworkers in cash**

According to Rule 355 (2) of the Maharashtra Treasury Rules (MTR), payments should be made to contractors/suppliers through cheques.

Out of the 39 test-checked TAOs, it was observed that in TAO, Kadegaon, a total amount of ₹ 55.82 lakh was paid in cash during 2006-08 to various Circle Agriculture Officers (CAOs) in violation of Government rules. Subsequently, the CAOs also made cash payment to the contractors and pieceworkers which was irregular and fraught with the risk of fraudulent payments.

Government stated (October 2011) that cash payments were made as the bank network was very scattered in the area. The reply is not acceptable as the TAOs and CAOs should have been asked to open bank accounts at their nearest bank branches.

• **Shortfall in watershed works taken up and completed**

Out of 1,235 priority watersheds, 271 watershed works were sanctioned (1993-2011) and only 173 were completed in five catchments leaving 98 watersheds incomplete and on-going as shown in **Table 5**.

Table 5: Status of RVP

Names of catchments/ areas	Names of districts implementing the project	Total No. of priority watersheds	Sanctioned watersheds	Completed watersheds	Incomplete watersheds
Damanganga	Thane, Nashik	110	47	21	26
Ukai	Dhule, Jalgaon, Nandurbar	174	27	27	0
Sardarsarovar	Nandurbar	54	26	26	0
Nagarjunsagar	Pune, Sholapur, Osmanabad, Satara, Sangli, Kolhapur, Ahmednagar	434	88	49	39
Pochampad	Nanded, Aurangabad, Nashik, Jalna, Beed	463	83	50	33
Total		1,235	271	173	98

Out of 98 incomplete watersheds, 58 were on-going even after completion of stipulated period of five years.

Government stated (October 2011) that due to late receipt of funds from GOI, the works could not be completed within time.

2.4.8.3 National Watershed Development Programme (NWDP)

- **Slow progress due to inadequate provision of funds**

According to the guidelines of NWDP, funds should be released in a phased manner for watershed projects over a period of five years from 2007-08 to 2011-12.

Inadequate funds provided for the projects resulted in slow progress of works

In TAOs at Morshi, Warud and Anjangaon Surji in Amaravati district and Malegaon and Dindori in Nashik district, it was observed that for 13 selected watersheds estimated to cost ₹ 9.68 crore, funds of ₹ 1.10 crore only were provided by the GOI and expenditure of ₹ 69.39 lakh was incurred (up to March 2011) as shown in **Appendix 2.4.8**. Funds to the extent of two *per cent* to 53 *per cent* were provided and expenditure to the extent of two *per cent* to 37 *per cent* was incurred at the end of the fourth year of implementation. It had been expected that funds to the extent of 80 *per cent* of the cost of the project would be provided and that 80 *per cent* works would be completed as envisaged in the project plans. It was noticed that inadequate funds provided by GOI for all the projects resulted in very slow progress of works. Besides, the TAOs also could not utilize the funds to full extent and the balance funds were kept in the banks.

On this being pointed out, the Government accepted the facts (October 2011).

- **Unfruitful expenditure on the management and preparatory phase**

The expenditure incurred on management and preparatory activities was rendered unfruitful due to passage of time

Scrutiny of project reports and the Quarterly Progress Report of 15 watershed projects costing ₹ 8.63 crore, planned under NWDP, revealed that all the projects were proposed to be executed in different villages of Ahmadpur and Nilanga talukas. As per the project report, these works were selected and taken up in 2007-08 under the XIth Five Year Plan for completion by 2011-12. Since its inception, ₹ 74.74 lakh was released up to March 2009 against which ₹ 74.72 lakh was spent on management and preparatory activities¹⁰⁰. Thereafter, no funds were released till March 2011. Thus, due to non-release of funds during 2009-11, the projects remained incomplete. The DSAO, Latur stated (July 2011), that the work would be covered from NADP and other funds.

However, the fact remains that the expenditure incurred on management and preparatory activities was rendered unfruitful due to passage of time.

- **Non-utilization of people's participation fund**

Funds allotted to encourage people's participation remained unutilized

The NWDP guidelines stipulate that funds should be earmarked in each project for people's participation to create awareness among farmers about the schemes. In TAO, Sangamner, it was noticed that funds of ₹ 1.09 crore against the total release of ₹ 1.22 crore during 2007-11 for people's participation remained unutilized. The TAO, Sangamner stated (July 2011) that proposals under NWDP were not cleared by the higher authorities.

Thus, funds allotted to encourage people's participation remained unutilized without any justifiable reasons. This would have led to lack of awareness among farmers about the schemes.

¹⁰⁰ Entry point activity, institution and capacity building, training cost, adoption of proven/new technology and preparation of detailed project report.

- **Shortfall in works taken up and completed**

In the XIth Five Year Plan (2007-12), it was decided to cover 1.81 lakh hectare of land under conservation works with a projected cost of ₹ 210 crore. As of March 2011, only 40 thousand hectare had been covered at a cost of ₹ 40.62 crore, leaving 1.41 lakh hectare uncovered

Government stated (October 2011) that due to late receipt of funds from GOI, the works could not be completed within time.

- **Impact of NWDP**

As per the evaluation report on watersheds of NWDP prepared by the Agricultural Finance Corporation, in September, 2008, the entry point activity had been executed in each watershed and efforts had been made for formation of Self Help Groups, User Groups and establishment of watershed association as well as Watershed Committees. However, these community organizations were found to be weak in executing their day-to-day activities. After September 2008, no impact assessment was done by the Government or Government approved agency.

Government stated (October 2011) that the final assessment report would be furnished, which was awaited (November 2011).

2.4.8.4 Marathwada Watershed Development Mission (MWDM)

- **Non-utilization of scheme funds earmarked for people's participation**

The MWDM guidelines stipulate that funds should be earmarked in each project for people's participation to create awareness among farmers about the schemes. During the test check of two talukas (Kinwat and Latur), it was noticed that funds of ₹ 60 lakh against the total release of ₹ 66 lakh during 2005-10 for people's participation remained unutilized. On this being pointed out by audit, no specific reason was offered by the TAOs, Kinwat and Latur.

- **Shortfall in works taken up and completed**

Eight Mega watersheds were chosen for eight¹⁰¹ districts and the geographical area of the watershed to be covered was 1,82,480 ha in 218 villages. Under these watersheds, 285 Mini watersheds had been created and 1,77,944 ha was covered, by spending ₹ 131.43 crore (up to March 2011) leaving 4,536 ha uncovered as shown in **Appendix 2.4.9**.

Government stated (October 2011) that the shortfall was due to non-availability of funds as per demand. However, details of funds demanded and dates of receipt were awaited (November 2011).

2.4.8.5 Vidarbha Watershed Development Mission (VWDM)

- **Non-improvement of water availability**

One of the objectives of the Vidarbha Watershed Development Mission (VWDM) was to increase productivity through improvement in water availability in order to control cases of farmers' suicides in Vidarbha region due to crop failure.

VWDM did not achieve the basic objective of controlling the suicide cases of farmers

¹⁰¹ Aurangabad, Beed, Hingoli, Jalna, Latur, Nanded, Osmanabad and Parbhani

Scrutiny in audit revealed that VWDM did not achieve the basic objective of controlling the suicide cases of farmers despite expenditure of ₹ 16.44 crore as depicted in **Table 6**.

Table 6: Cases of farmers' suicide

Sr. No.	Name of TAO	Expenditure (₹ in crore)	No. of suicide cases (2008-11)
1	Arni	4.88	17
2	Umarkhed	5.05	57
3	Sindkhed Raja	6.51	15
	Total	16.44	89

(Source: Departmental figures)

Government stated (October 2011) that due to less rainfall, the objective could not be achieved. Efforts should be made to reduce suicides of farmers by taking up more watershed works.

- **Shortfall in completion of watershed works**

Out of a total of 703 watersheds selected for soil and water conservation treatment, 667 watersheds were completed as of March 2011, leaving a balance of 36 incomplete watersheds.

Government stated (October 2011) that the shortfall was due to non-availability of funds as per demand. However, details of funds demanded and dates of receipt were awaited (November 2011).

2.4.8.6 Accelerated Watershed Development Programme (AWDP)

- **Non-observation of norms during execution of works**

As per a decision (January 2008) by a committee¹⁰² under the chairmanship of the Vice President, Maharashtra State Water Conservation Advisory Council, the activity of compartment bunding was to be taken up on priority basis under AWDP. It was instructed (January 2008) in the meeting that a piped outlet be provided in compartment bunding so that the water would be diverted to nearby fields if the storage was more than one foot. This would also help in increasing the water level across the land as well as to conserve the soil.

Out of the 39 test-checked TAOs, AWDP was implemented in 37 TAOs and in two TAOs, non-provision of outlets to compartment bunding was noticed.

- In TAO, Kadegaon, it was noticed (August 2011) that compartment bunding works, covering an area of 2,679.29 hectare, costing ₹ 1.67 crore, were executed without the provision of the outlets. Hence, the purpose of increasing the water level across the land as well as conserving the soil was defeated. The TAO, Kadegaon stated (August 2011) that the estimates were technically sanctioned by SDAO, Vita and there was no provision for outlets in any of the estimates.
- In Sagamner Taluka, it was observed (July 2011) that during 2008-11, works of compartment bunding in 4,606 ha were taken up requiring 18,424 RCC pipes as per the norms of four pipes per hectare. However, only 6,211 pipes costing ₹ 37.27 lakh were purchased and distributed to villages through CAOs.

