CHAPTER III

PERFORMANCE AUDIT

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This chapter presents seven performance audits (including one information technology review). The Performance audits include reviews on Irrigation projects financed by NABARD, Medical Education, Functioning of Teaching Hospitals, Educational Development of Scheduled Castes and Scheduled Tribes, Member of Legislative Assembly Constituency Development Scheme and Functioning of Tamil Nadu Agricultural University. The information technology review is on Ineffective Computerisation in Agriculture Department.

PUBLIC WORKS DEPARTMENT

3.1 Irrigation projects financed by NABARD

Highlights

Rural Infrastructure Development Fund constituted by Government of India was to be operated by National Bank of Agriculture and Rural Development (NABARD) for assisting State Governments to complete rural infrastructure projects under various sectors. The irrigation projects executed in the State through NABARD loan assistance suffered from defective project formulation. As a result, some projects could not contribute to increased irrigation potential/agricultural production. Loan register was not maintained and interest as claimed by NABARD was paid without any check. Avoidable delay in completing the projects as targeted, delayed the benefits of increased agricultural production. Poor investigation, defects in design, and execution and adoption of higher specification led to extra expenditure of Rs 24.52 crore. Non-adherence to the prescribed standards resulted in sub-standard work.

- **Three projects formulated for creating irrigation potential of 8,469 hectare would affect the availability of water to the lower down ayacuts and defeat the objective of increasing the agricultural production.**

(Paragraph 3.1.6.1)

- **Non-inclusion of works essential for increasing the irrigation potential, non-availability of water and location of ayacuts at higher levels than the sluice of the tank rendered five projects unviable.**

(Paragraphs 3.1.6.2 and 3.1.6.3)

- **Failure to increase the capacity of tanks, incorrect assessment of water availability rendered three projects incapable of creating the envisaged irrigation potential.**

(Paragraph 3.1.6.5)

- **Poor investigation of the projects led to extra commitment of Rs 9.33 crore.**

(Paragraph 3.1.9.1)

- **Rupees 2.47 crore was spent on works not contemplated in the approved project report.**

(Paragraph 3.1.9.2)

- **Designing the reservoir/canals for higher capacity resulted in extra expenditure of Rs 5.77 crore.**

(Paragraphs 3.1.10.1 to 3.1.10.4)

- **Adoption of higher specifications than that prescribed by Bureau of Indian Standards resulted in avoidable expenditure of Rs 4.97 crore.**

(Paragraphs 3.1.10.7 and 3.1.10.8)

- **Net overpayment on account of price variation and allowing excess lead amounted to Rs 67.14 lakh.**

(Paragraph 3.1.11)

- **Delay in sanction of estimates and change in design during execution resulted in non-accrual of benefits of irrigating 15,298 hectares.**

(Paragraph 3.1.14.1)

3.1.1 Introduction

Government of India (GOI) constituted (1995-96) Rural Infrastructure Development Fund (RIDF) to be operated by National Bank for Agriculture and Rural Development (NABARD) for assisting the State Governments to complete rural infrastructure projects under various sectors[1], which were lying incomplete for want of funds. The scope of RIDF was extended to cover new projects also in the rural areas. The projects sanctioned in each year are treated as a Tranche and 12 tranches (RIDF I to XII) were sanctioned by NABARD, as of March 2007.

The Irrigation Projects implemented by Government of Tamil Nadu (GOTN) utilising RIDF envisaged increasing of cultivable command area and cropping intensity by conservation and optimum utilisation of water through execution of medium and minor irrigation projects and formation and modernisation of tanks. During 1999-2006, NABARD sanctioned 701 irrigation projects (20 on-going projects and 681 new projects) at a total cost of Rs 706 crore, of which 37 new projects valuing Rs 11.02 crore were deleted. Tranche-wise

[1] Irrigation, Roads and Bridges, Education, Health, Power, Water Supply etc.

details of works taken up for execution and completed, irrigation potential envisaged and created and total expenditure incurred are given below:

Tranche number		Works sanctioned excluding deleted works			Works Completed as of March 2007		Total expenditure as of March 2007[2] (Rs in crore)
		Number	Amount (Rs in crore)	Irrigation Potential (in ha)	Number	Irrigation Potential (in ha)	
RIDF V	1999-2000	60	29.98	8225	60	8225	32.95
RIDF VI	2000-01	18	42.03	7971	18	7971	45.08
RIDF VII	2001-02	10	110.31	13091	7	1628	124.41
RIDF VIII	2002-03	3	70.14	5402	3	5402	71.16
RIDF IX	2003-04	178	195.76	36546	163	19604	152.75
RIDF X	2004-05	283	154.99	45883	62	13782	66.47
RIDF XI	2005-06	112	91.77	34424	1	53	29.53
TOTAL		**664**	**694.98**	**151542**	**314**	**56665**	**522.35**

ha: hectare

The increase in irrigation potential of 1.52 lakh ha was arrived at based on the envisaged ayacuts[3], which require additional water for cultivation (stabilisation) and ayacuts which would be fully benefited by the projects (bridging the gap and new ayacuts).

3.1.2 Organisational set up

Finance Department of the GOTN is the nodal agency for drawal of loan and its repayment and the Water Resources Organisation Wing of Public Works Department (PWD) headed by the Engineer-in-Chief (EIC) executes the Irrigation projects. The projects were formulated by the Chief Engineer, Plan Formulation (CE-PF) with the assistance of 10 Executive Engineers (EEs) and three Superintending Engineers (SEs). The works were executed by 38 EEs under the supervision of 15 SEs and monitored by four Regional Chief Engineers (CEs). The Chief Engineer, Design Research and Construction Support (CE - DRCS) assisted by six SEs and 17 EEs provides technical guidance. The Secretary, PWD is the administrative head. A High Power Committee headed by the Chief Secretary monitors the project implementation.

3.1.3 Audit Objectives

The performance audit of irrigation projects financed by NABARD was conducted with a view to assess whether:

- the projects were holistically formulated and were viable,
- systematic planning was done to complete the works in time,

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2 Includes Rs 56.18 crore being the expenditure incurred by the State Government before appraisal by NABARD in respect of 20 on-going works.

3 Cultivable lands.

- execution of the projects was managed efficiently, effectively and economically with due adherence to quality standards, and,
- the completed projects achieved their objectives.

3.1.4 Audit criteria

The following criteria were adopted:

- Norms fixed By NABARD,
- General instructions issued by GOTN and Central Water Commission (CWC),
- Manual on Irrigation and Power Channel published by CWC,
- Ellis Irrigation Manual for formulation of projects, and,
- Bureau of Indian Standards (BIS) specifications, Indian Roads Congress guidelines.

3.1.5 Audit Methodology and coverage

The records relating to 262 works (39 *per cent*) costing Rs 422 crore (61 *per cent* of total sanction) sanctioned and executed during 1999-2006 were test checked (**Appendix 3.1)** in the office of 20 EEs, six SEs and four CEs. Besides, the records relating to financing and monitoring of the projects maintained by EIC and Government (PWD and Finance) were also scrutinised during January 2007 to March 2007. Audit was carried out by examining documentary evidence, gathering and analysing relevant statistical data and related specifications, undertaking site inspections and holding discussions with the officials of the Department. Entry conferences were held with EIC (January 2007) and Secretary to Government, PWD (February 2007). Exit conference was held in May 2007 with Special Secretary to Government, PWD and his views were considered while finalising the review.

3.1.6 Audit findings

Formulation of Projects

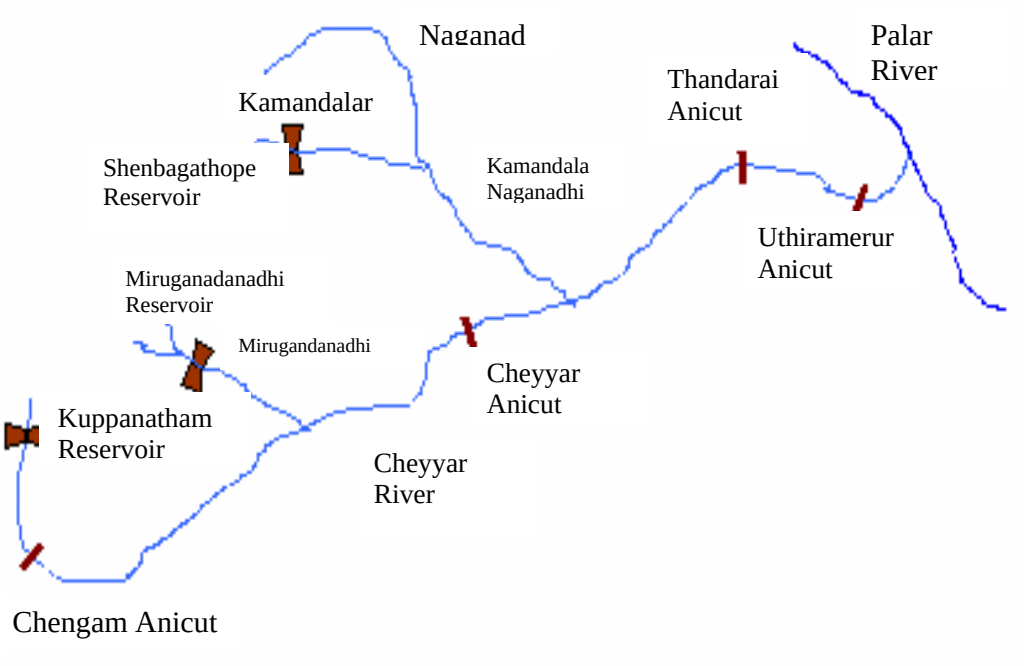
The irrigation projects are formulated to create additional irrigation potential which would increase the agricultural production. Audit scrutiny revealed that the EIC has formulated 10 projects (sanctioned cost : Rs 191.60 crore), which would create irrigation potential of only 2,596 ha as against 21,004 ha envisaged in the project reports. Besides, one project was taken up unnecessarily as the envisaged irrigation potential could be created even without implementing it. The cases are discussed below:

3.1.6.1 Projects which would not contribute increased agricultural production

The objective of increasing agricultural production was defeated due to defective project formulation.

Kuppanatham, Mirugandanadhi and Shenbagathope Reservoir projects sanctioned by NABARD during April 2002 to September 2003 for Rs 82.52

crore are located in Cheyyar River and its tributaries. The last anicut[4] in Cheyyar River before its confluence with Palar River is Uthiramerur anicut. The location of various anicuts and proposed reservoirs are depicted below:



Audit scrutiny revealed that, 1,300 mcft out of 3,000 mcft of water required for the registered ayacuts of Palar River was to be contributed by the surplus from Cheyyar River at Uthiramerur anicut. The surplus of 1,300 mcft of water was achieved at Uthiramerur anicut only in three out of 20 year period from 1977 to 1996 (15 *per cent* dependability) which was much less than the norm of 75 *per cent* dependability prescribed by NABARD. Hence, no project for impounding water upstream of Uthiramerur anicut should have been sanctioned. The Department, however, proposed (October 1996 to July 1999) to construct three reservoirs to create an additional irrigation potential of 8,469 ha upstream of Uthiramerur anicut considering the surplus yield available at these dam sites. The department spent Rs 77.65 crore on these projects as of March 2007 and the Mirugandanadhi project was completed in March 2006. As the surplus at Uthiramerur anicut is the net effect of the surplus at all upstream anicuts as well as local yield at various dam sites, these projects would only affect the downstream ayacuts in Palar Command. The additional agricultural production in Cheyyar Command due to creation of irrigation potential under these projects would, therefore, be off-set by the decrease in the agricultural production in Palar Command due to non-availability of water in the Palar River. Thus**,** sanction of these projects defeated the objective of increasing the agricultural production and would render the expenditure of Rs 77.65 crore on these projects wasteful.

[4] Masonry or concrete structure constructed across a river to divert specific quantity of water to the tanks or to the ayacuts directly through supply channels.

3.1.6.2 Unviable projects

The following projects were unviable due to non-availability of water and location of ayacuts at levels higher than the sluice of the tank.

Badathalav tank receives its supply from Marasandirum anicut. Projecting an availability of 642 mcft of water at the anicut, the work of excavation of supply channel from Badathalav tank to 11 lower down tanks was sanctioned in November 2004 for Rs 7.12 crore for development of irrigation potential for 642 ha. Audit scrutiny revealed that the Badathalav tank surplused only in 1986 during 1986-2000 when the project report was prepared indicating non-availability of water even for the ayacuts of Badathalav tank. Besides, the anicut had not surplused during these 15 years indicating that there was no surplus water available as indicated in the project report. Revenue records relating to Badathalav tank also disclosed that only three to 10 *per cent* of ayacuts were cultivated in five years during 1997-2004 and 30 and 32 *per cent* in the remaining two years. In spite of non-availability of required water in the anicut even for the ayacuts of Badathalav tank, the sanction for the project to feed 11 more tanks was obtained from NABARD. As such, the project would not create the additional irrigation potential of 642 ha, though Rs 7.49 crore have been spent till March 2007.

The work of modernisation[5] of Tiruvirundalpuram tank was sanctioned for Rs 67.86 lakh to irrigate 258 ha. Audit scrutiny of the revenue records revealed that only 38 ha could be irrigated and the remaining ayacuts were located at levels higher than the sluice of the tank. The project report, however, indicated that 195 ha were irrigated from the tank, which was incorrect. The modernisation of the tank would, therefore, not yield the additional irrigation potential envisaged. The work was completed at a cost of Rs 62.28 lakh in July 2005.

3.1.6.3 Projects which are unviable due to non-inclusion of essential works

Works essential for increasing the irrigation potential were not included in the projects.

The Nilaiyur Extension Channel project sanctioned for Rs 19.79 crore in April 2002 envisaged creation of additional irrigation potential of 4,027 ha by extending the existing Nilaiyur channel. The carrying capacity of the extension channel was 654 cusecs whereas the carrying capacity of the Nilaiyur channel at the off-take point of extension channel was only 175 cusecs. As such, only a maximum of 175 cusecs could be fed into the extension channel and the actual irrigation potential created was 847 ha. The work was completed in September 2004.

[5] Renovation of tank bunds, supply channels and surplus courses, reconstruction of sluices and lining of field channels.