Compartment bunding works were executed without provision of outlets

¹⁰² An apex body in the State for watershed management

- During a joint field visit by Audit and departmental officials to Mendhewan and Velhare villages in Sangamner taluka which were provided with 1,297 pipes, it was noticed that only five pipes had been used for the work of compartment bunding and the remaining pipes were lying scattered in the villages.



Pipes for compartment bunding lying scattered in the villages

The TAO accepted (July 2011) the fact and stated that the farmers would be convinced to install the pipes.

Government stated (October 2011) that a detailed reply would be submitted, which was awaited (November 2011).

- **Payment to contractors, pieceworkers in cash**

Cash payments to the contractors and pieceworkers were made in violation of Government rules

According to Rule 355 (2) of Maharashtra Treasury Rules (MTR), payments should be made to the contractors/suppliers through cheques.

Out of 39 test-checked TAOs, in two TAOs (Kadegaon and Akole), it was observed that an amount of ₹ 1.99 crore during 2006-11 was paid in cash to various Circle Agriculture Officers (CAOs) in violation of Government rules. Subsequently, the Circle Agriculture Officers also made cash payment to the contractors and pieceworkers which was irregular and contained risk of fraudulent payments.

Government stated (October 2011) that cash payments were made as the bank network was very scattered in the area. The reply is not acceptable as the TAOs and CAOs should have been asked to open bank accounts at nearest bank branch.

- **Shortfall in works taken up and completed**

Out of the total 2,002 watersheds taken up under this scheme during 2007-11, 1,961 watersheds were completed, leaving a balance of 41 incomplete watersheds.

Government stated (October 2011) that the shortfall was due to non-availability of funds as per demand. However, details of funds demanded and dates of receipt were awaited (November 2011).

This indicates that the targets could not be achieved due to shortage of funds. Government should have ensured availability of funds.

2.4.8.7 Miscellaneous issues

(i) Non-adoption of ridge to valley strategy

The ridge to valley strategy was not adopted in all the schemes

According to the instructions (March 1997) of the Director and provisions of the watershed area development guidelines, soil and water conservation works on watersheds were to be executed by adopting ridge to valley strategy (from upper reaches to lower reaches) to develop marginal lands in upper reaches and reduce siltage in Cement *Nalla Bandhs* (CNB), Mati *Nalla Bandhs* (MNB) or Farm Ponds (FP) in lower reaches.

Out of the selected 39 TAOs, it was observed that in seven TAOs, the ridge to valley strategy was not adopted due to farmers' demand and more thrust was given to the works of CNBs, MNBs and FPs in lower reaches, neglecting the execution of works like Continuous Contour Trenches (CCT), Loose Boulder Structure (LBS), Earthen Structure (ES) and Live Check Dam in upper/middle reaches of watersheds. The cases are detailed in **Appendix 2.4.10**.

- The TAO, Jath stated (June 2011) that the activities of the upper and middle reaches were cancelled due to non-availability of required boulders in the nearby areas for LBS works.
- The TAO, Atpadi stated (June 2011) that considering the demand of farmers and local geographical conditions, more thrust was given to works in lower and middle reaches ignoring works in upper reaches.

The Government stated (October 2011) that in VWDM, more works were taken up in lower reaches considering topography of area. Regarding MWDM, it was stated that the works were deleted due to opposition by farmers.

The replies are not acceptable since all the factors should have been taken into account at the planning stage itself.

(ii) Execution of work in command areas of irrigation projects

Soil and water conservation works were undertaken in command areas of irrigation projects

As per the guidelines of the soil and water conservation programme, villages falling within the command area of irrigation projects/schemes should not be selected for development of watersheds. However, it was observed that in Akole and Ardhapur talukas, soil and water conservation works costing ₹ 3.17 crore and ₹ 35 lakh respectively were taken up in command areas of irrigation projects.

The TAO, Akole stated that works were taken up at the tail end of command area of project where water could not reach.

The reply is not acceptable as taking up of farm ponds in command area was against the scheme guidelines. Besides, there was no record proving that water did not reach the tail end. The reply in respect of Ardhapur had not been received (November 2011).

(iii) Incomplete works under different schemes

Incomplete works indicated poor implementation of the schemes

During 2006-11, soil and water conservation works were taken up in selected schemes. It was observed that out of 39 selected TAOs, in 14 TAOs, works remained incomplete under various schemes. The scheme-wise details of incomplete works along with reasons in the test-checked units are given in **Appendix 2.4.11**. It was observed that the works remained incomplete (June

2011) for reasons, such as poor financial status of beneficiaries, non-release of grants, lack of consent of farmers, disputes between villagers and watershed committees, etc. This indicated poor project planning, lack of awareness among beneficiaries, poor fund management, lack of monitoring and poor implementation of schemes.

Government stated (October 2011) that the latest position of completed works would be submitted, which was awaited (November 2011).

(iv) Non-maintenance of watershed development works

No amount was spent on the maintenance of the watershed works

One of the main objectives of various watershed development programmes implemented was to increase the agricultural productivity in the area and thus raising the financial status of the beneficiaries. Further, as all the structures *i.e.* CNB, MNB, Compartment Bunding (CB), CCT, farm ponds *etc.* of every watershed project were prone to damage due to passage of time and deposition of silt in the water, the water storing capacity of the created structures decreased.

In three test-checked TAOs (Jath, Miraj and Ausa), it was noticed that though an amount of ₹ 34.48 crore (Jath ₹ 26.74 crore, Miraj ₹ 5.16 crore and Ausa ₹ 2.58 crore) was spent on soil and water conservation works under NWDP, NADP, AWDP, RVP during 2006-11, no amount was spent on their maintenance.

Thus, in the absence of any arrangement for its future maintenance, the life and utility of these assets created with huge Government funds would be reduced and might not give the expected results.

While accepting the facts, Government stated (October 2011) that provision has been made in 2011-12 for maintenance of watershed development works.

(v) Irregularities in procurement of cement

There was no penalty clause in the rate contract in case of late supply of cement by the rate contract firm

Scrutiny of records in DSAO, Ahmednagar revealed the following irregularities in payment.

- According to condition number 2 (a) of the terms and conditions for supply of cement, 98 *per cent* of the cost of the cement was to be paid by the DSAO on actual receiving of cement consignment with the railway receipts from the manufacturers. The remaining two *per cent* of the cost of cement was to be paid within 30 days from the receipt of cement in good condition.

It was noticed that full payment (₹ 35.66 lakh) was made against the total quantity (1,160.13 MT) of cement indented during 2009-11. Only 1,000 MT cement was supplied (July 2011) and the remaining 160.13 MT cement costing ₹ 4.92 lakh was not supplied as of July 2011. As there was no penalty clause in the rate contract in case of late supply of cement by the rate contract firm, no penalty could be imposed to the contractor for non-supply of the full quantity.

While accepting the point, the Government stated (October 2011) that the terms and conditions would be revised by inclusion of a penalty clause.

- Incorrect freight charges claimed by a rate contract firm for transportation of cement upto Ahmadnagar resulted in excess payment of transportation charges as detailed in **Table 7**.

Table 7: Payment of transportation charges

Year	Cement procured (MT)	Freight charges as per company's bill (₹ per MT)	Actual freight as per railway authority (₹ per MT)	Excess freight charged by company (₹ per MT)	Excess payment (₹)
2008-09	3,810.58	488.80	420.30	68.50	2,61,025
2009-11	1,160.13	480.00	420.30	59.70	69,260
Total	4,970.71				3,30,285

Government agreed (October 2011) to verify the facts from the railway authorities.

2.4.9 Targets and achievements

The position of targets and achievements in respect of selected schemes in the State during 2006-11 was as detailed in **Appendix 2.4.12**.

- It was observed under NADP that against the target of 79,000 farm ponds to be constructed, 62,018 farm ponds were constructed during the period 2007-11.
- Under RVP, soil and water conservation works in 2,06,034 ha were to be executed during 2006-11. However, only 1,74,290 ha were covered.
- In NWDP, 1,37,447 ha were targeted during 2006-11, against which 1,36,849 ha were covered.
- Under MWDM, a total area of 1.77 lakh ha was selected for treatment in eight Mega watersheds and 285 Micro watersheds. The works were still in progress.
- Under VWDM, a total area of 7.08 lakh ha was selected for treatment in 703 watersheds. However, 667 watersheds were completed and the remaining 36 watersheds were incomplete as of March 2011.
- Under AWDP, 2,002 watersheds were targeted for 2007-11, against which 1,961 were completed.

2.4.10 Impact on water table

Records furnished by Groundwater Survey and Development Agency (GSDA) in nine selected districts were analysed to assess the impact on the water table during the period 2006-11. The following points were noticed:

- Static water level (SWL) was more than the average SWL of the last five years at all the talukas of Sangli and Latur districts. While increase (May 2011) in SWL ranged from 0.10 m to 2.28 m in Sangli district, the increase (October 2010) in Latur district ranged from 0.95 m to 5.12 m.

Decrease in Static Water Level was observed in 20 talukas of three districts

- SWL of May 2011 was more than the average SWL of the last five years at all except one taluka of Nanded district, which ranged from 0.08 m to 2.54 m. SWL at Kinwat taluka decreased by 0.17 m.
- SWL had decreased in October 2010 from the average SWL of September taken during the last five years in 12 out of 15 talukas of Raigad district. Decrease in SWL ranged from 1.95 m to 0.037 m. SWL increased in the remaining three talukas of the district in the corresponding period, which ranged from 0.03 m to 2.43 m.
- Out of 15 talukas of Nashik district, SWL increased in eight talukas which ranged from 0.08 m to 2.08 m while the remaining seven talukas it was reduced.