The work of modernisation of Irunchirai tank, which was sanctioned (September 2005) for Rs 87.25 lakh was completed at a cost of Rs 83.98 lakh in January 2007. Audit scrutiny revealed that the tank receives water mainly from Gridhamal river and Nattandi Odai[6]. Due to heavy jungle growth in the supply channels, water received in the tank was less than 40 *per cent* of the total capacity during 1996 to 2004 and only 20 *per cent* of the total ayacut of 593 ha were irrigated during this period. The project, however, had not included provision for removal of the jungle growth. Consequently, implementation of this project would not increase the envisaged irrigation potential of 593 ha.

Heavy jungle growth in the supply channels

3.1.6.4 Wasteful expenditure on unnecessary project

Project taken up unnecessarily though the envisaged irrigation potential could be created even without implementing it.

The Nagariar Reservoir Project proposed to store 73 mcft out of 208 mcft of surplus water by constructing a reservoir across Nagariar and release it in the river to feed 11 tanks to stabilise 1267 ha. The original proposal was sent by the CE-PF to Government in January 1998. The Collector opined (April 1998) against the construction of the reservoir, on the ground that the lands to be benefitted were already wet lands and the project would affect the lower ayacuts. The Commissioner of Land Administration concurred with the Collector and informed (June 1998) the Government that the funds could be better utilised for rehabilitating the 13 down stream tanks. However, Government sanctioned (June 1998) the project based on the proposals of CE-PF. After incurring Rs five lakh towards preliminary expenses, the project was got sanctioned by NABARD in September 1999 and completed in April 2004 at a cost of Rs 12.61 crore.

Audit scrutiny revealed that the SE, PF Circle, Trichy informed (June 1998) the Collector that the project has been taken up as the tanks and supply channels lower down get breached during flash floods in the river and the ayacuts of the tanks do not have water at critical stages and sought his concurrence for the project. The Collector, however, stated (July 1998) that his concurrence was not relevant in view of Government sanction.

The records of the executing division revealed that though there was a surplus of 208 mcft of water at the reservoir site, the actual surplus after feeding the 11 tanks downstream was only six mcft and two more tanks located after supply to these 11 tanks were deficient to the extent of 89 mcft. As such, the surplus of 73 mcft proposed to be stored in the reservoir could have been fed into these two tanks to increase their irrigation potential. Breaching of supply channels and intermediate tanks could be prevented by proper regulation of sluices in the intermediate anicuts and strengthening of channels/tank bunds.

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[6] small stream.

Thus, the formation of a reservoir for storing surplus water when such storage facilities are available in the downstream is not justified.

3.1.6.5 Projects which would not create the envisaged irrigation potential

The Malattar Anicut Project originally sanctioned in October 1991 for Rs 17.25 crore envisaged provision of additional irrigation potential for 1,912 ha under 54 tanks in Kamudhi and Mudhukulathur taluks. Based on Government instructions to reduce the cost and make the project viable, the crest level of the anicut was reduced from 25.6 m to 24.35 m without change in the irrigation potential but reducing the cost to Rs 15.40 crore. The body wall of the anicut was constructed at a cost of Rs 5.81 crore with State funds. While proposing the project for NABARD loan, the crest level of the anicut was again increased to 25.6 m and the irrigation potential was also increased to 3,598 ha. The project was sanctioned by NABARD for Rs 36.25 crore in February 2004. Audit scrutiny revealed that the original proposal to divert 353 mcft of water was increased to 687 mcft of water in the revised proposal given to NABARD. The details of the capacity of the 54 tanks as given in the original proposal and in the revised proposal given to NABARD and the details of original and revised ayacuts proposed to be benefited are given in **Appendix 3.2**. The total capacity of the tanks was 431 mcft as per the original proposal but the capacity of the tanks were boosted to 1311 mcft in the proposal sent to NABARD. As the storage capacity of the tanks cannot be increased and the project contemplated diversion of surplus water to the tanks in five days, the additional irrigation potential of 1,912 ha envisaged in the original project could only be achieved.

As against 3,598 ha irrigation potential envisaged in revised project, only 1,912 ha was achieved.

Construction of Anicut across Vashishtanadhi sanctioned by NABARD in November 2000 for Rs 10.88 crore envisaged creation of additional irrigation potential of 1,110 ha under 25 beneficiary tanks. Audit scrutiny revealed that 12 of the 25 tanks have surplus from their own self catchments and three tanks already receives water from nearby Thottapadi anicut. As such, only 370 ha under the remaining 10 tanks could be benefited by this project and inclusion of infrastructure costing Rs two crore for the 15 tanks was wasteful.

Irrigation potential envisaged was not created due to incorrect assessment of water availability.

Varattar Reservoir Project was sanctioned by NABARD in November 2002 for Rs 33.49 crore to create additional irrigation potential of 2063 ha. It was seen that as against 333 mcft of water required for irrigation from the reservoir, the normal yield in the catchment area of the reservoir was only 166.65 mcft. While preparing the project report the increase in yield was projected at 100 *per cent* instead of 25 *per cent* as is normally done. As such, the actual availability of water was only 208 mcft, which could create an irrigation potential of 1,215 ha only.

3.1.7 Financial Management

NABARD released 90 to 95 *per cent* of the sanctioned cost of the projects as loan repayable in seven years with two year moratorium period. The loan was released on reimbursement basis. Besides, 10 to 20 *per cent* of the loan was

released as mobilisation advance (start-up advance) for purchase of equipment, etc., on request from GOTN. Payment made under each reimbursement claim was treated as a loan. Finance Department of GOTN was the nodal department for documentation and drawal of fund and repayment of principal with interest.

Against Rs 522.35 crore spent as of March 2007, reimbursement claim was preferred for Rs 435.59 crore and a loan of Rs 407.69 crore was obtained. The difference between the expenditure and claim preferred was mainly due to pre-project expenditure incurred by the State Government for 20 ongoing works, exclusion of state's share from the claims and delay in compilation. The difference between claim preferred and loan obtained was mainly due to restriction of loan to NABARD sanction. Test-check revealed that there was huge escalation in cost due to change of design, execution of additional works etc., in five projects[7] and NABARD restricted the loan to sanctioned amount resulting in disallowance of Rs 9.63 crore. Consequently, the amount was borne by the State.

Principal and interest were paid as demanded by NABARD, the Finance department did not keep independent records.

The Finance Department did not maintain sector-wise loan details and particulars of repayment condition, payment of interest and principal for each loan. Instead, details of loan received, repayments made and balance to be repaid were obtained monthly from NABARD and pasted in the register. Finance Department made the repayment of the principal and interest as and when the claims were received from NABARD. As such, the claims were not checked before making payments.

3.1.8 Avoidable delay in finalisation of tender

Delay in issue of administrative sanction resulted in non-finalisation of tenders in time.

NABARD sanctioned (April 2005) Rs 76.50 crore for modernising 277 tanks and the works were to be completed by March 2007. The administrative sanction was, however, issued only in September 2005 after deleting 27 tanks, which were sanctioned under another Centrally Sponsored Scheme. To achieve better quality and monitoring of works and to get competitive rates, the 250 works were grouped into packages and tenders were called for in December 2005 and January 2006. Tenders for packages relating to 42 works were finalised before issuing of notification for elections for the Legislative Assembly. The new Government decided (May 2006) to invite tenders afresh for each work separately. Consequently, the estimates for 208 works were revised adopting the schedule of rates of 2006-07 and tenders were floated. As of March 2007, only 42 works were completed, 200 works were in progress, six were not taken up and two works were executed under another scheme. The avoidable delay in issuing administrative sanction had resulted in non-finalisation of tenders before elections. Further, revision of estimates contributed to further delay and 206 works were not completed within the targetted date.

[7] Shenbagathope, Nagariar and Mirugandanadhi Reservoir Projects, Kalvoy-Sadayaneri and Badathalav Supply Channels.

3.1.9 Cost escalation due to inadequate investigation

In order to curtail deviation during execution and additional financial burden, Government ordered (March 1980) that the project report should be prepared after conducting detailed investigation for obtaining administrative sanction. If any deviation required during execution, Government was to be informed of the full cost implication explaining the reasons for not foreseeing it. Government also warned of disciplinary action if items not contemplated in the sanction were taken up without specific prior approval. In the following cases, the Department violated these instructions resulting in excess expenditure over sanction as well as execution of unapproved items.

3.1.9.1 Extra commitment due to poor investigation

Failure to conduct detailed investigation led to extra financial commitment.

In the following projects, there were extra expenditure due to poor investigation of the projects at the formulation stage :

The Nagariar Reservoir Project report for Rs 7.97 crore was prepared based on the type design of the Pambar Reservoir scheme without conducting detailed investigation. Though the cost of the project as per the design given by Designs Circle worked out to Rs 11.11 crore, the CE, Madurai restricted the technical sanction to Rs 8.70 crore[8] and got the project sanctioned by NABARD (loan: Rs 7.83 crore) in September 1999. The CE, Madurai obtained revised administrative sanction for Rs 12.90 crore (May 2003) from Government and completed (April 2004) the work at a cost of Rs 12.61 crore. By taking up the work without projecting the actual cost to Government, the Government was forced to accord revised administrative sanction and complete the project by meeting the additional commitment with State funds.

The Ayyanarkoil Odai Reservoir Project Report for Rs 3.54 crore was prepared based on the design given by CE-PF without detailed investigation. The CE, Madurai Region technically sanctioned the estimate for Rs 3.87 crore in March 2004 even before receipt of detailed design from CE-DRCS. The work was taken up in August 2004. Due to adoption of norms and specifications recommended by CE-DRCS during November 2004 to May 2005 and change in alignment of earthdam, the cost of the project increased to Rs 7.29 crore. Due to change of design, the work was stopped in October 2005 after spending Rs 2.33 crore. Revised administrative sanction for the project was not accorded by Government till August 2007. Issue of technical sanction without obtaining the design approval from CE-DRCS resulted in cost escalation which was to be met from the State funds.

In the work of extension of Krishnagiri Reservoir Project, there was huge variation in the classification of soil during execution due to inadequate investigation in canal alignment resulting in additional commitment of Rs 0.94 crore.

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[8] 10 *per cent* over the administrative sanction.

3.1.9.2 Execution of unapproved works

In the following cases, the executing divisions spent Rs 2.47 crore on items of work which were not included in the approved project report by utilising the savings in these projects:

	Name of the Project	Unapproved items executed	Cost (Rupees in lakh)
(a)	Varattar Reservoir Project	Forming surplus course in the downstream of spillway	52.00
(b)	Andiappanur Odai Reservoir Project	Improvements to a portion of Kurisilapattu supply channel	50.00
		Provision of link canal to connect two streams of the project	81.20
(c)	Construction of Lakshmipuram Anicut	Dismantling of old anicut, provision of right side bank connection on the down stream and improvements to four tanks	47.12
(d)	Construction of masonry kondam[9] at Jaggiramangalam	Provision of graded metal base to solid apron, masonry wall lining to supply channel, removal of earth mound, improvements to supply channel for Asaneri tank and construction of culvert.	16.99
		Total	**247.31**

3.1.10 Designs and specifications

3.1.10.1 Designing of excess capacity of reservoir

Capacity of the reservoir was not based on water availability.

The Kuppanatham Reservoir Project envisaged realisation of 833 mcft of water at the reservoir site and to store this water, the capacity of the reservoir was designed for 700 mcft with Full Reservoir Level (FRL) of 350 m. The season-wise yield from reservoir catchment indicated that the maximum storage of water in the reservoir would be 427, 512, 370 mcft during June-September, October-December, January-May respectively. As the maximum storage required for the season would be 512 mcft, the capacity of the reservoir should have been restricted to 540 mcft with FRL of 348 m. By designing the reservoir for 700 mcft, the Department acquired excess land for water spread area and incurred additional expenditure on construction of headworks. The extra expenditure due to designing of the reservoir of higher capacity worked out to Rs 1.29 crore.

[9] Kondam is a structure for diversion of water partially.

3.1.10.2 Designing of excess capacity canal

Canal was designed without observing the water flow in the river.

The appraisal report for the Vashishtanadhi Anicut Scheme indicated that there was sufficient flow of water in the river during November/December to February, which could be diverted for feeding 25 tanks covered by the anicut. The CE-PF in December 1998 observed that the carrying capacity of the canal could be designed for a minimum of 15 days supply and the design should be evolved after detailed analysis of the water flow in the river. However, without observing the water flow in the river, the canal was designed for diverting the entire surplus water required in five days. Audit scrutiny also revealed that there was flood flow in the river for 54 to 74 days during 2004-06. As such, the canal should have been designed for diverting the surplus water in 15 days as suggested by CE-PF. Designing of high capacity canal to divert water in five days resulted in additional expenditure of Rs 1.11 crore.

3.1.10.3 Adoption of higher side slope for canal designing

Side slope of 1.5:1 was adopted for lining of canals in Varattar Reservoir Project as against 1:1 prescribed in the Manual on Irrigation published by the CWC. Besides, the left main canal for the reach LS 6067 m to LS 8084 m was designed for higher cross section without considering the quantity of water diverted through branch canals and direct irrigation sluices in reach LS 5150 m to LS 6067 m. These two failures resulted in avoidable expenditure of Rs 28.93 lakh.

3.1.10.4 Designing channel for higher carrying capacity

Diversion of water through branch canal was not considered while designing the main canal.

The Nilayur Extension Channel was designed to carry 654 cusecs of water for a length of 8.68 km. As the water is to feed 94 tanks located in various stretches of this channel, the carrying capacity of the channel should have been designed taking into account the diversions made at intermediate points to feed the tanks. Construction of the channel for 654 cusecs uniformly for the entire length resulted in extra expenditure of Rs 3.08 crore.

3.1.10.5 Unwarranted change of design

Adoption of higher slope led to increase in expenditure.

Manual on Irrigation and BIS prescribed a side slope of 0.25:1 to 0.5:1 for canals excavated in rocky strata. While designing the slope of supply channel from Badathalav tank, the CE-DRCS suggested (September 2004), a slope of 0.5:1 in hard rock terrains as the top soil existed only for a depth of two metre beyond which the layers were rocky. The work was taken up in February 2005. The CE, Chennai Region, who inspected the site, instructed to provide side slope of 1:1 to avoid sliding and to ensure the stability of the channel. Accordingly, the design of the channel was revised. Consequently, the cost of the project was increased from Rs seven crore to Rs 13.50 crore. The revised estimate was sanctioned by Government in December 2006.