From the analysis made above, it could be concluded that implementation of selected six schemes and other schemes of soil and water conservation funded by GOI and State Government, contributed to increase in SWL in all the talukas of Sangli and Latur. However, decrease in SWL was observed in one taluka of Nanded district, 12 talukas of Raigad district and seven talukas of Nashik district.

2.4.11 Monitoring and internal control mechanism

2.4.11.1 Internal control

Inventory management

Out of 39 test-checked TAOs, in two TAOs, cement stock registers were not maintained, as discussed below:

Vital records were not maintained

- Scrutiny of records of the TAO, Jath revealed that 1,976.80 MT cement costing ₹ 77.58 lakh was procured during the period from 2006-11 but no stock book was maintained.

The TAO, Jath stated (June 2011) that there was no separate godown for the Agriculture Department and the cement was directly supplied to the site of work and the records were kept at the circle level.

The reply is not acceptable as the TAO should have kept an up-to-date record of cement supplied to all CAOs under his control to prevent the chances of misuse, pilferage and excess stocking at the CAO level.

- Similarly, in TAO, Darwha, it was observed that 832.23 MT cement costing ₹ 28.77 lakh was procured during the years 2006-09. However, records relating to receipt, distribution and balance stock of cement were not produced to audit inspite of requests.

The Government stated (October 2011) that the stock register was now being maintained.

However, the fact remains that the records were not produced to Audit for scrutiny.

Non-maintenance of work registers

The Soil Conservation Manual prescribes maintenance of work registers showing details of works, by each CAO, which should be examined every

month by the TAO. In eight test-checked TAOs, it was noticed that the CAOs working under these TAOs, had not maintained work registers. As such, audit could not verify which works were administratively approved, technically sanctioned and what the costs of the work were.

The Government stated (October 2011) that work registers were now being maintained in all the eight TAOs.

2.4.12 Conclusion

Watershed projects were implemented without comprehensive integrated planning. Release of funds was maximum in the month of March indicating avoidable rush of expenditure. Farm ponds under the National Agriculture Development Programme were not serving the intended purpose of percolation of water. The Vidarbha Watershed Development Mission was not successful. Components were not executed in the prescribed sequence by adopting the ‘ridge to valley’ strategy for proper development of watersheds. Watershed treatment works were taken up in command areas of irrigation projects. Works under the test-checked schemes remained incomplete. Implementation of soil and water conservation works, however, did contribute to increase in the Static Water Level in all the talukas of Sangli and Latur districts. However, decrease in Static Water Level was also observed in 20 talukas of three districts. The targets set for the test-checked schemes were not achieved due to financial constraints. The internal control mechanism was weak, as maintenance of records was improper.

2.4.13 Recommendations

Government may:

- prepare a State level comprehensive and integrated plan covering all the watershed development schemes;
- ensure availability of funds and avoid delays in their release;
- implement soil and water conservation works in sequence, adopting the “ridge to valley” strategy; and
- evolve an effective monitoring and control mechanism.

The matter was referred to the Government (September 2011). Reply had not been received (October 2011).

Higher and Technical Education Department

2.5 Working of the Directorate of Vocational Education and Training

Highlights

The Department of Higher and Technical Education is responsible for creation of trained and skilled manpower in different trades required for the domestic industry by imparting structural training and nurturing a technical and industrial attitude in the minds of the youth.

Audit of the Directorate of Vocational Education and Training under the Higher and Technical Education Department for the period 2006-11 revealed that there were shortfalls in implementation of the approved plan due to non-availability of land for the envisaged projects, lack of equipment as well as shortage of instructors and enrolment capacity. The Industrial Training Institutes (ITI) in the State could not supply a skilled work force to the industries as envisaged and the objective of bridging the gap between demand and supply of a skilled work force to the industries could not be achieved. There were acute shortfalls in inspections ranging from 75 to 100 per cent. The percentage of failures of students ranged from 58 to 83 per cent in the Centre of Excellence scheme (BBBT) due to anomalies in the course structure. Acute shortfall in key posts severely affected the performance of the department.

Seven schemes envisaged in the five year plan could not be implemented as the Government had not released funds amounting to ₹ 29.50 crore.

(Paragraph 2.5. 6.1)

Funds of ₹ 1.20 crore withdrawn from the treasury for various purposes by 15 DDOs remained unutilised for periods ranging from one to three years. The recoverable amount from grant-in-aid (GIA) institutions on account of inadmissible expenditure, which amounted to ₹ 6.66 crore remained unadjusted (August 2011). Further, the department released GIA without obtaining and verifying utilisation certificates. Utilisation certificates worth ₹ 157.07 crore pertaining to 2006-11 were still outstanding.

(Paragraph 2.5.7.2)

Infrastructure facilities and instructors were severely lacking for affiliated trades/units in five Industrial Training Institutes (ITI). Four ITIs gave admission to 88 students in non-affiliated trades rendering them ineligible for Apprentice Training Scheme training and National Council for Vocational Training certificates.

(Paragraph 2.5.8.1)

In ITI Kinwat, Nanded, equipment costing ₹ 95.60 lakh procured in March 2009, was lying idle in its workshop for over two years as electrification work was in progress in the Centre of Excellence.

(Paragraph 2.5.8.3)

Thirty three out of 34 proposed (2008) Government Technical High School were opened during 2008-11 but the Government had accorded sanctions for recruitment of faculty in March 2011 i.e. after three years.

(Paragraph 2.5.8.4)

A Minimum Competency Vocational Courses (MCVC) scheme introduced (1988-89) for augmenting employment and self-employment opportunities for candidates at the 10 plus two level and to reduce the admission load on higher education. The objective of the scheme was defeated as 31450 out of 52761 students declared successful in the MCVC scheme had opted for higher education.

(Paragraph 2.5.8.5)

Machinery and equipment worth ₹ 5.73 crore were lying idle for periods ranging from one to 84 months due to improper material management

(Paragraph 2.5.9)

Shortfalls ranging from 34 to 40 per cent in supply of students for Apprentice Training Scheme by the ITIs resulted in non-achievement of the objective to bridge the gap between demand and supply of skilled work force for industry.

(Paragraph 2.5.10.1)

There were shortfalls ranging between 75 and 100 per cent in conducting technical inspections which resulted in non-identification of persistent problems such as idle and defunct machinery, shortage of instructors and inadequate training facilities.

(Paragraph 2.5.12.1)

2.5.1 Introduction

Vocational Education and Training has emerged as one of the most effective human resource development strategies to train the work force to produce skilled manpower for rapid industrialization and national development. Skill and knowledge are the driving forces of economic growth and social development of the country. The Office of the Director, Technical Education was established (1948), under the Department of Higher and Technical Education to conduct technical and vocational courses. Government of India (GOI) introduced (1950) the Craftsmen Training Scheme (CTS); in order to provide a steady flow of skilled manpower for different trades to the industries, to raise the quality and quantity of industrial production by systematic training of workers and to reduce unemployment in educated youth by equipping them with necessary skills for suitable employment. The scheme has been shaping craftsmen to meet existing as well as future manpower needs, through the vast network of Industrial Training Institutes (ITI) in the various States. After passing trade test under CTS, candidates are required to undergo 'on the job training' in industries under the Apprentice Training Scheme (ATS) so that practical skills required for various occupations are acquired.

The Directorate of Vocational Education and Training (DVET) was established (1984) to bring coordination among all levels of technical courses across the State. 'Vocational Courses' were conducted through technical schools and junior colleges and 'Training' through ITIs. The post of DVET was bifurcated (March 1998) into two posts *viz.*, Director (Vocational Education) and Director (Training) for effective management of training and trained manpower. DVET had, in all, 1727¹⁰³ Government and aided institutes/schools functioning under its jurisdiction.

There are 416 ITIs in the State, out of which 276 are in own buildings, 113 are in rented premises and the remaining 27 are located in Government buildings. The minimum qualification for enrolment in the courses of ITIs is VIII to XII standard as per the requirement of the trades. Enrolment in ITIs is made through advertisements in local newspapers and displaying notices at each ITI in the State. Selection of candidates is made on the basis of merit and reservations as per norm. Though the number of applicants to ITIs increased from 2.92 lakh in 2006-07 to 3.95 lakh in 2009-10, the intake capacity increased from 67116 to 93630 only. Against the total seats located in the industries (6.29 lakh) for apprenticeship training in the industries during 2006-11, the ITIs could supply 3.95 lakh candidates for apprenticeship training and thus failed to bridge the gap between demand and supply of skilled man power to the industry.

Government Technical High Schools (GTHS) & Grant-in-Aid (GIA) institutions (Vocational Education) conduct pre-vocational¹⁰⁴ and vocational schemes¹⁰⁵ at school and junior college level to create interest and liking for technical subjects among students at the school level.

Minimum Competency based Vocational Course (MCVC) schemes meant for augmenting self-employment and reducing the admission load on higher education had failed to achieve its objectives as 31450 out of 52761 students declared successful (*i.e.* 60 per cent) during 2007-10 had opted for higher education instead of employment.

2.5.2 Organisational set-up

The Principal Secretary to the Government of Maharashtra, Higher and Technical Education Department (Department) is the head of the department. He/she is responsible for policy making and approval of programmes and exercises overall control over the activities of the department through DVET, Regional Offices (RO) and District Vocational Education and Training Offices at State, regional and district levels respectively.

Director (Vocational Education) and the Director (Training) are responsible for implementation of the various programmes in the State as envisaged by the department. There are six regions under the Directorate, each headed by a Joint Director. At the district level, a District Vocational Education and Training Officer (DVETO) is responsible for the overall supervision of the

¹⁰³ ITIs-416, Government Technical High School-156, Jr.Colleges-1155(Govt. 102, Aided-1053), Out of 416 ITIs—General-306, Tribal-89, Women-15, Special Component Plan-4, Minority-2.