Audit scrutiny revealed that the inspection of the CE was made immediately after the commencement of the work and only about 53,000 cubic metre (cu m) of earth was excavated. The inspection report also mentioned that the

classification of soil requires change as the site condition indicated presence of rocky strata requiring blasting which was estimated subsequently at 71 *per cent* against the original estimate of 33 *per cent*. The actual quantum of rocky strata requiring blasting in the works executed till March 2006 worked out to 69 *per cent*. In as much as the quantum of rocky strata requiring blasting increased considerably and there is a provision for side berms in the design approved by CE-DRCS, the change of design, which resulted in increase in cost by Rs 3.48 crore, was unwarranted.

3.1.10.6 Unnecessary provision of regulators

Provision of regulators in addition to leading channel proved unnecessary.

With a view to divert flood water to four groups of 25 tanks in five days, the project proposals (September 1999) for construction of anicut across Vashistanadhi contemplated construction of feeder channels from one tank to another on the outer periphery of the tanks with dividing dams to feed respective tanks and lower down tanks. Based on the instructions of the SE, PF Circle, Salem (February and April 2000), construction of feeder channels were replaced by the provision of sluice with regulator in each tank for carrying the required discharge to lower down tanks through the existing surplus courses. The project sanctioned in November 2000 and the works were taken up for execution during March and April 2002. The CE, Chennai region during his inspection in April 2002, however, instructed to provide leading channels to 21 tanks (excluding four tail end tanks) in addition to regulator to help simultaneous filling of tanks as well as taking water to the regulator directly to feed the next tank. The provision of the leading channel is nothing but the feeder channel proposed in the original project report. As the CE inspected the work immediately after the works were awarded, he should have given instructions for deletion of the provision for regulators and ordered the construction of leading channels as feeder channels. The unnecessary provision of regulators resulted in wasteful expenditure of Rs 96.69 lakh.

3.1.10.7 Provision of higher thickness of lining for field channels

Field channels were lined in excess of the thickness prescribed in BIS.

A comment was made in paragraph 4.2.2 of the Report of the Comptroller and Auditor General of India for the year ended 31 March 2005 – Government of Tamil Nadu (Civil) regarding additional expenditure due to provision of higher thickness of cement concrete lining for field channels. Test check of 96 works of modernisation of the tanks executed in five divisions[10] revealed provision of higher thickness for lining the field channels than that prescribed in the BIS resulting in avoidable additional expenditure of Rs 3.75 crore.

[10] Vellar Basin Division, Virudhachalam, Upper Pennaiyar Basin Division, Dharmapuri, Middle Pennaiyar Basin Division, Thiruvannamalai, Lower Palar Basin Division, Kancheepuram and Kosasthalayar Basin Division, Thiruvallur.

3.1.10.8 Excess use of cement

Revised BIS was not adopted in cement concrete works.

The BIS relating to Plain Cement Concrete (PCC) and Reinforced Cement Concrete (RCC) was revised in 2000 prescribing lesser usage of cement considering the higher grades of cement manufactured. In four projects[11], for which agreements were executed during 2000-06, the pre-revised BIS was specified for adoption in the work. This resulted in quoting higher rate for these works. The avoidable expenditure due to non-adoption of revised BIS worked out to Rs 1.22 crore.

3.1.11 Overpayments

Overpayments amounting to Rs 68.61 lakh were noticed in four projects due to non-enforcement of contract conditions.

3.1.11.1 Overpayment of price variation charges

Price variation charges were paid in contravention of agreement provisions.

The contract for works with a completion period of more than 18 months provides for price adjustment in respect of material, labour, fuel, etc. In the following projects, the contractors were overpaid Rs 44.55 lakh due to the reasons mentioned against each.

	Name of the Project	Overpayment of price variation	Reasons
(a)	Andiappanur Odai Reservoir Project	Rs 14.08 lakh	(i) The total percentage governing the price adjustment should be 100 whereas the aggregate of percentages prescribed for each component was 102. (ii) Contrary to agreement provisions, the value of work done paid during the quarter was adopted instead of value of work done during the quarter. This also resulted in payment of price variation for value of work done in excess of that executed and paid for.
(b)	Shenbaga-thope Reservoir Project	Rs 21.14 lakh	Contrary to the agreement provisions, the contractor was paid price variation of Rs 21.14 lakh for additional items of work.
(c)	Formation of 18th Canal	Rs 9.33 lakh	The price adjustment was computed by adopting the price index of subsequent quarters for the portions of work executed and measured during previous quarters.

[11] Modernisation of Cauvery Regulators, Shenbagathope Reservoir Project, Vashistanadhi Anaicut, Andiappanur Odai Reservoir Project.

3.1.11.2 Overpayment due to excess lead

The agreement for the work of construction of spillway of Varattar Reservoir Project provided for quarrying jelly and rough stone required for the work from quarries at Keeraipatti village (seven km) and Venkatasamudram village (36 km) respectively. During execution, both jelly and rough stones were brought from a quarry at Kudumiyanpatti village which was nine km from the site. The EE obtained permission (March 2002) from the District Collector to use this quarry for a period of three years and recovered the seigniorage charges payable for the quarried material from the bills of the contractor and remitted it to the Collector. Though a different quarry was used for bringing the material, the EE had not revised the rates based on the actual lead. This resulted in overpayment of Rs 22.59 lakh **(Appendix 3.3)**.

3.1.12. Other points of interest

3.1.12.1 Avoidable expenditure on road works

Without obtaining the design for widening/constructing 15 culverts approved by the Highways Department, the work of widening and extension of Kalvoy-Sadayaneri Channel was taken up for execution in December 1999. While the work was under execution, Highways Department insisted (November 2000) to adopt the standards prescribed by Ministry of Road Transport and Highways. Consequently, the designs were revised and the revised items were entrusted to the original contractor as additional items. This resulted in avoidable expenditure of Rs 0.50 crore due to execution of work at rates higher than the agreement rates.

Higher specification was adopted in execution of road works.

The estimate for formation of reservoir at Shenbagathope included formation of an approach road branching off from a village road to the dam site. Though the village road has three metre pavement and one metre side berms and was laid with Water Bound Macadam (WBM) and Premix Carpet (PC), the new road was formed for a width of 3.65 metre with 1.8 metre side berms with WBM, Bituminous Macadam and PC. Laying of road with higher specifications resulted in additional expenditure of Rs 18.90 lakh.

3.1.12.2 Extra expenditure due to non-usage of rock available at site

Blasted rock was not used in the work leading to extra expenditure of Rs 51.61 lakh.

The agreement for Mirugandanadhi Reservoir Project did not provide for use of rough stone available in the water spread area as well as stones available from blasting of hard rock at the spillway site. During execution 21,550 cum of blasted stones were sold by auction for Rs 1.16 lakh. During execution, the contractor actually used 46,620 cum stone in the work, which included 33,895 cum of stones collected from the water spread area and blasted stones purchased from the person who purchased them from the department in the auction. Had the agreement provided for use of stones available at site, the payment of Rs 51.61 lakh towards the cost of 33,895 cum

of stone at Rs 152.25 per cum[12] could have been avoided. Excluding the revenue of Rs 1.16 lakh realised by sale of blasted stone, the extra expenditure worked out to Rs 50.45 lakh.

3.1.12.3 Idle Investment

Due to non-forming of Water Users Association, 20 buildings constructed at a cost of Rs 31.60 lakh remained unoccupied as of March 2007.

3.1.13 Quality Control

Execution of irrigation projects conforming to standards is essential for the stability of the structures. In the following projects, non-adherence to standards resulted in sub-standard work as discussed below:

Non-adherence to quality standards resulted in leakages.

Even during execution of Andiappanur Odai Reservoir Project, test results indicated non-achievement of standard norms repeatedly. During inspection in March 2006, the special CE, Projects Circle pointed out defective works including leakage in roof and sidewalls of the gallery at a number of places. In spite of repeated reminders, the contractor had not rectified the defects and the leakage were not arrested even by March 2007.

During execution of Lakshmipuram Anicut Project, it was observed that (November 2003), the flood banks eroded and turned the adjacent roads slushy thereby causing hindrance to vehicles. As the flood bank was formed with clay soil, it was proposed to provide turfing for the side slopes of the flood bank, but it was not executed. After completion of the work (May 2004), as sliding of flood bank during rainy season continued, the CE instructed to provide gravel for side slopes and on top of the left side flood bank. Though estimates were prepared in October 2004, they were not executed as of March 2007.

The Bureau of Indian Standards (BIS) stipulated provision of either 'full cut-off[13]' or 'partial cut-off'[14] with impervious blanket (clay) on the upstream of the earthen dam to prevent seepage whenever sandy strata (pervious zone)/porous strata was noticed at the site of the earthen dam. While executing Varattar Reservoir Project, only partial cut-off without impervious blanket was provided and the project was completed. Non-provision of impervious blanket as stipulated in BIS resulted in steady seepage for more than 45 days when water was stored in the reservoir during 2006-07. Such steady seepage for more than a month is regarded as critical for the downward slope, as per BIS.

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[12] Rs 140 per cum (Cost of stone as per estimate excluding transportation, chiseling, etc.) plus Rs 12.25 per cum (tender premium at 8.75 *per cent*).

[13] a cut-off taken to an impervious stratum.

[14] a cut-off which does not go down to impervious stratum.

3.1.14 Impact of completed projects

3.1.14.1 Non-achievement of projected irrigation potential

Irrigation potential not created within the target date.

Projects sanctioned by NABARD were to be completed within a period of three years. Out of 269 projects with an irrigation potential of 71,235 ha which were proposed to be completed by March 2007, 251 projects with an irrigation potential of 42,839 ha were completed. As such, major projects were not completed and 40 percentage of irrigation potential was not created within the target date. Test check of eight incomplete projects revealed that three projects were delayed due to court cases for acquiring land for canal portions and the remaining five projects were not completed mainly due to delay in sanction of estimates, change in design during execution, increase in project cost due to execution of additional works which resulted in preparation of revised estimate and delay in obtaining revised administrative sanction from Government. These avoidable delays resulted in non-accrual of the benefits of irrigation potential of 15,298 ha in these five projects **(Appendix 3.4)**.

Out of 262 projects test checked in audit, 95 projects were completed by March 2006. The impact of these completed projects for the season 2006-07 revealed the following:

(i) Of the 95 projects completed by March 2006, 27 projects related to minor and medium irrigation and formation of new tanks which envisaged creation of 11,309 ha of irrigation potential. Test check of benefits accrued from 11 such completed projects revealed that creation of irrigation potential of 668 ha were only achieved as against 5,018 ha envisaged in these projects. The shortfall of 87 *per cent* was mainly due to (a) non-availability of water as envisaged in the project, (b) non-inclusion of essential works in the project, (c) non-acquisition of land for storage of water and (d) location of ayacuts at higher level. The details are given in **Appendix 3.5.**

(ii) Test check of records of Revenue Department in respect of 14 out of the remaining 68 projects relating to modernisation of tanks revealed that the irrigation potentials of 1261 ha as against 2124 ha envisaged in these projects were created. The shortfall was mainly due to non-availability of water, non-development of ayacuts, location of ayacuts at higher level. The details are given in **Appendix 3.6**.

3.1.14.2 Non-formation of Water Users Association

Due to the non-formation of WUAs, farmers could not participate in irrigation management.

NABARD, while sanctioning the projects stipulated formation of Water Users Association (WUA) to involve participation of farmers in irrigation management. The NABARD guidelines envisaged formation of WUAs as pre-condition for taking up tank modernisation projects as they have to play a vital role in post renovation period of the irrigation tank. The main functions of the WUAs as per Tamil Nadu Farmers Management of Irrigation Systems Act are (a) to regulate use of water, (b) to promote economy in the use of water, (c) to maintain the irrigation system, (d) to conduct periodical social audit and (e) to remove encroachments. Audit scrutiny revealed that WUAs

were not formed in any of the projects, which are under progress. While no WUA was formed in Madurai region even for completed works, WUAs, which were formed in Chennai region in respect of certain completed works, were formed under the Societies Act and not under Tamil Nadu Farmers Management of Irrigation Systems Act. As such, the function envisaged could not be undertaken by these WUAs. The concept of participation of farmers in irrigation management in respect of projects undertaken with NABARD assistance was defeated.

3.1.15 Conclusion

The projects were formulated without adequate investigation and without ascertaining the ground realities. Unviable projects were formulated by boosting the availability of water. Consequently, the irrigation potential envisaged was not created even after spending huge amount. Due to poor investigation, wrong designing and non-adoption of standards and specifications, funds received by way of loan were wasted.

3.1.16 Recommendations

- Projects should be formulated based on need and reliable data
- Projects should be sanctioned after preparation of detailed estimates to avoid time and cost overrun
- Standards and specifications should be adhered to ensure quality and economy
- Reasons for non-achievement of objective should be evaluated in respect of completed projects.

The above points were referred to Government in July 2007; reply had not been received (November 2007).

HEALTH AND FAMILY WELFARE DEPARTMENT

3.2 Medical Education

Highlights

The primary objective of Medical Education Department is to produce highly skilled medical and paramedical personnel for providing effective and quality medical care to people. Medical Council of India is entrusted with the maintenance of uniform standards of medical education both at under graduate and post graduate levels throughout the nation. A performance review on medical education in the State revealed want of proper planning and absence of a policy on the role of private sector resulting in relative stagnation of the intake capacity of medical seats as compared to demand; several PG medical courses and BDS courses conducted were not recognised by the Medical/Dental Council of India; Government medical colleges did not have the required continuous provisional affiliation to Dr MGR Medical University due to non-payment of specified fees. Patronage of research activities was poor resulting in inadequate research facilities. There was shortage of teaching faculty and lack of infrastructural facilities in medical colleges affecting the quality of medical education.