¹⁰⁴ 8th, 9th and 10th standards having one vocational subject in the syllabus.

¹⁰⁵ MCVC schemes run in Junior Colleges.

ITIs, GTHSs and institutes running MCVC schemes and Bifocal and Pre-Vocational courses.

2.5.3 Audit objectives

The audit objectives were to assess whether:

- the planning with regard to implementation of the schemes of vocational education and training were made properly;
- the financial management was efficient for managing these schemes;
- the programmes and activities were implemented efficiently and effectively;
- effective monitoring, internal audit and evaluation mechanisms, is in place.

2.5.4 Audit criteria

Audit findings were benchmarked against the following criteria:

- (i) Training Manual for Industrial Training Institutes;
- (ii) Maharashtra Budget Manual;
- (iii) Apprenticeship Training Act, 1961;
- (iv) Bombay Financial Rules, 1959;
- (v) Maharashtra Treasury Rules, 1968;
- (vi) Procurement Manual for World Bank Aid and
- (vii) Orders and instructions issued by GOI and State Government from time to time

2.5.5 Scope and methodology

The audit was conducted between April and August 2011 and the records covering the period 2006-07 to 2010-11 were test-checked in audit. The offices of the Principal Secretary, Higher and Technical Education Department (HTE) and the Directorate at Mumbai and all the six¹⁰⁶ ROs were identified for audit. Functioning of nine¹⁰⁷ out of 35 DVETOs were selected for test check. Records of 55 drawing and disbursing officers were test checked in audit consisting of six ROs, 28 ITIs, 11 GTHS, nine DVETOs, and one directorate were covered.

In addition test-checked units comprising of 21 MCVC and 12 bifocal in 21 junior colleges were also covered (**Appendix 2.5.1**). These samples were selected using the simple random sampling without replacement method.

An entry conference was held with the Joint Secretary in May 2011 wherein the audit objectives, criteria and audit coverage were discussed and agreed upon. The findings were discussed at the exit conference held in November 2011, with the Principal Secretary, who accepted most of the audit observations.

¹⁰⁶ Mumbai, Pune, Nashik, Aurangabad, Amravati and Nagpur

¹⁰⁷ Mumbai(suburban), Raigad, Nashik, Jalgaon, Aurangabad, Nanded, Nagpur, Amravati and Pune

Audit findings

2.5.6 Planning

During audit, the following deficiencies were noticed:

2.5.6.1 Five Year Plan (2007-2012)

Schemes envisaged in the five year plan could not be started due to non release of funds

In order to achieve their main objectives of creating skilled manpower and to cater to the increasing demands of the industry, the department had made a five year plan for the period 2007-2012 for implementation of its various programmes and activities which was further bifurcated into Annual Plans and was prioritized as per the availability of funds. The large demand for skilled and semi-skilled work force of the local industries as revealed by the survey conducted by the Confederation of Indian Industries (CII) was taken as the base for the planning process. Besides, seats located in the industries in each district, collected by the Assistant Apprentice Advisor (AAA) and consolidated at the State level by the Director (Training) who was the Apprentice Advisor, were taken into consideration for preparation of annual plans.

Audit scrutiny revealed that for seven schemes envisaged in the Five Year Plan and followed up in the Annual Plans, Government had not released funds amounting to ₹ 29.50 crore till date (August 2011), as detailed in **Appendix 2.5.2**, delaying the implementation of the schemes. This indicated lack of foresight at the planning stage besides depriving the candidates of the envisaged opportunities.

While accepting the facts, the Joint Secretary stated (November 2011) that the funds could not be released as the same were not made available by the Finance Department. It was added that these schemes were already being covered under existing schemes and as such, it was not feasible to run separate institutes for physically handicapped, girls *etc.* The reply is not acceptable as the feasibility of the schemes should have been reviewed and revised annually as per requirements.

2.5.7 Financial Management

As against a total Plan outlay of ₹ 1,454.08 crore, Government budgeted ₹ 1,363.08 crore and spent ₹ 1,244.56 crore in the four-year period 2007-11 in respect of Plan schemes under Major Heads 2203 and 2230.

2.5.7.1 Budget allocation and Expenditure

The details of budget provisions and expenditure incurred (Plan and Non-Plan) during 2006-11 are given in **Table 1**.

**Table 1 : Budget provisions vis-à-vis expenditure
Major Head 2230: Training (ITI)**

(₹ in crore)

Year	Plan			Non-Plan		
	Provision	Expenditure	(-) Saving (+) Excess	Provision	Expenditure	(-) Saving (+) Excess
2006-07	132.03	112.83	(-)19.20 (15 per cent)	175.94	171.01	(-)4.93
2007-08	189.13	142.95	(-)46.18 (25 per cent)	209.68	204.81	(-)4.87
2008-09	371.27	327.70	(-)43.57 (12 per cent)	210.08	212.77	2.69
2009-10	366.00	359.90	(-)6.1 (2 per cent)	314.44	297.58	(-)16.86
2010-11	308.04	302.12	(-)5.92 (2 per cent)	305.00	280.32	24.68
Total	1366.47	1245.50	(-) 120.97 (9 per cent)	1215.14	1166.49	(-)48.65

Source: Data furnished by department

Note: The above expenditure included ₹ 248.95 crore under Plan expenditure under Major Head 2230 funded from World Bank Aid.

Table 1 reveals that savings ranged from two to 25 per cent during 2006-11. We noticed in audit that on the one hand, vital schemes and programmes could not be implemented due to non-release of funds (as discussed earlier in paragraph 2.5.6.1) while on the other hand, there were savings to the extent of ₹ 120.97 crore. The savings, which accrued during 2006-11 were surrendered by the department in March each year.

Funds could not be utilized due to non-creation of posts and delay in release of funds

**Table 2- Budget provisions vis-à-vis expenditure
Major Head 2203*: Vocational Education**

(₹ in crore)

Year	Plan			Non-Plan		
	Provision	Expenditure	(-) Saving (+) Excess	Provision	Expenditure	(-) Saving (+) Excess
2006-07	13.42	12.03	(-)1.39 (10 per cent)	219.45	222.92	+3.47
2007-08	12.15	11.34	(-)0.81 (7 per cent)	240.05	237.19	(-)2.86
2008-09	38.69	33.79	(-)4.90 (13 per cent)	278.27	282.54	+4.27
2009-10	33.39	25.26	(-)8.13 (24 per cent)	341.30	341.14	-0.16
2010-11	44.41	41.50	(-)2.91 (7 per cent)	386.49	380.83	(-) 5.66
Total	142.06	123.92	-18.14	1465.56	1464.62	(-) 0.94

*80 per cent of the expenditure incurred under non-plan was on Grant-in-aid only

Table 2 reveals that savings ranged from seven to 24 per cent respectively during 2006-11.

The Joint Secretary stated (November 2011) that savings under both the heads of Training and Vocational Education occurred due to non-filling of vacant posts in reserved categories. Further, the full budgeted amount was not released in time or not at all released by the Finance Department, which were beyond the control of the department.

Vocational Education

2.5.7.2 Release of Grants-in-Aid to aided institutes without assessment

Government provided grants-in-aid (GIA) for payment of salaries to teaching staff and non-salary grants for purchase of raw materials and other related expenditure for pre-vocational and '10 plus two' vocational courses subject to fulfilling of the prescribed eligibility conditions. The department had to ensure that the annual assessment of salary and non-salary grants was carried out by the Directorate through the Regional offices of DVET to ascertain the utilisation of grants. Any unspent grants and inadmissible expenditure were required to be recovered or adjusted in the subsequent grants. The assessment position in the six ROs is indicated in **Table 3**.

Table 3: Statement showing pending assessment of GIA institutions

Name of the Regional Office	Total number of institutes	Number of institutes assessed	Period up to which assessed	Number of institutes pending for assessment
Nasik	176	123	2008-09	53
Aurangabad	168	152	2008-09	16
Amravati	237	229	2009-10	8
Mumbai	150	42	2009-10	108
Pune	346	346	2009-10	--
Nagpur	165	160	2009-10	5
Total	1242	1052		190

Source: Data compiled by audit

We noticed that of the 1242 institutions in the State receiving GIA from the Government, the assessment of 1052 units had been conducted up to 2008-09 and in certain cases up to 2009-10 and 190 institutions had not been assessed till August 2011. In these 1052 units, we further noticed that annual assessments were not being done and assessments for periods ranging from five to 10 years were being done together. The total recoverable amounts from the assessed institutions under the five ROs (except Pune) on account of inadmissible expenditure and non-refund of tuition fees to Government amounted to ₹ 6.66¹⁰⁸ crore (Aug 2011). As RO, Pune had not adjusted the tuition fees collected before releasing further grants, the actual recoverable amounts or inadmissible GIA could not be verified. Out of the 190 institutions yet to be assessed till August 2011, 64¹⁰⁹ institutions were pending for assessment for periods ranging from 10 to 16 years and the possibility of fraud or misutilisation of funds in these institutions could not be ruled out.

Further, as per provisions contained in the Bombay Financial Rules, 1959, read with Appendix B of the Secondary School Code, GIA to institutions were to be released only after receipt and verification of utilisation certificates (UCs) for the earlier grants. We noticed in audit that during 2006-11, ROs released GIA without obtaining and verifying UCs. As on 31 October 2011, UCs valued at ₹ 157.07 crore pertaining to the period 2006-11 were

Regional Offices released grants-in-aid without verification of utilisation certificates

¹⁰⁸ RO, Mumbai: ₹ 28 lakh, RO, Nasik: ₹ 2.31 crore, RO, Aurangabad: ₹ 1.70 crore, RO, Nagpur: ₹ 1.15 crore, RO, Amravati: ₹ 1.22 crore.

¹⁰⁹ RO; Mumbai-3. RO; Nasik-53, RO; Nagpur-3, RO; Amravati-5.

outstanding as per data obtained from the offices of the Accountant General (Accounts & Entitlements), Mumbai and Nagpur.

On this being pointed out, the ROs attributed (between May 2011 and August 2011) the shortfall in assessment to shortage of staff and added that there was no mechanism to watch the submission of UCs. The fact, however, remained that annual assessment was not being done and GIA was being released without recovering the inadmissible amounts.

The Joint Secretary stated (November 2011) that instructions were being issued to the Regional Joint Director to complete the internal audit and assessment of the institutes before releasing further grants.

2.5.7.3 Irregularities in Cash Book Maintenance (Training and Vocational Education)

The following deficiencies were noticed in both the Training and Vocational Education directorates:-

Cash management

Funds amounting to ₹ 1.20 crore for various purposes were neither disbursed nor remitted back to the Government.

- As per the provisions of the Bombay Financial Rules (BFR), the closing balances of bank statements and cash books should be reconciled every month and certificates to that effect should be recorded in the cash books by the DDOs. During scrutiny of cash books of the 55¹¹⁰ DDOs test-checked, we noticed that 20 DDOs (includes three GTHS) had not reconciled the differences between the cash book balances and bank statements for periods ranging from one to six months (**Appendix 2.5.3**) as such audit could not ascertain whether the balances taken to the cash book were actually physically present in the bank accounts.
- Further, as per Rule 55 of BFR, surprise verification of cash balances was required to be conducted by the heads of offices at least once in a month to ensure that the balances in the cash books were physically available and no money had been misappropriated, even temporarily.
- In 10 (includes two GTHS) out of 55 DDOs test-checked, we noticed that the DDOs disregarded the provision relating to cash management and no surprise verification of cash balances was conducted during the period 2006-11 (**Appendix 2.5.3**).
- As per provisions contained in Rule 98(2) of MTR read along with provision 157 of the Maharashtra Budget Manual, reconciliation of remittances and drawals from Treasury/Pay and Accounts Office was required to be conducted every month and a certificate to that effect was to be obtained and kept on record for verification. However, 19 (includes three GTHS) DDOs test-checked had not carried out reconciliation of remittances with treasury records (**Appendix 2.5.3**).

While accepting the observations made by Audit, the Joint Secretary stated (November 2011) that necessary instructions in this regard had been issued (November 2011) to the Directorate and field offices.

¹¹⁰ 28-ITIs; 11-GTHSs; nine-DVETOs; six-ROs and one –Directorate.

2.5.7.4 Personal Ledger Account cash book

Personal Ledger Account (PLA) cash books are maintained to record non-governmental transactions. PLA cash books are maintained by the Principals/Head Masters of ITIs and GTHS for crediting fees, deposits and receipts from various short-term courses conducted by them. Further, as per circular issued (April 2011) by the Directorate, the institutes/schools are allowed to make payment for procurement of raw materials and other related expenses from the funds so received.

On scrutiny of 39 DDOs, who were required to maintain PLA cash-books out of the 55 DDOs test-checked, we noticed the following:

- Eight DDOs had not opened PLAs for periods ranging from five to 20 years and credited the funds received to the savings bank account of institutes or PLAs operated by other institutions having PLAs. (**Appendix 2.5.4**). Test-check revealed that ITI (Girls), Jalgaon had transferred (April 2011) an amount of ₹ 22.46 lakh to the PLA of the District ITI, Jalgaon since they did not have a PLA.
- A total of 19 (includes five GTHSs) DDOs had not reconciled PLA cash books and treasury pass book balances for periods ranging from three to six months. The total unreconciled amount worked out in audit was ₹ 66.27 lakh (**Appendix 2.5.4**).
- A total of 12 (includes three GTHSs) DDOs had not maintained PLA cash books for periods ranging from six to 48 months (August 2011). As on 31 March 2011, an amount of ₹ 9.88 lakh was lying in the cash chest of GTHS, Nagpur. As no cash book was maintained, audit could not verify the actual cash balances as on 31 July 2011 (**Appendix 2.5.4**).
- Eight (includes one GTHS) DDOs test-checked had not carried out surprise verification of cash balances. (**Appendix 2.5.4**).
- An 'Institute Development Fund' (IDF) was created out of the fees collected from the students and revenue generated through short-term courses which were to be utilised for development of the institutes. In 23 (includes six GTHSs) DDOs, IDF to the extent of ₹ 7.98 crore (includes ₹ 1.21 crore against GTHSs) were lying unutilised (July 2011).

Thus, it is seen that subordinate offices failed to monitor and control the cash transactions. As the PLA cash book was not being properly maintained, the actual amounts received and money transferred or remitted into Government account and any expenditure from it could not be verified.

While accepting the observations made by the audit, the department stated (November 2011) that necessary instructions in this regard had been issued in November 2011 to the Directorate and field offices.

2.5.7.5 Drawal of funds not required for immediate disbursement

Rule 282(2) of the Maharashtra Treasury Rules (MTR), 1968 stipulates that money should be withdrawn from the treasury only if required for immediate disbursement. On scrutiny of the cash books and records of 55 selected DDOs we noticed that funds amounting to ₹ 1.20 crore, withdrawn for various purposes *viz.* payment of salaries, contingencies, purchase of machinery and

equipment were neither disbursed nor remitted back into the Government account for periods ranging over one to three years and were lying unutilised in respective accounts of 15 DDOs (includes one GTHS) (**Appendix 2.5.5**). This indicated weak budgetary control besides drawal of funds not required for immediate disbursement, which was in contravention to the provisions of MTR.

While accepting the facts and figures, the department stated (November 2011) that necessary instructions in this regard have been issued in November 2011 to the Directorate and field offices.

2.5.8 Programme implementation

Programme implementation includes affiliation of trades and execution of various schemes such as the Craftsman Training Scheme (CTS), World Bank Assisted Vocational Training Improvement Project, upgradation of ITIs through Public Private Partnership (PPP) schemes (under Training) and MCVC schemes (under Vocational Education). The following deficiencies were noticed in the implementation.

Training (ITIs)

2.5.8.1 Affiliation of trades in Industrial Training Institutes

The Government of India (GOI) set up (1956) a National Council for Vocational Training (NCVT), an advisory body, which prescribed an ‘affiliation’ clause and laid down specific norms ensuring the standards and uniformity of training at the national level in ITIs such as syllabi, scale of tools and equipments, space, faculty *etc.* The ITIs seeking affiliation for the trades were required to fulfill the prescribed norms.

As per the terms and conditions¹¹¹ for affiliation to NCVT, the institutes were to adopt the standards¹¹² laid down by NCVT. On inspection by the State Directorate or DGE&T, if it was found that the institute had failed to maintain the prescribed norms for the affiliated trade, the matter was reported (by the Regional Offices) to the State Director who could initiate action for de-affiliation.

A student could appear for the All India Trade Test (AITT) only if he was trained in a trade affiliated to DGET. After passing the AITT, the student became eligible for the NCVT certificate, which is recognised for services in GOI, State Governments and reputed private and public sector establishments.

On scrutiny of records of 28 ITIs test-checked, we noticed that infrastructure facilities and instructors were severely lacking for the affiliated trades/units in five ITIs as indicated in **Appendix 2.5.6**.

Although affiliation was granted to the said trades and units, deficiencies in basic requirements *viz.* space, equipment and instructors prevalent in these ITIs and noticed in audit could not be detected by the department due to severe shortfalls in inspections. Thus, failure of the department to ensure timely

¹¹¹ (Annexure IV to Appendix XIX [PARA 42(b)] of the Training Manual for ITIs) formulated by the DGE&T

¹¹² Regarding syllabi, scale of tools and equipments, shop layouts and availability of instructional staff with requisite qualification and experience

inspections resulted in non-identification of defaulting institutes, as a result of which, no remedial action could be instituted to improve infrastructure affecting the quality of training in the said trades.

While accepting the facts, the Joint Secretary stated (November 2011) that at the time of affiliation, the requisite infrastructure and instructors were ensured but due to aging and depreciation, the machinery and equipment were worn out and required replacement. Similarly, due to transfer or retirement of instructors, the posts remained vacant and were being filled in due course. The reply is not acceptable because deficiencies in machinery and manpower affected the quality of training given to the students and defeated the objective of affiliation.

Government of India reiterated (December 2010) that no admission was allowed in NCVT trades until affiliation was granted. However, test check of ITIs revealed that admissions were being granted and students seeking admissions to non-affiliated trades were being made to sign bonds giving their consent to receiving State Certificates for Vocational Training (SCVT). However, the implications of the same were not clarified in the bonds. Students who received training in non-affiliated trades were not eligible to appear in All India Trade Test (AITT) and consequently were rendered ineligible for NCVT certificates. Implications of such courses should have been explained to the students clearly, as this would have a major impact on their future careers. On scrutiny of 28 test-checked ITIs, we noticed that four¹¹³ ITIs gave admission to 88 students in non-affiliated trades as a result of which, the students were rendered ineligible for NCVT certificates.

The Joint Secretary stated (November 2011) that it was only in exceptional situations that the students were allowed to appear in SCVT examinations. The fact, however, remained that the implications of taking admission in non-affiliated trades and SCVT certificates were not explained to the students and as a result putting their careers to risk.