- **The available intake capacity of medical seats was inadequate in comparison with the existing demand for medical courses every year. Government's action in increasing the seats of five Government medical colleges by 315 by spending Rs 18.19 crore also failed due to the Medical Council of India (MCI) not approving the increase because of lack of teaching faculty.**

(Paragraph 3.2.7)

- **Only 14 to 16 *per cent* of the aspirants for PG courses got admission during 2002-07 because of the limited availability of seats for PG courses.**

(Paragraph 3.2. 8.1)

- **Of 38 PG and 24 Post PG speciality courses recognised by MCI, eight PG and seven Post PG courses were not offered by medical colleges in the State.**

(Paragraph 3.2.8.2)

- **Fifty eight courses, many of them PG courses, were being conducted in nine Government medical colleges and nine private medical institutions even though these were not recognised by MCI.**

(Paragraph 3.2.9.1)

- **Nursing courses suffered from deficiencies like shortage of teaching staff, lack of infrastructure etc. Paramedical courses were not continued during 2006-07 by the Director of Medical Education depriving 2760 candidates of admission to various paramedical courses.**

(Paragraphs 3.2.10.2 and 3.2.10.3)

- **There were vacancies in the posts of Professors/Readers and in the posts of Assistant Professors/Lecturers/Tutors which affected the quality of medical education. Emoluments of the faculty were lower than that of their counterparts in Arts and Science Colleges.**

(Paragraphs 3.2.11.1 and 3.2.11.2)

- **Some of the staff in position in four sample Government medical colleges did not have the requisite PG degree.**

(Paragraph 3.2.11.3)

- **In seven Government medical colleges, 27 post graduate degree/diploma courses were not inspected by the University and continuous provisional affiliation was not given for various periods since 2000-01. This is because the Government medical colleges are not paying the required inspection/affiliation fees.**

(Paragraph 3.2.12.2(a))

- **In violation of the University Act, the Post Graduate Institute of Basic Medical Sciences was not affiliated to Dr. MGR Medical University on account of issues like non-award of UGC scales by the University, fewer promotional opportunities, etc., not having been settled for a long time.**

(Paragraph 3.2.12.2(b))

- **The inefficiency of the Dr. MGR Medical University led to UGC not recognising and funding its administrative and research work. Very little research was being done. The University could only offer scales of pay lower than UGC scales and so could not attract qualified personnel. Government also failed to extend their support to persons/colleges for conducting research.**

(Paragraphs 3.2.12.3(a) and 3.2.12.3(c))

- **Infrastructure like lecture halls, staff quarters, libraries, internet facility etc., as prescribed by MCI, were found lacking in the sample medical colleges.**

(Paragraph 3.2.13)

3.2.1 Introduction

Directorate of Medical Education (DME) established in 1966, is incharge of medical education and administers the teaching hospitals attached to Government medical institutions. Dr. MGR Medical University (University), Chennai, established in 1988, exercises academic control over medical education in the State. The details of medical institutions functioning in the State both under the Government and in the private sector are given below:

Nature of Institutions	Number in		Sanctioned intake							
			UG courses-MBBS		PG Course		PG Diploma		Diploma courses	
	Govt sector	Private sector	Govt sector	Private sector	Govt sector	Private sector	Govt sector	Private sector	Govt sector	Private sector
Medical Colleges	14	11	1,645	1,220	429	Nil	460	Nil	910	Not available
Dental Colleges	1	17	100	1,470	36	283	Nil	Nil	Nil	Nil
Nursing Colleges	2	73	75	3,400	8	533	Nil	Nil	Nil	Nil
School of Nursing	21	97	Nil	Nil	Nil	Nil	Nil	Nil	1,795	2,405

Besides, there were 44 teaching hospitals attached to these Government medical/dental colleges, helping Government in imparting medical education to the students of those institutions, also providing tertiary medical care to the people.

3.2.2 Organisational set up

Secretary to Government of Tamil Nadu, Health and Family Welfare Department is incharge of medical education and teaching hospitals at Government level and the Director of Medical Education (DME) heads the administration of the field formations. An organisational chart of the Department is given in **Appendix 3.7.** Dr MGR Medical University (University) provides affiliation, conducts examinations and awards degrees and diplomas to the students. The Dean of the medical/dental college administers the attached hospitals. Tamil Nadu Medical Services Corporation (TNMSC) supplies medicines and equipment to the hospitals besides maintaining all medical equipment.

3.2.3 Audit Coverage

Performance audit on medical education for the period 2002-2007 was conducted during February 2007 to May 2007 by test check of records in the Health and Family Welfare Department in the Secretariat, Directorate of Medical Education, Dr. MGR Medical University (University), and in six medical colleges[1] out of 14 (43 *per cent),* one dental college at Chennai and eight nursing schools[2] out of 21.

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1 Government K.A.P.Viswanathan Medical College, Tiruchirappalli, Government Mohan Kumaramangalam Medical College, Salem, Government Stanley Medical College, Chennai, Government Medical College, Vellore, Government Medical College, Thanjavur and Tirunelveli Medical College, Tirunelveli.

2 Nursing schools attached to GMKMC Hospital, Salem, Government Stanley Medical College Hospital, Chennai, Government Medical College Hospital, Thanjavur, Kanniyakumari Medical College Hospital, Nagercoil, Government Hospital, Dindigul, Government Rajaji Hospital, Madurai, Government AGM Hospital, Tiruchirappalli and Government Medical College Hospital, Tirunelveli

3.2.4 Audit Objectives

Performance audit was conducted

- to assess the adequacy of the planning process
  - for creating sufficient capacity in MBBS/BDS and PG courses both in Government/private sector, as compared to existing demand of aspirants for the medical profession, and,
  - in generating a sufficient reserve of qualified medical and paramedical professionals for the development of medical education;
- to examine the availability and utilisation of infrastructure, teaching faculty, funds provided in the University and selected colleges for teaching and research activities; and,
- to analyse the relevance and reliability of the existing internal controls.

3.2.5 Audit Criteria and methodology

The following criteria were adopted to assess the performance of the department and the selected colleges/hospitals.

- Guidelines of Government of India (GOI)/Medical Council of India (MCI)/Dental Council of India (DCI)/Nursing Council of India (NCI)/Pharmacy Council of India (PCI) and the State Government,
- Goals and targets set by Government, including Government orders and departmental instructions issued from time to time,
- accepted best practices prevailing in the field of medical education, and,
- codes and manuals of the department.

The performance audit commenced with a pilot study in January 2007 and field units were selected on random sampling basis. The audit objectives and criteria were discussed with Secretary to Government, Health and Family Welfare Department at an entry conference held in March 2007. Besides test check of connected records in the sample units, information were also obtained from various official sources and from written replies from the concerned officers at Government/district/field level before arriving at audit conclusions. The important points noticed during performance audit are given in the succeeding paragraphs.

3.2.6 Financial achievement

3.2.6.1 Expenditure under medical education

Expenditure incurred under medical education during the last five years is given below:

(Rupees in crore)

Year	Plan expenditure		Non-plan expenditure		Total expenditure
	Revenue	Capital	Revenue	Capital	
2002-03	2.60	8.51	96.41	-	107.52
2003-04	2.09	7.21	92.61	-	101.91
2004-05	5.71	0.65	154.67	-	161.03
2005-06	10.42	26.34	116.31	-	153.07
2006-07	8.97	9.85	137.61	-	156.43

The increase under non-plan revenue expenditure was mainly due to the salary component. The capital plan expenditure during the period 2002-06 was mainly on construction of buildings for the new medical colleges at Thoothukudi, Theni and Kanniyakumari. As the funds for capital expenditure were provided directly to PWD, DME had no system to monitor the utilisation of funds towards construction activities.

3.2.6.2 Discrepancies in selection committee funds

a) A selection committee headed by an Additional Director of Medical Education as secretary of the committee is functioning in the Directorate of Medical Education to co-ordinate medical, paramedical and nursing admissions under a single window system. The revenue realised through the sale proceeds of application forms, admission cards, interview cards, prospectus etc. was credited to the PD account, opened for this purpose. The expenditure on printing of the above items, stationery, selection processes etc, are being met from this PD account.

The selection committee realised Rs 15.34 crore during March 1998 to January 2007 as revenue and credited the funds to PD account, of which Rs 13.30 crore were spent directly from PD account. Retention of Government receipts without remitting the money into Consolidated Fund and direct utilisation of these receipts for expenditure circumvents the existing legislative procedure of incurring expenditure after voting through an Appropriation Act. The DME stated (March 2007) that Finance Department had already raised this matter and Government had been addressed for further clarification in March 2007.

Perusal of connected records revealed the following deficiencies.

- Rs 6.83 crore[3] out of the total expenditure of Rs 13.30 crore during 2001-07, were spent on various items, not connected with selection purposes, which ought to have been met from departmental funds and,

- Vouchers for Rs 14.56 lakh paid in lumpsum to the Deans of Medical colleges, for meeting the expenditure relating to MCI inspection were

[3] Payment of affiliation fees/inspection fees to Medical Council of India, advocate fees, telephone charges, payment of air-fare, purchase of furniture, fuel charges etc.

not produced to Audit, as the vouchers were not received from the Deans concerned.

b) Further the amount of Rs 5,000 deposited by each of the candidates selected for medical and dental courses was credited in a bank account every year. On admission of the candidate, the amount was to be transferred to the college to which he had been admitted. In cases where candidates had not joined, the amount was to be forfeited. Audit observed that Rs 1.19 crore out of the deposit amount collected during the last six years remained (March 2007) in bank accounts. The amount of actual interest accrued till date in the account was not made available. The selection committee did not have the details of amounts due to be transferred to various colleges nor of what was to be forfeited.

The absence of a proper system in this regard resulted in retention of forfeited amounts outside Government account instead of remitting them to Government account.

3.2.7 Poor and inadequate planning for increasing the number of MBBS seats

3.2.7.1 The primary objective of the Department is to produce highly skilled medical and paramedical manpower to provide effective and quality tertiary medical care to the people and also, to promote medical research to enhance the quality of human life. Assessing the requirement of medical and paramedical personnel on a scientific basis taking into account the growth and greying of population (demographics), pattern of diseases prevailing and emerging morbidity rate, etc., is essential for proper and effective planning.

Inadequate intake capacity of medical seats as compared to the demand existing.

The total intake capacity of MBBS seats under UG courses in the State as of 2007 is only 2,865 in the existing 14 Government medical colleges (1,645) and 11 private medical colleges (1,220). The intake capacity under UG courses (BDS) in dental colleges is 1,570 (one Government college: 100 and 17 private dental colleges: 1,470). The number of MBBS seats in the State is rather low when compared with the 65,000 seats[4] available in engineering colleges in the State (less than five *per cent* of the seats for engineering) despite a gradual increase of 800 seats during 2003-07 by establishment of three new Government colleges and four private colleges. The demand for medical seats was very heavy as the number of aspirants[5] applying during the last five years ranged between 8,069 and 14,941.

A comparison of the State with neighbouring states is given below:

[4] Under Government colleges: 3,455 seats and under private sector colleges: 61,545 seats.

[5] 2002-03: 14,941 ; 2003-04: 12,815 ; 2004-05: 12,783 ; 2005-06: 12,812 ; 2006-07: 8,069 and 2007-08: 13,304.

Name of the State	Number of medical seats (MBBS)[6]	Population (2001 census) (Number in crore)	Population per medical seat (in number)
Tamil Nadu	2,865	6.24	21,782
Andhra Pradesh	3,825	7.57	19,798
Kerala	2,050	3.18	15,531
Karnataka	4,355	5.27	12,108

The table above shows that Tamil Nadu ranked last among the southern states as it had just one medical seat (MBBS) for a population of 21,782.

Inconsistent policy regarding role of private sector in medical education.

The planning for creation of additional capacity is important as the number of aspirants is very high in comparison with the number of medical seats available now in the State. Keeping in view the norms of Medical Council of India (MCI) and Dental Council of India (DCI) and because it would be prohibitively expensive to open more medical colleges in the State sector, Government decided (August 2001) to overcome the shortage of doctors in rural areas by allowing private organisations to open medical/dental colleges in backward areas of the State, by relaxing some existing conditions prescribed early in 1999-2000. Despite the opening up of this area, only four medical colleges under private sector with 500 seats were established during the last five years in addition to the three colleges established in the Government sector. DME, in response to Audit, stated (May 2007) that its recommendation for the establishment of two medical colleges and eight dental colleges in the private sector and issue of essentiality certificates to these colleges was under finalisation. The reply showed that the department/Government, deviating from their earlier decisions, is now concentrating on the dental side rather than on the medical side. In view of resistance from the medical students and due to the new policy decision of starting Government colleges in all districts, the State Government reversed their earlier decision of allowing private sector into the field despite several agencies in the private sector being willing to open new medical colleges.

MCI did not agree to increase intake capacity of five medical colleges due to lack of sufficient teaching faculty. Rs 18.19 crore, cost of infrastructure created also became unfruitful.

Government decided (November 2001) to implement the other alternative of increasing the intake capacity of five existing Government medical colleges by 315 seats and spent Rs 18.19 crore on construction of classrooms, auditorium, laboratories etc., during 2003-07. Medical Council of India (MCI) did not, however, agree to the proposed increase in the intake capacity of these colleges on the ground that they lacked sufficient teachers in non-clinical departments. The expenditure of Rs 18.19 crore thus became infructuous (March 2007). Government finally announced a new policy decision during 2006-07 of starting one medical college in each district of the State which did not have a medical college. However, no action has been taken as yet.

Thus, lack of proper planning and the absence of a well thought out and consistent policy on the role of private sector, resulted in Government's lack

[6] Figures from the website of Medical Council of India www.*mciindia.org*

of success in increasing the number of MBBS seats for medical students in comparison with the increasing demand and rising aspirations of the people. Also, the Government's failure in attracting and retaining qualified personnel to meet MCI's norms in furthering medical education in the State further aggravated the position.

3.2.7.2 Absence of a system for verification of mark sheets

DME had no system to verify the genuineness of the plus two mark sheets of students admitted to the diploma in nursing course in Government nursing schools. DME referred the plus two mark sheets to the Director of Government Examinations (DGE), based on a complaint received from an individual. DGE reported after verification, that the details given in respect of 15 students who had secured admission differed from the details available as per the records of DGE. In a similar incident, when doubts were raised in the case of 25 nurses who had already completed the nursing course in 2003 and were employed in different Government hospitals on consolidated salary, no action was reported to have been taken to get their certificates verified for authenticity. In response to an audit query on the system of verification of certificates submitted at the time of admission of nursing students, the DME replied (May 2007) that these certificates were not verified by the selection committee upto 2005-06. However, instructions have been issued to all the Principals of nursing schools to ascertain the genuineness of the certificates of all candidates admitted for nursing course for 2006-07 from the DGE. Test check in one sample hospital viz. Stanley Medical College Hospital, Chennai revealed that the certificates were not sent for verification (May 2007). In another sample hospital, Government Medical College Hospital, Vellore, the certificates sent to DGE were yet to be received (May 2007).

3.2.8 Shortage of post graduate (PG) and speciality courses

3.2.8.1 Shortage of PG courses

At the post graduate(PG) level 157 PG degree and 76 PG diploma courses in medicine are available in the State (169 in Government and 64 in the private sector). In dentistry, 42 PG degree courses are available (7 in Government and 35 in the private sector).

An analysis of the admission of students to PG courses during 2002-07 revealed that though there was enough demand, only 14 to 16 *per cent* of the aspirants got admission because of limited number of seats in Government colleges as given below:

Year	Number of seats available in Government colleges				Number of applications received	Number admitted (percentage)
	MD	MS	Diploma	Total		
2002-03	278	140	451	869	5416	853(16)
2003-04	278	140	451	869	5570	812(15)
2004-05	289	146	468	903	5696	905(16)
2005-06	293	146	468	907	5808	897(15)
2006-07	284	145	460	889	6001	843(14)

Though DME proposed to start 27 courses in seven colleges, MCI did not agree because of inadequate infrastructure and instrumentation, and lack of qualified staff.

3.2.8.2 Shortage of speciality courses

Government has not assessed the requirement of various specialists to serve the State on a scientific basis by considering the population and incidence of various diseases. As against 24 post PG and 38 PG speciality courses in the approved list of Medical Council of India (MCI), colleges in Tamil Nadu did not offer or conduct 7 post PG and 8 PG courses as given below.

Post PG Courses (DM and M.ch)	Clinical pharmacology, Endocrinology, Neonatology, Neuro Radiology, Pulmonary Medicine, Cardio thoracic and vascular surgery and Endocrine Surgery
PG Courses (MS and MD)	Aviation Medicine, Bio-physics, Community Health administration, Health administration, Hospital administration, Lab medicine, Nuclear Medicine and Physical Medicine and Rehabilitation

(i) Out of the above 15 unavailable courses, DME proposed to start three post PG[7] courses and one PG course (Health Administration) in two colleges *viz*., Madras Medical College, Chennai and Madurai Medical College, Madurai during 2006-07. MCI, however, did not recommend the courses for want of qualified staff, library and laboratory facilities, leading to their continued non-availability in the State.

(ii) The population of elderly people keeps increasing in the State and as per census 2001, the population of citizens of 60 to 70 years of age and above 70 years of age stood at 34 lakh and 20 lakh respectively. Though the ageing population is growing at a steady pace, MD (Geriatrics), a speciality course exclusively for the care of aged people was offered only in Madras Medical College since 1999-2000 with an intake capacity of two seats. In the wake of increased longevity, steps should have been taken to increase the number of specialists in this course. However it was noticed that no proposals were made to increase the intake capacity or to start this course at other medical colleges.

3.2.9 Non-recognition of existing PG and BDS courses

3.2.9.1 Failure in getting MCI recognition for various courses conducted

Under Section 10A of the Indian Medical Council (IMC) Act, 1956, permission to establish a new college or a new course of study or for increasing the admission capacity in any course or study should be obtained from the Government of India (GOI), which accords permission, based upon the recommendation of Medical Council of India (MCI). The permission so granted is valid till the first batch of students completes the course and

[7] DM (Endocrinology), DM (Neonatology) (in two colleges) and DM (Clinical Pharmacology).

thereafter, the concerned college needs to apply for recognition under Section 11(2) of IMC Act, if it is not already included in the first schedule[8].

(a) Medical Council of India (MCI) had addressed (August 2000) all the Health Secretaries/Medical Education Secretaries of all State Governments directing the University or the autonomous institution to approach GOI for getting those post graduate degrees recognised, which had not been recognised earlier irrespective of whether they had been instituted before the IMC (Amendment) Act, 1933 or permitted under Amendment Act recognised through MCI, so as to ensure that students passing out from such institutions were not put to any disadvantage. As no concrete action was taken by Government, the MCI again urged the University to ensure that all post graduate courses offered get recognition. Further MCI stated that as the candidates were not informed about non-recognition by MCI at the time of admission, the University should indicate the status of recognition in the prospectus of such courses.

Accordingly, the University forwarded (February 2002) the proposal for the recognition of 69 postgraduate diploma/degree courses[9] at eight colleges to GOI along with a demand draft for Rs 34.50 lakh towards inspection fees (at the rate of Rs 50,000 per course). As of March 2007, 41 courses out of 69 have been recognised subsequent to the inspections conducted by MCI and compliance reported by the concerned colleges.

Conducting of 58 courses without getting recognition from MCI.

As of March 2007, out of 233 higher speciality degree, postgraduate degree and diploma courses conducted by nine out of 14 Government medical colleges and nine out of 11 private medical institutions affiliated to Dr M G R Medical University, 58 courses[10] (commenced between 1952 and 2004) are presently unrecognised by MCI ***(*Appendix 3.8*).*** The main reason pointed out by MCI was the shortage of required qualified teachers. During 2002-07, the period of audit, 591 students were admitted to these unrecognised courses. The total number of students admitted since inception of these unrecognised courses was not made available by DME to Audit.

(b) Nineteen post graduate degree holders of Thanjavur Medical College reported, as early as in September 1999, that because of the non-recognition of their PG courses, they were unable to appear for the supplementary courses in other universities or to apply for higher courses or for jobs abroad and their representation to the University had been turned down as the University had no powers for giving recognition, which lie only with MCI.

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8 First schedule to IMC Act, 1956 contains the list of colleges/courses in India already recognised for the purpose of IMC Act.

9 Chengalpattu Medical College: 1, Kilpauk Medical College:9, Madras Medical College: 7, Madurai Medical College: 11, Stanley Medical College: 15, Thanjavur Medical College: 15, Tirunelveli Medical College: 7 and Coimbatore Medical College: 4.

10 52 courses conducted by seven Government medical colleges and six courses conducted by two private medical institutions.

In Thanjavur Medical College, one of the test checked units, MCI refused to recognise two courses[11] as the departments concerned were headed by Professors, whose PG degrees were not recognised by MCI.

MCI did not conduct inspection for recognition in eight courses due to shortage of qualified teachers in the respective disciplines.

The main reason attributed by DME to the MCI not inspecting the colleges, was shortage of qualified teachers in the respective discipline in eight[12] out of 15 courses not inspected in three medical colleges in Chennai and one each in Madurai, Thanjavur and Tirunelveli.

3.2.9.2 Perusal of certain cases in sample hospitals revealed the following.

Non recognition of Diabetology course

Diabetology courses conducted in Madras Medical College during 1986-2005 without recognition of MCI.

A postgraduate diploma course in Diabetology in Madras Medical College was started from 1986-87 based on the permission given by MCI to start the course in 1985 under Section 10A. The course commenced from 1986-89 batch with 3 students for each academic year. MCI did not seek any clarification on the course at the time of giving initial permission. When the college approached MCI belatedly in 2003 for recognition of the course, MCI did not recognise the course stating that Diabetics was only a disease and could not be considered a speciality and insisted upon the discontinuance of the course. However, the course was continued till December 2005 without recognition. By that time, 53 doctors had completed the course but their PG diplomas are still unrecognised (April 2007).

Non-recognition of Clinical Haematology course

Due to deficiencies like non-availability of investigation facilities, inadequate instrument, equipment etc., the Post graduate Clinical Haematology course in Madras Medical College was not recognised by MCI.

The postgraduate course DM (Clinical Haematology) started with two students from 1999-2000 in Madras Medical College and continued upto 2002-03. MCI decided not to recommend recognition based on their inspection report (September 2002) stating that there were no facilities to carry out investigation study in this speciality, instruments/equipment were grossly inadequate and facilities for modern indoor care were not available. The Continuous Provisional Affiliation (CPA) was not granted by Dr MGR Medical University from the academic year 2001-02. The college discontinued the course after 2002-03 without taking any remedial action for rectifying the deficiencies. Four doctors who had undergone the course and obtained their degree during 1999-2002 were affected by this non-recognition.

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[11] M.S.(Anatomy) and M.Ch (Neuro surgery).

[12] M.D., Anatomy (Stanley Medical College), M.D., Physiology (Kilpauk Medical College), M.S., Anatomy (Madras Medical College), M.D., Physiology (Madurai Medical College), M.D., Forensic Medicine (Madurai Medical College), M.D., Radio Diagnosis (Madurai Medical College), M.S., Anatomy (Thanjavur Medical College) and M.D., Forensic Medicine (Tirunelveli Medical College).

Continuance of increased intake without approval of Dental Council of India

DCI did not approve the increased intake of 40 seats in Tamil Nadu Dental College and Hospital due to deficiency in staff and infrastructure.

(a) Government increased (April 1995) the number of seats in BDS courses in Tamil Nadu Dental College and Hospital, Chennai from 60 to 100 from 1995-96. Though GOI and DCI renewed the approval for the course from year to year upto 2005-06, the DCI did not recommend (June 2006) necessary approval for the increased seats on account of non-furnishing of a compliance report on the deficiency in staff and infrastructure already pointed out by the Council. Even in the latest report (June 2006) the Principal merely stated that the required faculty was being recruited and the required infrastructure would be provided as the college had already acquired sufficient land. Despite DCI's objection to the continuance of increased intake, Government admitted 100 students to this course for the academic year 2006-07.

(b) Based on an observation made by the Madras High Court on a writ petition filed by 90 dental students, GOI regularised (December 2005) the excess intake of 90 students on the condition that 2 seats in any of the speciality courses were to be surrendered each year till the entire excess intake was neutralised. GOI also stated that such relaxation would not be made in future. However, the intake of students was continued at the increased level even as of February 2007. A compliance report was sent for the failings pointed out by DCI by the Principal in February 2007 to DCI and further action in this matter is still awaited (April 2007).

(c) Similarly, 38 students were admitted against the sanctioned capacity of 20 in 7 speciality courses[13] under dental education during 1997 to 2001 without the approval of DCI and no action was taken subsequently for getting recognition for the increased intake under these courses from DCI.

3.2.9.3 Failure of the Government, in providing necessary qualified teaching staff and the required infrastructural facilities, despite the MCI/DCI repeatedly reiterating these deficiencies as the reasons for non-recognition of PG/BDS courses, led to this situation.

[13] Prosthodontics – 6 against 2, Periodontics – 6 against 3, Orthodontics- 6 against 4, Oral surgery-6 against 4, Oral pathology-4 against 2, cons.dentistry-6 against 3 and Oral medicine-4 against 2.

3.2.10 Deficiencies in the functioning of colleges

3.2.10.1 Non adherence to MCI norms

Inspection fees of Rs 64 lakh paid to start 32 PG degree/diploma courses in medical colleges was locked up due to refusal of MCI in giving recognition as the department failed to provide required faculty and infrastructure.

Without ensuring the adequacy and availability of qualified faculty and necessary infrastructure as per MCI norms, DME proposed (between 2002 and 2007) to start 32 PG degree/diploma courses in various government medical colleges (including five new courses as discussed in para 3.2.8) and paid inspection fees and processing fees for course recognition at the rate of Rs two lakh per course to MCI which were not-refundable. However MCI refused recognition (between November 2006 and February 2007) for these courses citing shortage of qualified teaching staff. This had resulted in the non-commencement of the courses and Rs 64 lakh spent for this purpose became unfruitful.

3.2.10.2 Deficiencies in conducting nursing courses

Prior to 2002-03, nine Government nursing schools attached to different medical college hospitals[14] were functioning in the State with a combined annual intake of 745 students for the diploma in nursing course. Based on a Government decision to start nursing schools in district headquarters, Government ordered the establishment of 12 new nursing schools with an annual intake capacity of 50 per school and increasing the annual intake by 50 seats in each of the existing nine nursing schools.

Perusal of connected records in the sample eight schools out of the 21 schools revealed the following:

(a) Six out of eight sample schools did not have a Principal. The shortage of other teaching staff viz. Vice Principal, Senior Tutor, Tutor and Additional Tutor for Interns, as required by Indian Nursing Council (INC) norms in eight sample schools ranged between 36 and 68 *per cent,* as given in **Appendix 3.9.**

[14] Government General Hospital, Chennai; Government Stanley Hospital, Chennai; Kilpauk Medical College Hospital, Chennai; Government Rajaji Hospital, Madurai; Thanjavur Medical College Hospital; Tirunelveli Medical College Hospital; Annal Gandhi Memorial Government Hospital, Tiruchirappalli; Government Mohan Kumaramangalam Medical College Hospital, Salem and Coimbatore Medical College Hospital.

(b) Audit found that Government failed to sanction the required number of teaching staff as per INC norms in five sample nursing schools.[15] Inadequate teaching faculty along with lack of infrastructural facilities were also pointed out by INC during their visit (February 2007) for the recognition of General Nursing Midwife course in the school of nursing in AGM Hospital, Tiruchirappalli, one of the sample school.

Deficiencies like shortage of teaching staff, retention of funds outside Government account, direct utilisation of Government receipts for Government expenditure, lack of infrastructure, etc., in conducting nursing courses were noticed.

(c) Rs 2.09 crore were lying unutilised out of the fees collected by seven sample hospitals as of March 2007 in their PD Account in Government Account.

(d) Government ordered (December 2006) recruitment of part time lecturers utilising the unutilised funds available with them, for the newly introduced subjects[16] from 2006-07 onwards, as per the nursing curriculum stipulated by INC in June 2004. DME reiterated (January 2007) the same by directing the Heads of Medical Institutions to issue necessary instructions to the Principals of the schools. However, none of the sample nursing schools had recruited any part time lecturers. As a result these courses had not commenced (May 2007).

(e) None of the sample nursing schools had sufficient classrooms, hostels and other infrastructure to meet the INC norms.

(f) Seven sample schools[17] had mini-bus/van to facilitate the visit of students to various health facilities as part of the course curriculum. However, drivers and funds for fuel were not provided to these schools for running the vehicles. As a result, the vehicles were put to limited use by the students through their own personal arrangements, defeating the objective of visiting various health facilities during their study period.