2.5.8.2 Shortfall in implementation of schemes

On scrutiny of records in 28 ITIs and 11 GTHSs, we noticed that there were shortfalls in implementation of the approved Five Year Plan due to non-availability of land and enrolment capacity, lack of equipment, shortage of instructors *etc.* as described below:

Government decided (February 2008) to augment the existing strength of ITIs in Mumbai city and suburbs. Accordingly, 124 new batches were proposed from August 2008 in 12 institutes but the Government sanctioned faculty and other related posts (177) for the said expansion only in March 2011. During test check, we noticed that 30 new batches for 27 trades were to commence training from August 2008, in ITI, Mulund, which had an enrolment capacity of 476 students. Tools, equipment and furniture costing ₹ 1.07 crore were procured (2008) by the institute for the purpose. As the required infrastructure such as space, tools, *etc.*, was not ready and instructors had not been recruited, affiliation could not be obtained (August 2011) from DGET for these batches.

¹¹³ ITI Panvel (Raigad)=16 (August 2007-Hair & Skin Care Trade), ITI (Girls) Aundh (Pune)=17 (August 2011-Dress Making), ITI, Phulambri (Aurangabad)=20(July 2010- Painter), ITI (Girls) Aurangabad=35 (2009-10-Secretarial Practices and Architectural Assistant).

As such tools, machinery and equipments procured were not put to use and were lying idle in the stores for more than three years.

The Joint Secretary stated (November 2011) that delay in sanctioning the post and consequent delays in affiliation procedure resulted in non-commencement of courses on time. The fact, however, remained that the students were deprived and tools, equipments and furniture procured were lying idle as the courses had failed to commence.

Lack of proper monitoring and non-adherence to the norms of affiliation, resulted in repeated rejections of proposals of affiliation by the DGE&T

Government approved (June 2009) commencement of additional shifts for training in ITIs, as the intake capacity of the ITIs across Maharashtra could not fulfill the requirement of the industries. Three of the 28 ITIs¹¹⁴ test-checked had submitted (2009) proposals to DGET to seek affiliation for creation of additional shifts in 49 trades. These proposals were rejected by DGET as the ITIs did not have the required infrastructure as per the prescribed norms. Consequently, the ITIs submitted revised proposals (December 2010 to April 2011) for creation of additional shifts in 35¹¹⁵ trades. The proposals of the ITIs at Jalgaon and Aurangabad were again rejected (June 2011) due to incomplete list of tools, machinery and equipment as per the prescribed norms. Repeated submission of proposals without adhering to the prescribed norms indicated the casual attitude of the ITIs in getting affiliation. As a result, an additional capacity of 480¹¹⁶ seats could not be created.

The Joint Secretary stated (November 2011) that a fresh affiliation report had been submitted to DGET. The reply is not acceptable because repeated submission of deficient proposals indicated lack of seriousness on the part of the institutes, and deprived the students the benefit of training in the trades.

Government sanctioned (October 2007) the commencement of the Tourist Guide trade at ITI, Phulambri, District Aurangabad and machinery and equipment costing ₹ 8.27 lakh were procured (August 2008 to August 2010) for the purpose. The ITI had submitted (May 2009) a proposal to DGET for affiliation of the trade. The Regional Office rejected (May 2011) the proposal for affiliation due to non-availability of instructors as prescribed. As a result, the courses could not commence, depriving the students of the training. Besides, there was idling of machinery and equipment valuing ₹ 8.27 lakh from August 2008 to October 2011.

The Social Justice and Cultural Affairs Department sanctioned (January 2006) the commencement of six¹¹⁷ higher level ITIs for Scheduled Castes (SC) and Nav Buddha students. Financial assistance was to be provided to the ITIs by the Social Welfare Department for recurring and non-recurring expenses. Twelve trades and 32 technical and non-technical posts were sanctioned for each ITI. In two test-checked ITIs at Rahatgaon and Indora, we noticed that only five and four trades respectively had actually commenced out of the 12 trades sanctioned, as the complete set of machinery and equipment could not be procured as the Government had not provided the required funds.

¹¹⁴ ITI Satpur= 22 trades, Aurangabad= 8 trades, Jalgaon= 19 trades

¹¹⁵ ITI Satpur= 15 trades, Aurangabad= 8 trades, Jalgaon= 12 trades

¹¹⁶ ITI Aurangabad= 124, Jalgaon= 356

¹¹⁷ Mumbai, Pune, Nasik, Aurangabad, Amravati, Nagpur

Government stated (November 2011) that as per availability of funds, procurement of machinery and equipment could be made only for four/five trades and therefore only those trades could get the affiliation.

The reply is not acceptable as planning of creation of higher level ITIs for SC and Nav Buddha students could not be achieved fully even after five years. The Government should have made arrangements for the necessary funds for students from these weaker sections of society.

2.5.8.3 Upgradation of ITIs into Centres of Excellence

To keep pace with the technological demands of the industry and expanding universe of knowledge and to produce a multi-skilled work force, GOI decided to upgrade or expand the existing ITIs through two specific funding schemes as discussed in the following paragraphs.

(i) World Bank assisted vocational training improvement projects

DGET proposed (July 2005) to introduce multi-skilled sectors under the Centre of Excellence (COE) scheme by phase-wise conversion and upgradation of ITIs. The scheme was to be funded by the World Bank and implemented by the Ministry of Labour and Employment through DVET and the project cost was to be shared between GOI and State Government in the ratio of 75:25. Each ITI would receive an aid of ₹ 3.50 crore for establishment of COE in ITIs or ₹ two crore for upgradation of existing ITIs.

These COEs would offer training on the basis of a structure¹¹⁸ designed by DGET. NCVT, Delhi would conduct the examinations and issue certificates to the successful candidates.

The scheme envisaged training in multi-skilled courses for production of high quality craftsmen and creation of a work force of international standards. Availability of machinery, equipment and tools as per the syllabi and sufficient space as stipulated in the ITI manual had to be ensured before commencement of the courses.

Eighty seven ITIs¹¹⁹ were selected by the State Government for establishment and upgradation under the COE scheme during 2006-11. Details of funds received and expenditure incurred during the period is given in **Table 4**.

Table 4: Grants released and expenditure incurred under COE scheme (₹ in crore)

Year	Grants received		Total	Expenditure incurred
	Central share	State share		
2006-07	8.44	2.81	11.25	7.80
2007-08	12.91	4.30	17.21	18.63
2008-09	50.00	16.67	66.67	54.98
2009-10	89.03	29.68	118.71	95.34
2010-11	60.99	20.33	81.32	72.20
Total	221.37	73.79	295.16	248.95

Source: Data furnished by department

Note: As against the Central share of ₹ 221.37 crore, only ₹ 203.65 crore had been reimbursed by the Central Government till June 2011.

¹¹⁸ The two year course comprised of Broad Based Basic Training (BBBT) for a year (six modules of two months each) followed by Advance Modules and Specialized Training in the industry for six months each.

¹¹⁹ 2006-07 = 15, 2007-08= 30, 2008-09 = 30, 2009-10 = 12.

In three¹²⁰ ITIs, the COE sectors had not procured the essential machinery and equipment costing ₹ 87.35 lakh for Broad Based Basic Training (BBBT) and Advance Modules till July 2011. In this scenario, the students were deprived of practical training which would pose serious problems in their future careers.

Joint Secretary accepted the facts and stated (November 2011) that necessary instructions had been issued to arrange the training with the help of other institutes where the necessary infrastructure was available.

- To impart training in BBBT and Advance modules under COE, five¹²¹ ITIs had to provide 24 posts of faculty. It was, however, observed that these posts sanctioned by the Government (March 2011) were not filled up (August 2011) resulting in deficient training to the students, defeating the very objective of providing multi-skilled training.

While accepting the facts, the Joint Secretary stated that necessary orders had already been issued (December 2010) to hire instructors on an hourly basis for the posts which were vacant. However, we noticed that the position remained unchanged in these institutes (August 2011)

- In ITI, Kinwat, heavy machinery and equipment costing ₹ 95.60 lakh, procured in March 2009, were lying in the workshop for over two years as electrification works were in progress in the COE workshop. Joint inspection revealed that due to leakages in the roof, rain water seeped onto the machines and the possibility of the machinery being damaged could not be ruled out.

While accepting the facts and figures, the department stated (November 2011) that necessary covers would be installed and leakages in the roof would be plugged at the earliest.

Machinery valuing ₹ 95.60 lakh was lying unprotected and rain water seeped into the same.



ITI, Kinwat, Nanded –machinery lying idle in workshop without installation.

¹²⁰ Aurangabad, Nagpur and Nagothane

¹²¹ Panvel, Nagothane, Jalgaon, Nagpur and Kinwat.

- The percentage of failures in the final examinations of BBT ranged between 58 and 83 in four¹²² ITIs which reflected poorly on the quality of education.

The Principals of the concerned ITIs stated that the results of BBT were low due to certain anomalies in the course structure such as insufficient training period for each module as compared to the syllabus involved, lack of sequence in training of different modules and a long gap between training and examination. While accepting the facts and figures, the Principal Secretary stated (November 2011) in the exit conference that a suggestion in this regard was being forwarded to the GOI.

(ii) Upgradation of ITIs through Public-Private Partnership scheme

Under a Public-Private Partnership (PPP) scheme, GOI decided (November 2007) to upgrade the existing ITIs by the year 2012 through conversion or upgradation of existing trades or commencement of new trades to augment the production of a skilled work force. There was to be an Industry Partner (IP) to assist, guide and promote the courses in ITIs. An Institute Management Committee (IMC) was required to be set up with the IP as Chairman and the Principal of the ITI as the Member Secretary. IMC would prepare the Institute Development Plan (IDP) for development of the ITI and submit the same to the State Steering Committee (SSC). The Principal Secretary would be the chairman of the SSC and the State Director would be the ex-officio Member and act as the Secretary. The SSC would be responsible for the overall implementation and monitoring of the scheme at the State level.