3.2.10.3 Non conducting of Para Medical courses

Non continuation of para medical courses during 2006-07, depriving 2,760 personnel from getting into these courses.

Based on Government's announcement in the Legislative Assembly (3 April 2003), DME forwarded (April 2003) a proposal to start nine new paramedical certificate courses[18] of one-year duration in Government medical colleges to train manpower for operation of biomedical equipment. Government accorded formal permission to DME in June 2003 for starting the courses from the academic year 2003-04 with instructions to send full details

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15 Stanley Medical College; Kanniyakumari Medical College; Annal Gandhi Memorial Hospital at Tiruchirappalli, Tirunelveli Medical College Hospital and GMKMC Hospital, Salem.

16 English, Health Economics and Computer Science.

17 Kanniyakumari Medical College Hospital, Nagercoil; Government Hospital, Dindigul; Government Rajaji Hospital, Madurai; Annal Gandhi Memorial Hospital, Tiruchirappalli, Tirunelveli Medical College Hospital, GMKMC Hospital, Salem and Thanjavur Medical College Hospital.

18 (i) Cardiac sonography technician, (ii) ECG, Tread mill and pump technician, (iii) Catheterization lab technician, (iv) Emergency care technician, (v) Respiratory therapy technician, (vi) Dialysis technician, (vii) Anesthesia technician, (viii) Theatre technician and (ix) Ortho technician.

of syllabus, eligibility/mode of selection of students, mode of examination in consultation with the specialists before 15 July 2003. Based on the meeting convened by the DME with the Deans and the revised proposals of DME (October 2004 to December 2004), Government issued (March 2005) orders for starting 10 certificate courses and one Diploma course in Medical Lab Technician (DMLT) in all Government Medical Colleges after splitting the ECG, Treadmill Technician and Pump operator course into two courses viz. (i) ECG/Treadmill Technician course and (ii) Pump Technician course. The courses were started for the academic year 2005-06 in October 2005 and 2760 students (1850 students for 10 certificate courses and 910 students for DMLT course) were enrolled for the academic year 2005-06. However, no admission to these courses was made for the next academic year 2006-07 as the Government could not approve DME's proposal for increasing the intake capacity of these courses to 5000 in time. As the Government orders were received only in March 2007, the Directorate of Medical Education stated (July 2007) that action is being taken for admission for the academic year 2007-08.

DME could have conducted these courses with the intake already sanctioned by Government during 2006-07 and the increase could have been effected after getting Government sanction. The non-continuation of the existing courses reflected poor planning on the part of DME and hampered the creation of more qualified paramedical personnel, as 2,760 candidates were denied admission to paramedical courses.

3.2.10.4 Inadequate community medicines classes

Deficiencies in conducting community medicines classes, prescribed by MCI

According to the syllabus prescribed by MCI, 30 hours of theory and at least 30 hours of field visits (15 field visits each of two hour duration) have to be conducted for community medicine during the first year of MBBS. In Thanjavur Medical College, however, classes of community medicine were conducted only during the second year, which was against the directions of MCI and would also affect the conduct of second year classes specified as per the course curriculum. In Salem Medical College, the number of field visits undertaken for community medicine ranged between five and seven against the envisaged 15 visits and the field trips to PHCs/UHPs were not undertaken though envisaged in the syllabus prescribed by MCI. In Vellore Medical College also, four field trips alone were undertaken. These defects were noticed in three out of the six medical colleges audited, defeating the objective envisaged in the syllabus.

3.2.10.5 Inadequate dissection of cadavers

The MCI syllabus prescribes dissection of body parts of cadavers by students to acquire knowledge of human anatomy. The ratio between the dissected cadavers and the students as per MCI norms is 1:10. Test check of records revealed that the percentage of shortfall during 2002-07 in dissection of cadaver ranged between 38 and 92 in Thanjavur Medical College, 10 and 80 in Government KAPVMC, Tiruchirappalli and 38 and 54 in Tirunelveli Medical College. In Government Medical College, Vellore, the percentage of shortfall

was 50 during 2005-06 and 2006-07. This shortfall would lead to the students not acquiring the requisite knowledge during the practical sessions. The cause for the shortfall was attributed to the scarcity of cadavers by the Thanjavur and Tiruchirappalli Medical Colleges.

3.2.10.6 Poor pass percentage under MBBS course

An analysis of pass percentage in the final examinations during the period 2002-07 revealed that only 53 *percent* (3752 out of 7130) students completed the course in the stipulated 4 ½ years. Of the remaining, 30 *percent* (2178 students) and 17 *percent* (1200 students) took 5 years and more than 5½ years respectively for completing the course. It was also noticed that 51 students and 15 students had taken more than seven years and ten years respectively for completing the course, because of the lack of any cap on the number of years or attempts, as available for engineering courses.[19]

In Thoothukudi Medical College (started in 2000-01), which had a large number of vacancies of teaching faculty[20], 39 *per cent* students completed the MBBS course within the stipulated 4 ½ years.

All the above clearly affected the availability of qualified medical professionals in the field.

3.2.11 Teaching Staff

3.2.11.1 Poor salary structure in Medical Colleges

Due to non-awarding of UGC scales, the teaching staff of medical and dental colleges were drawing less pay than their counterparts in Arts and Science colleges.

The teaching staff of medical and dental colleges were receiving less emoluments when compared to their counterparts in Arts and Science Colleges who were drawing UGC scales, as shown below.

Sl.No.	Name of the Post	Scale of pay of Medical University	Scale of pay of Madras University
1.	Professors	Rs 12750 – 375 –16500	Rs 16400 – 500 -22400
2.	Readers	Rs 10000 – 325 –15200	Rs 12000 - 420 - 18300
3.	Lecturers	Rs 9100 – 275 – 14050	Rs 10000 – 325 - 15200

3.2.11.2 Shortage of staff

Government medical colleges are chronically short of teaching staff, resulting in poor quality education and non recognition of courses by MCI.

As against the normative requirement of 4,938 teaching staff of different categories (excluding DME and Deans) in medical colleges and teaching hospitals attached to all the medical colleges in the State, as per MCI norms, Government sanctioned only 4,355 Posts (88 *per cent*) as of April 2007. 3,873 posts alone (78 *per cent* of MCI norms) were filled up, leaving the remaining

[19] A maximum period of seven years was only allowed for passing the BE course

[20] Thoothukudi Medical College: 26 out of 49 posts of Professor/Reader and 28 out of 110 posts of Assistant Professor/Tutors

482 posts vacant relating to all teaching hospitals under the control of DME. The details of vacancies of the teaching staff in the 14 government colleges and one dental college in the State, as given by DME, are given in **Appendix 3.10A.**

The vacancy position (April 2007), as seen from **Appendix 3.10A**, is acute in the cadre of Professor/Reader in eight medical colleges[21] with the percentage of vacancy against the sanctioned strength ranging between 24 and 56. Though the position of the State as a whole, in the case of Assistant Professors/Lecturers/Tutors was slightly better, the vacancy in this post was severe in three colleges with the percentage against the sanctioned strength varying between 25 and 29.

The vacancy position in the teaching posts as of April 2007 in the sample medical colleges and the dental college, is given in **Appendix 3.10B**.

Vacancy in the posts of Professor/Reader was acute in four sample colleges. Similarly the position of vacancy in the post of Assistant Professor/Lecturer/ Tutor was high in one sample college.

The vacancy in the posts of Professor/Reader is acute at 38 *per cent* in Tirunelveli Medical College, 27 *per cent* in the Tamil Nadu Government Dental College and Hospital, 25 *per cent* in GMK Medical College, Salem and 24 *per cent* in Government Medical College, Vellore and in the remaining sample colleges, it ranged between seven and 20. Similarly the percentage of vacancy in the posts of Assistant Professor/Lecturer/Tutor is high at 29 *per cent* in Government Medical College, Vellore and it ranged between three and 18 in the remaining six sample medical colleges. The vacancy in both the cadres is pronounced in Government Medical College, Vellore.

3.2.11.3 Non availability of qualified staff

Staff in position in four sample colleges without the requisite PG degree in their relevant subject.

Of the staff in position in four sample medical colleges viz Government Mohan Kumaramangalam Medical College (GMKMC), Salem, KAP Viswanathan Medical College (KAPVMC), Tiruchirappalli, Tirunelveli Medical College and Stanley Medical College (SMC), Chennai, 56, 56, 43 and 40 *per cent* of teaching staff respectively in 8 non–clinical departments[22] did not possess the requisite PG degree in the subject which they taught, affecting the quality of education imparted. The macro position of unqualified staff without PG degree, holding teaching position in all the medical colleges in the State was not available with the DME and the University.

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[21] Tirunelveli Medical College (31), Thoothukudi Medical College (26), Kanniyakumari Medical College (28), Theni Medical College (23), Coimbatore Medical College (23), GMKMC, Salem (19), Vellore Medical College (12) and Tamil Nadu Government Dental College (6).

[22] Anatomy, Physiology, Biochemistry, Pathology, Microbiology, Pharmacology, Forensic Medicine and Community Medicine.

3.2.11.4 Unauthorised absence

DME failed to take legal action in the cases of doctors went on unauthorised absence.

DME stated (June 2007) that as of March 2007, 355 PG doctors teaching in medical colleges in the State were on unauthorised absence for more than one year. Though it was reported that all these doctors had executed a bond for specified amount with a binding period[23], the details of bond along with the amount of the bond, year of passing PG course and the period of service rendered after passing PG course were not compiled for these 355 doctors by the Department. Test-check of case files and service registers of 48 doctors of five sample units revealed that 35 doctors[24] (73 *per cent)* after their MBBS course, had secured admission to their PG degree courses under service quota.[25] DME also failed to initiate any legal action for getting the bond amount from these absent doctors. Instead, the DME merely issued notices under Rule 17 B of Service Rules and forwarded the details of these cases to Government, where again no action was taken. This unchecked absenteeism of teaching staff also contributed to the shortage of teachers. Stringent legal action by the DME/Government against such absentees and recovering the bond amount, which was steeply increased in August 2004, would have eased the absenteeism subsequently.

3.2.11.5 Voluntary retirement

Records revealed that 74 Surgeons and 150 Assistant Surgeons/Tutors took voluntary retirement in the State during 2002-07 constituting about 6 *per cent* of the total staff.. The exodus of such experienced persons from medical colleges/teaching hospitals, constituting above 46 *per cent* of the vacant posts, highlights the need for devising ways of retaining qualified teaching staff.

3.2.11.6 The Government is thus slowly losing skilled medical and paramedical professionals due to absenteeism, voluntary retirement, etc.

3.2.12 Functioning of Tamil Nadu Dr. MGR Medical University

3.2.12.1 The University was established under the Tamil Nadu Dr. MGR Medical University Chennai Act, 1987 (Act). The main objectives of the University were to provide for research and for the advancement and dissemination of knowledge in the field of medical science; to provide for instructions and training in such branches of learning as it may determine in the field of medical science; to develop research facilities and to organise advanced studies and research programmes from time to time. As of January

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[23] Rs 50,000 till 2003 with a specific binding period of 15 years and Rs 5 lakh for PG diploma and Rs 10 lakh for PG degree/MDS/Higher speciality courses with specific binding periods ranging from 20 years till the date of superannuation.

[24] Stanley Medical College Hospital: 17, AGM Government Hospital, Tiruchirappalli: 8, Government KAPVMC, Tiruchirappalli: 4, Government Medical College, Vellore: 1, and Tirunelveli Medical College: 5.

[25] 50 *per cent* of the Post Graduate seats are reserved for medical officers in Government service as service quota.

2007, 232 medical institutions were affiliated to the University, offering courses in 123 disciplines.

Scrutiny of records with reference to affiliation of colleges and creation of various departments for conducting research facilities for furthering of medical education revealed the following.

3.2.12.2 Affiliation of courses

(a) Non issue of continuous provisional affiliation

Section 5(5) of the University Act provides for affiliation of colleges lying within the University area, to the University. As per statute 42 and 43 of the University, colleges will be affiliated provisionally at the first instance, and on completion of the course by the first batch of students, permanent affiliation will be granted based on the application of the concerned colleges to the University. The amendment to this clause in August 2005 provide for issue of continuous provisional affiliation (CPA) instead of permanent affiliation. The procedure for this involves inspection of the college by the University on request and payment of prescribed fees by the college.

Continuous provisional affiliation was not issued to Government colleges due to non-payment of prescribed fees for inspection and affiliation.

As government colleges did not pay the inspection and affiliation fees, the governing council of the University in March 2005 resolved not to inspect these colleges till the arrears were settled in full. Consequently, the quinquinniel inspection due in 2005 in respect of 5 government colleges[26], which existed prior to the formation of the University, were not conducted by the University due to non payment of fees by these colleges. In another five colleges inspection was not conducted in two government medical colleges[27] after 2003-04 and in three government medical colleges[28] after 2006-07 by the University. Consequently CPA was not issued. Besides, 27 post graduate degree/diploma courses conducted by seven other government colleges were not inspected and CPA has not been issued for various periods from 2000-01, the details of which are given in the **Appendix 3.11.** However since these colleges are Government institutions, University continued to issue degrees to the passing students of these colleges.

In seven government colleges, 27 courses were not inspected and continuous provisional affiliation not given.

[26] Madras Medical College, Stanley Medical College, Madurai Medical College, Kilpauk Medical College and Thanjavur Medical College.

[27] GMKMC, Salem and Government KAPVMC, Tiruchirappalli.

[28] Government Medical Colleges at Thoothukudi, Vellore and Theni.

(b) Non affiliation of medical institution

One post graduate institute in Chennai was not affiliated to Dr MGR Medical University as required under University Act mainly due to non-awarding of UGC scales, fewer promotional opportunities in the Universities etc.

According to Section 6(1) of the Act, no college or institution within the University area was to be affiliated to any other university other than this University. However, Dr A.L.M. Post Graduate Institute of Basic Medical Sciences functioning in Taramani, Chennai offering 11 courses continued to be affiliated to Madras University and the degrees are awarded by the Madras University. Unresolved issues such as continuing the UGC scales of pay (which they are presently getting) on transfer to the Medical University, better promotional opportunities for the staff, receipt of UGC grants, etc. blocked the transfer of this institution from Madras University to Medical University, even after 20 years.