GOI was to advance an interest-free loan of ₹ 2.50 crore to each selected ITI, to be refunded after 10 years *i.e.* from the 11th year for the next 20 years from the revenue generated through the PPP programme. GOI would sanction and release the interest-free loans to the ITIs only on the basis of IDPs approved by the SSC. After receipt of money, the Principal Secretary, being the chairman of SSC, had to ensure that the ITIs implemented the IDP by complying with the requirements of upgradation *vis-a-vis* space, machinery and instructors.

We noticed (March 2011) that 206 institutes had been selected in four phases during 2007-11 and an interest-free loan of ₹ 515 crore had been advanced to these institutes by GOI. Each institute which had received an interest-free loan of ₹ 2.50 crore from GOI was instructed (June 2010) by DGET to keep 50 *per cent* of the loan amount received in fixed deposits for earning interest to repay the loan after 10 years, leaving only the balance for developmental works. Release of GOI funds and expenditure incurred under PPP is indicated in **Table 5**.

¹²² Nagothane=18 *per cent* in 2009-10, Aurangabad=21 *per cent* in 2008-09 & 17 *per cent* in 2009-10, Kinwat=39 *per cent* in 2008-09 and 42 *per cent* in 2009-10, Bhor=21 *per cent* in 2008-09 and 2009-10.

Table 5: Release of GOI funds and expenditure incurred under PPP (₹ in crore)

Year	No. of ITIs selected for upgradation	Amount released by GOI	Expenditure incurred up to March 2011	Amount blocked in fixed deposits
2007-08	62	155.00	49.23	77.50
2008-09	55	137.50	27.21	68.75
2009-10	60	150.00	2.68	75.00
2010-11	29	72.50	--*	36.25
Total	206	515.00	79.12	257.50
Source: Data furnished by department			* Information not furnished	

Further scrutiny revealed that although an amount of ₹ 515 crore had been released to the 206 ITIs, an expenditure of only ₹ 79.12 crore had been incurred (March 2011) indicating poor progress. We noticed in audit that in 109 out of 206 selected ITIs, there was no progress at all. This could be attributed to frequent changes in IDPs indicating that the SSC had not assessed the IDPs properly before approval.

On scrutiny (April to August 2011) of relevant records in seven¹²³ selected institutes (under PPP) we noticed that:

- In four¹²⁴ ITIs, original IDPs were subjected to frequent changes and as such, progress could not be achieved as envisaged. In ITI (Girls) Jalgaon, IDP was changed thrice within a span of 16 months (December 2009 to March 2011) and as a result of the time lost, no progress was achieved for upgradation under PPP (June 2011).

While accepting the facts, the Joint Secretary stated (November 2011) that IDPs were changed frequently due to recession and demand of the local industry as per the market position. The fact remained that a demand based survey was not conducted by the department before preparation of the plan.

- Change of industry at ITI (Girls) Nashik and change of Chairman of the existing Institute Management Committee at ITI Pen delayed the implementation of the Industrial Development Plans.
- In four¹²⁵ ITIs, the estimates for developmental works exceeded the maximum admissible limit (₹ 2.50 crore) as the budget estimates were not prepared as per the availability of funds and the norms prescribed. The State Steering Committee, however, had approved (2007-08 to 2010-11) these IDPs in anticipation of the excess estimates being met from the revenue generated by the respective IMCs. The IMCs, however, could not generate revenue as the courses did not commence as proposed in the IDP.
- The estimates presented in the IDPs were based on loan amount of ₹ 2.50 crore. However, as only 50 per cent amount (₹ 1.25 crore) was available for developmental works, the estimates were required to be changed

¹²³ 2007-08=ITI, (Girls) Nashik, ITI (Girls), Aurangabad, ITI, Khed (Pune) and ITI (Girls), Aundh; 2008-09=ITI, Pen (Raigad), ITI, Bhatkuli (Amravati), 2009-10= ITI (Girls), Jalgaon.

¹²⁴ ITI (Girls), Jalgaon, ITI (Girls), Aurangabad, ITI, Bhatkuli (Amravati), ITI, Khed (Pune)

¹²⁵ ITI (G), Nashik-₹ 2.90 crore, ITI (G), Aurangabad-₹ 4.53 crore, ITI (G), Aundh, Pune-₹ 4.03 crores, ITI, Khed-₹ 4.94 crore.

accordingly which was not done. As a result, ongoing works of the COE building at ITI (Girls), Nasik were stopped as the balance amount of loan (₹ 1.09 crore) could not be used and had to be kept in fixed deposit in banks as instructed by DGE&T.

Joint Secretary stated (November 2011) that as per DGE&T's guidelines, institutes had to keep 50 per cent of loan amount in fixed deposits and remaining ₹ 1.25 crore was to be utilised for upgradation, therefore, instructions were issued to revise the IDPs to limit the expenditure within ₹ 1.25 crore. Further, the Director responded in the exit conference that based on the progress, expenditure could be incurred beyond ₹ 1.25 crore also. The reply is not acceptable as no such instruction were noticed in Audit. However, it was observed that the work was stopped in ITI (G), Nasik contrary to the above statement, as the amount of 50 per cent was required to be kept in fixed deposit.

- The seven test-checked institutes had received (during 2007-08 to 2009-10) a total loan of ₹ 17.50 crore (₹ 2.50 crore each) of which ₹ 15.49¹²⁶ crore was lying in fixed deposits (**Appendix 2.5.7**).

Joint Secretary stated (November 2011) that the upgradation was in full progress. The reply is not tenable as we noticed in the test-checked institutes that 89 per cent of the loan amounts received (including interest) was lying in fixed deposits for periods ranging from one to four years.

We noticed in audit that laxity in planning and lack of proper co-ordination had adversely affected the upgradation under PPP. It was the responsibility of the department to ensure proper utilisation of funds. As a result, the infrastructure required for upgradation and commencement of the courses was not developed and affiliation could not be obtained leading to poor performance of the scheme.

Vocational Education

2.5.8.4 Non-recruitment of faculty in newly opened Government Technical High Schools (GTHSs)

The department decided (2008) to open 34 new GTHSs in the State to clear the back log of 4693¹²⁷ students in technical education. Out of these, 33 new GTHSs were opened during 2008-11 but the Government accorded sanction for recruitment of faculty and Principals for these schools only in March 2011. As a result, the recruitment could not be done (August 2011). One GTHS proposed (2008) to be opened at Kurla had not started (June 2011). The department stated that the said institution at Kurla would commence from 2011-12. The fact, however, remained that the GTHSs did not serve the purpose of clearing the backlog which continued to increase year after year. We noticed in the test-check of the GTHS at Kamptee, Nagpur opened in 2008 that qualified instructors had not been appointed since inception and no

¹²⁶ (All figures ₹ in crore) ITI (Girls), Nasik: 1.09, ITI (Girls), Jalgaon: 2.59, ITI (Girls), Aurangabad: 3.07, ITI, Pen (Raigad): 2.50, ITI, Bhatkuli (Amravati): 2.76, ITI, Khed (Pune): 1.74, ITI (Girls), Aundh (Pune): 1.73

¹²⁷ Index and Backlog committee had indicated a backlog of 4693 seats in technical education in January 1996.

practical training was being imparted to the students. In spite of this, 191 students were declared successful during the period 2009-11. This was a cause for concern as the students had no practical training, which was the basic necessity for development of skills.

The Joint Secretary stated (November 2011) that teaching posts had been created (May 2011) and would be filled up in the next six months. The reply is not acceptable, since mere opening of institutes without supporting faculties shows laxity in planning and does not serve the desired purpose.

2.5.8.5 Irregularities in implementation of Minimum Competency Vocational Courses Scheme

Government introduced (1988-89) the Minimum Competency Vocational Courses (MCVC) scheme for augmenting employment and self-employment opportunities of candidates at the '10 plus two' level to reduce the admission load on higher education. The Director, Vocational Education was in charge of implementation of the scheme at the State level. The course was a two-year practical-oriented training for candidates with a minimum qualification of 10th standard so as to provide them with employment opportunities after completion of the two-year course. On scrutiny (April to August 2011) of the records of 10 GIA institutes, we noticed the following:

- Existing machinery had not been replaced in three institutes¹²⁸ for periods ranging from 15 to 21 years as no grants were received for this purpose.



Obsolete machinery being used in Rashtriya Jr. College, Achalpur, Amravati for training

- The syllabus had been revised in 2008 and practical training on certain new additional machines and equipments had been included in the course. However, the same had not been purchased by four institutes¹²⁹.

In three¹³⁰ institutes, only 20 to 60 *per cent* of the seats were filled during 2008-10 and in one¹³¹ institute, no student was enrolled during 2009-11

¹²⁸ Rashtriya Junior College, Achalpur, Amravati; Municipal Junior College, Achalpur Camp, Amravati; S S Patil College, Jalgaon.

¹²⁹ Rashtriya Junior College, Achalpur, Amravati, Municipal Junior College, Achalpur Camp, Amravati, S S Patil College, Jalgaon, Maharashtra Vidyalaya & Junior College, Pune.

¹³⁰ GTHS, Jalgaon; Sarswati Vidya Mandir, Kinwat, Nanded and G K Mahavidyalaya, Nanded

¹³¹ Baliram Patil Mahavidyalaya, Nanded.

resulting in under-utilisation of capacity and idling of teaching staff whose salaries were paid from the Government funds through GIA.

Five institutes¹³² had not collected Institute Development Fund (IDF) as per the prescribed norms *i.e.* 50 per cent of the fees such as training fee, admission fee *etc.* were required to be kept in IDF and deposited with the bank. As this fund was to be utilised for the developmental works of the institute, its collection would have enabled the institute to purchase the new machinery or replace old one.