3.2.12.3 Establishment of departments for conducting research facilities

(a) Poor functioning of established departments

Due to non functioning of required number of departments, University failed to get financial assistance from UGC

A high level team of the University Grants Commission (UGC) after visiting in April 1993, remarked that one of the criteria for UGC recognition and funding of the University is that it should have at least five departments working, with adequate staff under its direct control. As the University could not establish 5 fully functional departments till date, it could not take up the matter of UGC recognition and funding. As a result, the University failed to get financial support from UGC for its administrative and research activities.

The details of expenditure incurred during 2001-06 for various departments are given in **Appendix 3.12.**

Poor/non-functioning of the departments created for research activities in the Medical University

Perusal of connected records revealed that to undertake research and to impart knowledge on current trends in medical education research, Government issued orders for establishing seven departments in the University from time to time since 1996 of which only four departments[29] were functioning. Of the remaining, Medical Genetics department was not functioning despite incurring Rs 36.52 lakh, while Hospital Administration and Medical Biotechnology departments were not even established despite spending Rs 14.01 lakh and Rs 0.04 lakh respectively. The University replied (August 2007) that due to dearth of non-clinical facilities, there was no response for the advertisement seeking eligible candidates issued in earlier years and fresh advertisements have been issued (June 2007) in the newspapers for filling up the posts.

Even in three of the functioning four departments (Experimental Medicine, Epidemiology and Transfusion Medicine), the University did not allocate funds during 2001-06 for research activities and major research activities/programmes were taken up only with external funds.

Out of 15 research posts (Reader/Professor/Lecturer) created by the University in eight departments, including one department (Siddha) which was

[29] Experimental Medicine, Epidemiology, Immunology and Transfusion Medicine Departments

established through a decision of Governing Council of the University 11 posts[30] were vacant as of March 2007. While the posts were vacant in respect of three departments (biotechnology, hospital administration and siddha) since inception, the other posts were vacant for a long period.

Poor utilisation of grants released for the departments

Out of Rs 25 lakh, sanctioned by State Government in May 2003 for Epidemiology Department to improve the molecular epidemiology facilities, Rs 10 lakh only was released. The University spent just one lakh towards purchase of books to date (March 2007) and deferred the purchase of equipment already identified (Cost: Rs nine lakh) as the posts of laboratory personnel had not been filled. As a result, University could not avail of the remaining amount of Rs 15 lakh out of the sanctioned grant of Rs 25 lakh.

(b) Non-establishment of envisaged departments

Three departments proposed to be established in Tenth five year plan period not established

The University proposed in their Tenth Five Year Plan document to establish four departments viz. (i) department of pharmaceutical science, (ii) department of Siddha, (iii) department of bio medical, and, (iv) department of nursing. Though a proposal involving an investment of Rs 1.31 crore was forwarded to Government under 2002-03 Part II Scheme for the formation of the Department of Pharmaceutical Sciences, the proposal was not considered by Government. Although the University estimated a requirement of Rs one crore each for the establishment of other three departments in the tenth five year plan document, no proposals were prepared and sent to Government in respect of these three departments, despite their importance.

(c) Payment of lower scale of pay to teaching staff

Absence of provision of UGC scale of pay

Representations from Research Professors of the Taramani Institute of Post Graduate Research showed that the absence of provision of UGC scale of pay, which was higher than the scale of pay currently offered by the Medical University, was the main reason for their reluctance in joining the University. The Vice Chancellor of the University had reported to Government, as early as in February 1989 that unless the UGC scale was allowed, eligible and qualified staff could not be attracted and retained in the University. Even though the University was vested with powers to appoint Professors, Readers and Lecturers and fix their emoluments as per Section 14 of the Act, University failed to exercise these powers in the interest of the University and public. Government also failed to advise the University in this important matter so far (May 2007).

(d) Non-utilisation of funds given for a research project

Despite the receipt of Rs.24.38 lakh by the University in 2001-02 from a foreign agency (GLAXO WELCOME, United Kingdom) for monitoring "Death due to HIV related cases in India", the project was not taken up for

[30] Epidemiology: Professor (1), Medical Genetics: professor (1) and lecturer (1), Bio Technology: Professor (1) and Lecturer (1), Transfusion Medicine: Assistant Professor (1), Immunology: Lecturer (1), Hospital Administration: Reader (1), Experimental Medicine: Professor (1) and Siddha: Professor (1) and Lecturer (1)

implementation so far (April 2007) due to constant change of Principal Investigators.

All this clearly shows that the University had not made much head way in research activities, the prime objective of the University, to help the medical and paramedical personnel upgrade their knowledge in the field of medical sciences. The Finance Officer of the University stated (August 2007) that with the limited resources and faculties, research work is undertaken in two departments (Department of Experimental Medicine and Department of Immunology) and action is being taken to do more research work after the transfer of four non-clinical departments of Taramani Institute of Post Graduate Research to the University, which is now under consideration of the Government.

3.2.13 Lack of infrastructure in Medical Colleges

The availability of infrastructure is crucial for imparting quality medical education.

Infrastructure facilities prescribed by MCI lacking in Government medical colleges

The availability/non-availability of infrastructure in various medical institutions in the State had not been compiled by the DME to enable Audit to assess the picture in the State as a whole.

The details of infrastructure prescribed by MCI and lacking in sample units are given below.

- As against the norm of four lecture halls, Government Vellore Medical College and Government Thanjavur Medical College have only two halls each,

- Government Vellore Medical College, Government KAPVMC, Tiruchirappalli and the Government Dental College, Chennai have no staff quarters. The number of staff quarters in the remaining three sample colleges was also grossly inadequate,

- Libraries in the three sample medical colleges viz. GMKMC, Salem, GKAPVMC, Tiruchirappalli and Government Vellore Medical College have only one library staff each against the MCI norms of 12 and fewer books (ranging between 3412 and 6241) against the MCI norm of 7000. Use of library facilities was very limited, and,

- No internet facilities were available in two medical colleges viz. GMKMC, Salem and KAPVMC, Tiruchirappalli. Further enquiry revealed that the MEDLAR system, an internet based network which enabled free access to all kinds of medical literature including the priced ones, established in all medical colleges in 1995 with central

assistance was not functioning in six sample colleges[31] due to non-working of the internet system. While GMKMC, Salem stated that MEDLAR is not functioning due to non-availability of computer operator, the Government Thanjavur Medical College reported that MEDLAR is outdated and hence not utilised.

3.2.14 Inadequate training activities

Poor training activities and non-availing of grants offered by MCI for training.

To update the knowledge of medical/paramedical professions, the department is organising in-service training, continuing medical education programmes (CME), workshops, symposiums etc. Information collected from 28 departments in the five sample colleges revealed the following:

- Against the targetted 280 CME programmes (at the rate of two programmes per department per year) only 37 programmes were conducted during 2002-07 and,
- MCI offered a grant of Rs one lakh for conducting CME programmes utilising the services of NRI faculties and Rs 50,000 with local faculties. However, none of the sample colleges had availed of this grant to conduct these programmes.

3.2.15 Poor patronage of research activities by the Government

Government failed to provide sufficient encouragement to research activities.

One of the main objectives of the department was to pursue and encourage research in the field of medical sciences. None of the sample colleges, though, had undertaken any research project during 2002-07, except student research as a part of the PG and post PG courses. Also no staff in any of the sample colleges had received citations in indexed medical journals. DME attributed the following reasons for non-pursuance of research activities by the doctors of Government medical institutions

- lack of time to spend on research,
- absence of any financial assistance from Government or any financial incentive,
- time consuming procedures in obtaining the permission of State Government for seeking funding from research agencies like Indian Council for Medical Research (ICMR), Council of Scientific and Industrial Research (CSIR), etc.,
- non- consideration of research achievements for promotion to higher posts, despite existence of specific MCI norms in this regard,
- non-availability of facility for availing special casual leave and TA/DA for participation in scientific conferences to present papers, and,
- non provision of sabbatical leave for working with leading institutions in India and abroad in order to gain expertise.

Thus lack of encouragement for taking up research work would lead to continued dependence on imported technologies and non-development of region specific treatment methods for health issues local to the State.

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[31] GMKMC, Salem, GKAPVMC, Tiruchirappalli, Government Medical College, Vellore, Stanley Medical College, Chennai, Thanjavur Medical College and Tamil Nadu Government Dental College and Hospital, Chennai.

3.2.16 The issues relating to teaching hospitals are discussed at length in a separate review on "Functioning of Teaching Hospitals" in this report.

3.2.17 Conclusion

The primary objective of producing sufficient skilled medical and paramedical personnel for providing effective and quality medical care was not achieved to a large extent due to poor planning and an inconsistent policy on the participation of private sector in medical education. This had also led to a wide gap between the existing intake capacity of medical seats and the demand for medical courses. Post graduate medical/dental courses were conducted without getting the required recognition of Medical/Dental Council of India. Lack of teaching staff and infrastructure, utilisation of teaching staff without the requisite PG degree, continued absenteeism of doctors and the absence of legal action against them, and deficiencies in conducting nursing/paramedical courses affected the quality of medical education imparted. Dr MGR Medical University is not conducting inspection of Government medical colleges due to non-payment of inspection/affiliation fees. Continuous provisional affiliation was not given to 27 courses by the University for various periods since 2002-03 due to various deficiencies. Adequate research activities were not conducted by the University due to poor/non-functioning of the departments created for this purpose in the University.

3.2.18 Recommendations

- Efforts should be made for increasing the intake capacity of medical seats in tune with the demand of public for both undergraduate and postgraduate courses. Where the costs are prohibitive, the private sector should be encouraged to play its part.
- It should be ensured that all post graduate courses conducted are recognised by MCI/DCI. Government should take up this issue urgently with Government of India, and follow up regularly with MCI.
- Sufficient teaching faculty with requisite qualification should be sanctioned and adequate infrastructure facilities should be provided to medical colleges/dental college/nursing schools, for enabling them to impart quality medical education and for getting the recognition and affiliation for the courses from the Medical/Dental Council of India.
- The Government must review the service conditions and consider granting UGC scales to attract and retain qualified teaching staff.
- Dr MGR Medical University should give greater thrust to research activities by strengthening the departments established for this purpose by attracting qualified staff.
- The amount relating to the initial deposit obtained from the selected candidates and lying without transfer to the colleges upto the previous year should be transferred to Government Account.

The above points were referred to Government in July 2007; reply had not been received (November 2007).

HEALTH AND FAMILY WELFARE DEPARTMENT

3.3 Functioning of teaching hospitals

Highlights

Teaching hospitals attached to medical colleges are providing tertiary medical care besides giving practical exposure to medical students on various types of medical treatment and use of equipment.

- **Super speciality services like heart surgery, kidney transplants etc., were not continuously provided by medical college hospitals in the State except in Chennai and Madurai.**

(Paragraph 3.3.6.1(c))

- **Absence of important specialities/services like cardiology, diabetology, nephrology, neurology, urology and gastroenterology, want of vital diagnostic facilities and lack of medical and paramedical staff and infrastructure facilities resulted in poor utilisation of two peripheral hospitals and thus the envisaged objective of decongesting teaching hospitals was not achieved.**

(Paragraph 3.3.6.2)

- **Important diagnostic services were not available in 12 teaching hospitals which had a bed strength of more than 500, thereby depriving patients of quality medical care. Absence of specified certification/ accreditation/calibration of instruments/equipment and non-registration of X-ray machines in the sample hospitals, as envisaged, resulted in the hospitals not ensuring quality and accuracy.**

(Paragraph 3.3.6.3)

- **Idle equipment costing Rs 4.51 crore, equipment under disrepair lying unattended, deficient supporting services like ambulance services and steam laundries in the sample hospitals affected the quality of medical care extended apart from affecting medical education.**

(Paragraphs 3.3.6.4, 3.3.7.1 and 3.3.7.2)

- **Details of utilisation of funds released to Tamil Nadu Medical Services Corporation were not obtained and monitored by the Director of Medical Education, resulting in funds of Rs 100.37 crore lying unutilised with Tamil Nadu Medical Services Corporation as of March 2007.**

(Paragraph 3.3.9.2)

3.3.1 Introduction

Teaching hospitals are hospitals attached to medical colleges and providing medical care to the general public. A total of 44 teaching hospitals including four peripheral hospitals with 21,399 beds and 21 nursing schools are attached to the 15 medical /dental colleges functioning in the State. While 15 hospitals are in campus or near the concerned medical colleges, 29 are located away from the colleges. All these hospitals are involved in medical education besides providing tertiary medical care to ailing patients including speciality treatment to patients referred to them by other medical institutions such as Primary Health Centres and Government district/taluk hospitals.

3.3.2 Organisational set up

Secretary to Government of Tamil Nadu, Health and Family Welfare Department is in charge of teaching hospitals at Government level and the Director of Medical Education (DME) at the State level. The Dean of the Medical/Dental College administers the attached teaching hospital. An organisational chart of the system is given in **Appendix 3.13.** Tamil Nadu Medical Services Corporation (TNMSC) purchases and supplies medicines and equipment to these hospitals besides maintaining all medical equipment.

3.3.3 Audit coverage

Performance audit on the functioning of teaching hospitals for the period 2002-2007 was conducted during February 2007 to May 2007. The records of the Health and Family Welfare Department in the Secretariat, Directorate of Medical Education and nine[1] out of 40 teaching hospitals, eight[2] out of 21 nursing schools and two[3] out of four peripheral hospitals, were examined.

3.3.4 Audit objectives

Performance audit was conducted

- to ascertain the availability, adequacy and quality of various services rendered by teaching hospitals, and the adoption of modern techniques in treatment, patient-care and hospital management,

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1 (1) Government Annal Gandhi Memorial (AGM) Hospital, Tiruchirappalli, (2) Government Dental College Hospital, Chennai (3) Government Mohan Kumaramangalam Medical College (GMKMC) Hospital, Salem (4) Government Medical College Hospital, Thanjavur, (5) Tirunelveli Medical College Hospital (6) Government Royapettah Hospital, Chennai (7) Government TB Hospital, Tambaram, (8) Government Stanley Hospital, Chennai and (9) Government Medical College Hospital, Vellore.