We noticed that out of 52761 students declared successful in all the GTHSs across the State (2007 to 2010), 31450 opted for higher education in colleges, defeating the purpose of the scheme. We further noticed that though GOI had recommended (1988-89) creation of specific recruitment rules for absorbing the MCVC passed candidates, this was not done by the State. This acted as a contributory factor for the shifting of students towards higher education instead of opting for employment as envisaged by the scheme.

Joint Secretary, while accepting the facts, stated (November 2011) that action would be taken to make the scheme employment-oriented.

2.5.9 Utilisation of assets

The objectives of ITIs and GTHSs were to equip the students with practical knowledge and skills required for the industry. Tools and machinery as prescribed for the various courses were the basic requirements in these institutes, as a major portion of the syllabus included practical knowledge on the usage of these tools and machinery.



ITI, Jalgaon-Toolkits lying undistributed



Tools and equipments kept in ITI campus due to lack of space at GTHS, Kamptee, Nagpur

On scrutiny (April to August 2011) of the records of 39 institutes test-checked, we noticed that machinery and equipment worth ₹ 5.73 crore (includes ₹ 73.36 lakh against five GTHS) were lying idle for various reasons as shown in **Appendix 2.5.8.**

¹³² Rashtriya Junior College, Achalpur, Amravati; Municipal Junior College, Achalpur Camp, Amravati; S S Patil College, Jalgaon; Bendale College, Jalgaon; Peoples College, Nanded.

The department stated (November 2011) that instructions had been issued to the institutes to install all the machinery and equipment. The fact remained that improper material management had resulted in blockage of funds to the extent of ₹ 5.73 crore, besides rendering the machinery and equipment idle for periods ranging from one to 84 months, leaving them open to the risk of damages due to disuse.

2.5.10 Impact of implementation

We noticed that although the number of applicants to ITIs increased from 2.92 lakh in 2006-07 to 3.95 lakh in 2009-10, the corresponding intake capacity could increase from 67116 to 93630 only. The CCO and the department did not ensure that the increase in courses was supported by proper planning, as a result of which, the objective of the department to bridge the gap between demand and supply of skilled workers could not be achieved. Consequently, the department could not supply apprentices to the industries and the seats located in the industries remained vacant to the extent of 34 to 40 *per cent* as may be seen from the following paragraph.

There were shortfalls ranging from 34 to 40 *per cent* in filling up the seats located by the Advisor

2.5.10.1 Shortfall in engaging students for Apprentice Training Scheme (ATS)

After passing trade tests under CTS, candidates are required to undergo practical training in industries as apprentices under ATS to enhance their skills. Subsequently, the apprentices become eligible for appearing in All India Trade Tests (AITT) conducted by DGE&T and the successful apprentices are awarded National Apprenticeship Certificates (NAC) by NCVT.

As stated earlier (**Paragraph 2.5.6.1**), seats located by Apprentice Advisors seats in the industries are to be filled up by the successful candidates from the affiliated trades in ITIs. These candidates are required to appear the examination conducted by DGE&T for obtaining the All India Trade Test certificate. The number of seats located, actually filled up, number of students who appeared at the examination and the number who passed in the ATS examination between 2006 and 2011 is given in **Table 6**.

Table 6: Successful candidates from ITIs deputed to industries

Year	Seats located in industries	Seats filled up out of those mentioned in col 2	Shortfall (<i>per cent</i>) (3-2)	No. of students who appeared in ATS exam out of admitted as mentioned in col 3	Students successful in exam out of those mentioned in col 5	Percentage of failure (col 6/ col 5)
1	2	3	4	5	6	7
2006	93812	61034	32778(35)	30254	18181	40
2007	97338	64709	32629(34)	33898	14762	46
2008	109230	70386	38844(36)	34367	20347	41
2009	118263	72377	45886(39)	31179	18579	40
2010	134606	81194	53412(40)	39147	22523	42
2011	73707	45295	28416(39)	12876	4717	63

Source: Data compiled by Audit

Table 6 reveals that there were acute shortfalls ranging from 34 to 40 *per cent* in filling up of the seats located by the Apprenticeship Advisor. As a result, the numbers of successful candidates provided by the ITIs were not sufficient to fulfill the demands of the industry. Further, as ATS was an integral part of the training course, failures to the extent of 40 to 63 *per cent* was a cause for grave concern and indicated that the department had not ensured the quality of education at ITIs through qualified instructors and prescribed infrastructure facilities. Besides, unless the candidates passed this examination, they would not be eligible for National Apprentice Certificates issued by NCVT, affecting their chances to secure gainful employment.

Joint Secretary stated (November 2011) that there was a gap of 34 to 40 *per cent* between seats located and seats remaining vacant as the trainees were not willing to migrate from their native places and preferred only medium and large industries. The reply is not acceptable as the seats located to be filled up were as per survey conducted by the AAA and pertained to each district and as such, question of migration did not arise.

Further, while accepting the facts with regard to the high percentage of failures in the ATS, the Joint Secretary stated (November 2011) that to upgrade the standards of training new schemes adopted through World Bank Aided project and PPP projects. It was further added that the Government also proposed to improve the quality of trainers by imparting training to the instructors through training centres.

2.5.11 Human Resources Development

2.5.11.1 Shortage of manpower

The sanctioned strength and persons in position in the department (in both the Directorates) as of March 2011 is shown in **Table 7**.

Table 7: Sanctioned strength and persons in position

Category	Sanctioned strength	Persons in position	Vacancies	Percentage of vacancies
Group A	342	177	165	48
Group B	523	319	204	39
Group C	10642	8898	1744	17
Group D	2667	2523	144	5
Total	14174	11917	2257	

Source: Data furnished by department

There were acute shortfalls ranging from 75 to 100 *per cent* in conducting technical inspections

Acute shortages of manpower at various levels affected the service delivery as well as the implementation and monitoring of the schemes and activities of the department. The department, while accepting the facts and figures, stated (November 2011) that necessary action was in progress.

2.5.12 Monitoring and Internal Control

2.5.12.1 Technical inspections

The department had to ensure that Regional Offices conduct technical inspections of each ITI (by Inspectors) once in a quarter as per Rule 36 (b)1 of the ITI Manual to ascertain the quality of technical education and training facilities available.

Scrutiny (April to August 2011) of records in six ROs, revealed acute shortfalls ranging between 75 and 100 *per cent* in conducting technical inspections of Government ITIs during the period 2006-11. The details of inspections conducted are given in **Table 8**.

Table 8: Details of Technical Inspections

Sr. No.	Name of the Regional Office	Total number of ITIs	Inspection to be conducted	Inspections actually conducted	Percentage of Inspections conducted	Percentage of shortfall
1	Mumbai	64	1280	Nil	Nil	100
2	Nasik	67	1340	169	13	87
3	Aurangabad	81	1620	27	2	98
4	Nagpur	75	1500	Nil	Nil	100
5	Amravati	63	1260	83	7	93
6	Pune	61	1220	301	25	75

Source: Data compiled by audit

Audit also noticed that technical inspections had not been conducted in any of the GTHS and GIA institutions though the Government spent ₹ 1,171.70 crore¹³³ on GIA during the same period. As a result of shortfalls in conducting technical inspections, persistent problems such as idle and defunct machinery, shortage of instructors, shortfalls in training, inadequate space for practical training, lack of power supply *etc.* would not have been noticed for taking remedial measure.

The department accepted (November 2011) the facts and agreed to do the needful. Specific norms for inspection of GTHSs and vocational courses under GIA institutions were also proposed to be formulated.

2.5.12.2 Internal audit

No internal audit wing was functional in the department

We observed that no internal audit wing was functional in the department. Consequently, monitoring of the implementation of the Centrally sponsored and World Bank assisted schemes and other departmental activities were not effective and could not achieve the desired objectives.

Joint Secretary accepted (November 2011) the absence of an Internal Audit Cell and stated that as proposal of the Directorate to the Government for the same sent in July 2007 was still pending.

2.5.13 Conclusion

The institutes under the Directorate of Vocational Education and Training in the State could not supply the number of skilled workers to the industries as envisaged. Commencement of courses without affiliation rendered the students ineligible for the All India Trade Test and consequently for National Council for Vocational Training certificates having all India recognition for recruitment. Shortfalls in infrastructure, prescribed equipment and instructors were noticed in case of affiliated trades in test-checked units. The schemes failed to take off as envisaged due to shortfalls in infrastructure and faculty, as a result of which the department could not achieve its objective of bridging the gap between the demand and supply of skilled workers. The deficiencies in

¹³³ 80 *per cent* of the Non-Plan Expenditure of ₹ 1,464.62 crore on Vocational Education (MH 2203) was incurred on Grant-in-aid as shown in Para 1.7.1.

implementation of the schemes could not be identified and set right due to poor monitoring and acute shortfalls in technical inspections ranging from 75 to 100 *per cent*. Acute shortfalls in key posts severely affected the performance and service delivery of the department.

2.5.14 Recommendations

Government may :

- streamline the planning process effectively to achieve the larger goal of employability;
- ensure release of grants-in-aid only on receipt of utilisation certificates and regular assessment;
- ensure compliance to norms for granting affiliation to new trades stringently and monitor them periodically;
- review upgradation of Industrial Training Institutes through Public-Private Partnerships and initiate measures to speed up the progress of the schemes;
- take appropriate measures to fill up vacancies urgently to facilitate effective monitoring and implementation of the schemes and service delivery, thereby imparting quality training to the students; and
- fix a mechanism for monitoring and technical inspections for effective implementation of schemes and imparting of quality education.