2 Nursing schools attached to GMKMC Hospital, Salem, Government Stanley Medical College Hospital, Chennai, Government Medical College Hospital, Thanjavur, Kanniyakumari Medical College Hospital, Nagercoil, Government Hospital, Dindigul, Government Rajaji Hospital, Madurai, Government AGM Hospital, Tiruchirappalli and Government Medical College Hospital, Tirunelveli.

3 Government Peripheral Hospital, Periyar Nagar and Government Peripheral Hospital, Tondiarpet.

- to check the availability and utilisation of created infrastructure, equipment, manpower, etc., in providing medical care,
- to assess efficiency in inventory and asset management in teaching hospitals, and,
- to study the relevance and reliability of internal controls.

3.3.5 Audit criteria and methodology

The following criteria were adopted to assess the performance of teaching hospitals.

- Guidelines issued and goals and targets prescribed by the State Government,
- Codes and manuals of the Department, and,
- norms stipulated for certification/accreditation/calibration of medical equipment/instruments for ensuring quality of services rendered with them.

The performance audit commenced with a pilot study in January 2007 and field units were selected on random sampling basis. The audit objectives and criteria were discussed with the Secretary, Health and Family Welfare Department at an entry conference held in March 2007. Besides test check of connected records in the sample units, information was also obtained from various official sources and written replies from the officers at Government/district/unit level. The important points noticed during the performance review are given in succeeding paragraphs.

3.3.6 Deficiencies in extension of tertiary medical care facilities

3.3.6.1 Non availability of super speciality treatments

(a) The performance of teaching hospitals in terms of some major services rendered by them during 2002-07, for the entire State, as furnished by DME, is given in **Appendix 3.14 A.**

(b) The details of bed strength and average bed occupancy ratio of the 44 teaching hospitals are given in **Appendix 3.14 B.** While no beds are available in seven hospitals, the performance of 14 hospitals[4] which had an average bed

[4] Kilpauk Medical College Hospital, Chennai, Chengalpattu Medical College Hospital, Thanjavur Medical College Hospital, Raja Mirazdar Hospital, Thanjavur, Coimbatore Medical College Hospital, GMKMC Hospital, Salem, AGM Hospital, Tiruchirappalli, Vellore Medical College Hospital, Kanniyakumari Medical College Hospital, Theni Medical College Hospital, IOG Hospital for Women and Children, Chennai, ICH Hospital for Children, Chennai, Government Kasturba Gandhi Hospital for Women, Chennai and Government Hospital for Thoracic Medicine, Tambaram.

occupancy ratio of more than 100 *per cent* during 2002-07, and 17 hospitals[5] which had a bed occupancy ratio between 50 and 100 *per cent* was good. The performance of the remaining six hospitals was poor with their bed occupancy ratio ranging between nine and 49.

Speciality services were not continuously provided in the teaching hospitals except in Chennai and Madurai.

(c) Twenty out of 44 teaching hospitals in the State are large institutions with a bed strength of more than 500. Of these, 12 are medical college hospitals. While four medical college hospitals were in Chennai with bed strength ranging between 515 and 2,700, one was in Madurai (Government Rajaji Hospital) with a bed strength of 2,218. The remaining seven medical college hospitals[6] were outside Chennai with bed strength ranging between 541 and 1,118. Speciality services like open heart surgery and kidney transplantation were continuously provided only in four[7] and three[8] teaching hospitals respectively. Non availability of continuous super speciality services outside Chennai and Madurai is a matter of concern to be addressed. Even in Chennai, patients have to wait for about six to 12 months in getting money from Tamil Nadu State Illness Assistance Fund for the conduct of such surgeries in one sample hospital as discussed in the subsequent paragraph.

(d) The performance of heart surgery cases including open heart surgeries, valve replacement, closed mitral commisuromy and other heart surgery cases declined in Stanley Medical College Hospital, from 277 in 2002-03 to 196 during 2006-07. Out of 63 patients registered for free heart surgery during 23 February 2006 to 30 June 2006, utilising assistance from Tamil Nadu State Illness Assistance Fund (TSIA fund), a fund created by Government for helping the poor public, intimations were sent for 59 patients. Of this, only 11 had undergone the surgeries. The remaining patients did not turn up for surgery as it took six to 12 months for the Dean to fix up the free surgeries. As of 10 August 2007, 144 patients are in the waiting list. Though the hospital had the facility to handle 200 open heart surgeries *per annum*, only an average of 120 surgeries *per annum* were conducted during 2002-07. The Professor and Head of Cardio Thoracic Surgery informed audit that only if uninterrupted supply of consumables was made available under both TSIA fund and General Fund, 200 surgeries *per annum* could be conducted and non-

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5 Stanley Medical College Hospital, Chennai, Government Rajaji Hospital, Madurai, Tirunelveli Medical College Hospital, Thoothukudi Medical College Hospital, Government Royapettah Hospital, Chennai, Government RSRM Hospital, Government Peripheral Hospital, Anna Nagar and Government Cancer Hospital, Karapettai, Government General Hospital, Chennai, Government Opthalmic Hospital, Chennai, Institute of Mental Health, Chennai, Government TB Hospital, Otteri, Government Peripheral Hospital, K.K.Nagar, Government Peripheral Hospital, Periyar Nagar, Government Peripheral Hospital, Tondiarpet, Government Institute of Rehabilitation Medicine, Chennai and TB Hospital, Thoppur, Madurai.

6 Tirunelveli Medical College Hospital: 1,118, Coimbatore Medical College Hospital: 1,045, GMKMC Hospital, Salem: 831, Thanjavur Medical College Hospital: 678, Chengalpattu Medical College Hospital: 630, Thoothukudi Medical College Hospital: 612 and Vellore Medical College Hospital: 541.

7 Government General Hospital, Chennai, Stanley Medical College Hospital, ICH & HC, Chennai, and Government Rajaji Hospital, Madurai.

8 Government General Hospital, Stanley Medical College Hospital and Kilpauk Medical College Hospital all in Chennai.

availability of funds under TSIA funds towards purchase of consumables, valves, etc., was the main reason for the poor performance.

3.3.6.2 Poor functioning of peripheral hospitals

Government established four peripheral hospitals[9] in Chennai city during the 1970s to reduce congestion at the existing teaching hospitals and proposed to develop them gradually into multi-speciality hospitals to cater to the medical needs of the suburban population. Though the population in the suburban areas had increased manifold during the last 30 years, these hospitals failed to fulfill the objective for which they were established, as discussed below:

Non-availability of speciality services and vital diagnostic services, and acute vacancy position of medical and para medical personnel resulted in declining number of out patients in peripheral hospitals.

Against the increase of 7.25 *per cent*[10] in the combined outpatient (OP) cases in respect of the related four teaching hospitals during 2002-2005, the combined OP census of four peripheral hospitals attached to the above teaching hospitals had declined by 33.06 *per cent*[11] during the same period. Similarly, the inpatient (IP) census of the four teaching hospitals increased by 10.03 *per cent*[12] while that of the four peripheral hospitals declined by 36.45 *per cent*[13] during this period.

The factors contributing to the declining trend in two sample peripheral hospitals (Periyar Nagar and Tondiarpet) are listed below:

- Important specialities such as cardiology (except in KK Nagar), diabetology, nephrology, neurology, urology, burns ward, gastroenterology, STD clinic, etc., were not available and vital diagnostic facilities such as CT Scan, EEG, EMG, etc., were lacking, and,
- Chronic vacancy position (February 2007) in the cadre of medical officers (20 *per cent* of the sanctioned posts) and other paramedical and supporting staff (23 *per cent* of the sanctioned posts), affected the performance of these peripheral hospitals.

Some of the infrastructure created in these hospitals, was not being used, as indicated below:

- Both passenger lifts in Periyar Nagar Peripheral Hospital were not functioning since January 2003 and December 2005 respectively due to the absence of an annual maintenance contract since July 2002 and April 2003 respectively. Though the Executive Engineer (Public Works Department) (EE(PWD)) Electrical Division, Chennai was

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9 Anna Nagar (attached to Kilpauk Medical College Hospital), KK Nagar and Periyar Nagar (attached to Madras Medical College Hospital) and Tondiarpet (attached to Stanley Medical College Hospital).

10 16,816 OP cases in 2002 to 18,035 OP cases in 2005 per day in four teaching hospitals.

11 3,944 OP cases in 2002 to 2,640 OP cases in 2005 per day in four peripheral hospitals.

12 3,910 IP cases in 2002 to 4,302 IP cases in 2005 per day in four teaching hospitals.

13 321 IP cases in 2002 to 204 IP cases in 2005 per day in four peripheral hospitals.

addressed as early as in March 2003 for rectifying the defects in the lifts and to take over the maintenance of lifts, as was the practice in Chennai city hospitals, no further action was taken for repairing the lifts and its maintenance.

- Mortuary Block (cost: Rs 5.50 lakh) in Periyar Nagar was not in use since its construction in 1983 owing to cracks noticed in its interior as well as in its exterior, and lack of proper refrigeration. Consequently, the building has not been handed over by the Public Works Department (PWD). A reference made to PWD in January 2003 for its utilisation as record room was still pending.

- The kitchen in the Tondiarpet Peripheral Hospital remained non-functional since April 2002, due to non-availability of rice permit from the Tamil Nadu Civil Supplies Corporation. The civil surgeon of the hospital failed to follow up the matter and obtain the required permit so far. As a result, only unboiled milk and bread was issued to the patients. Also Rs 1.39 lakh incurred in 2005 on laying gas pipeline and construction of new kitchen building also became unfruitful (June 2007).

- A 50 bed ward (cost: Rs 43.78 lakh) constructed and taken over in November 2004 in Government Peripheral Hospital, Tondiarpet remained unutilised since its inauguration in June 2005 due to lack of staff (no sanction), and lack of funds for procurement of surgical equipment, generator, etc.

The bed occupancy rate in Periyar Nagar and Tondiarpet Peripheral Hospitals had declined from 79 *per cent* in 2002 to 36 *per cent* in 2005 and 80 *per cent* in 2002 and 52 *per cent* in 2005 respectively reflecting poor patronage by the public.

3.3.6.3 Lack of main diagnostic services

(a) Diagnostic equipment like X-Ray, USG, CT Scan, MRI Scan etc., have to be provided in all major hospitals, and laboratories have to be established for providing quality medical care to the patients.

A comprehensive picture at the State level on the availability of major diagnostic services in the teaching hospitals, and connected non-functional equipment was not available with the DME. Such details could have helped DME to prepare an action plan for making them functional within a specified period, based on availability of funds.

Main diagnostic facilities not available in several major teaching hospitals having bed strength of more than 500

(b) In 12 teaching hospitals, which had a bed strength of more than 500 each, important diagnostic equipment was not available for diagnosing the ailments of patients, as given below:

- Angiogram and MRI scan were not available in 10 hospitals.[14]
- Doppler was not available in 10 hospitals.[15]
- EEG was not available in eight hospitals.[16]
- Colonoscope was not available in seven hospitals.[17]

The hospitals did not have any system to ask for such equipment, as they are now required to make a proposal for such equipment only under Part II proposals, which are sanctioned by Government purely on the basis of availability of funds.

Sample hospitals had not got accreditation/ certification of clinical laboratories from the agencies concerned to ensure quality of services rendered. No system exists for the periodical calibration of laboratory equipment for ensuring accuracy.

(c) None of the 11 test checked hospitals (nine teaching and two peripheral hospitals) had any accreditation or certification from the National Accreditation Board for Testing and Calibration Laboratories (NABL), a GOI agency, or any other certification agency, to ensure quality of services. Again, these 11 hospitals (except for the bio-chemistry laboratory in GMKMC Hospital, Salem) had no system to calibrate laboratory instruments periodically to ensure accuracy.

(d) Nine sample hospitals could not carry out several diagnostic services for more than a year due to lack of kits and reagents **(Appendix 3.15)** causing hardship to poor patients, who were solely dependent on these hospitals due to the exhorbitant cost prevailing for such services in private hospitals.

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14 Stanley Medical College Hospital, Kilpauk Medical College Hospital, Chengalpattu Medical College Hospital, Thanjavur Medical College Hospital, Coimbatore Medical College Hospital, Tirunelveli Medical College Hospital, GMKMC Hospital, Salem, Thoothukudi Medical College Hospital, Government KAPVMC Hospital, Tiruchirappalli and Vellore Medical College Hospital.

15 Stanley Medical College Hospital, Kilpauk Medical College Hospital, Chengalpattu Medical College Hospital, Government Rajaji Hospital, Madurai, Coimbatore Medical College Hospital, Tirunelveli Medical College Hospital, GMKMC Hospital, Salem, Thoothukudi Medical College Hospital, Government KAPVMC Hospital, Tiruchirappalli and Vellore Medical College Hospital.

16 Kilpauk Medical College Hospital, Chengalpattu Medical College Hospital, Thanjavur Medical College Hospital, Tirunelveli Medical College Hospital, GMKMC Hospital, Salem, Thoothukudi Medical College Hospital, Government KAPVMC Hospital, Tiruchirappalli and Vellore Medical College Hospital.

17 Chengalpattu Medical College Hospital, Thanjavur Medical College Hospital, Coimbatore Medical College Hospital, Tirunelveli Medical College Hospital, GMKMC Hospital, Salem, Government KAPVMC Hospital, Tiruchirappalli and Vellore Medical College Hospital.

X-ray machines in sample hospitals not registered as required; badges for measuring radiation level and protective gear were not provided to the staff operating X-ray machines.

One radiographer had to manage 11 X-ray machines in one hospital.

(e) According to GOI regulations X-ray machines were to be registered with Atomic Energy Regulatory Board (AERB) and should hold valid licence. However, in seven sample hospitals[18] 38 X-ray machines were not registered with AERB. In three sample hospitals[19], the staff operating the X-ray machines were not provided with the mandatory badges to measure the radiation level and in three other sample hospitals[20], the staff were not provided with protective gear. GMKMC Hospital, Salem despite having 11 X-ray machines located in different buildings in the hospital campus had only one radiographer per shift. Since no post of radiographer was sanctioned for seven X-ray machines purchased after 1980, the Head of the Department of Radiology stated (March 2007) that the shortage of radiographer was managed by engaging the security and sanitary staff contracted through private agencies for X-ray duty. This practice would clearly be compromising the quality of diagnostic services. Five posts of radiographer were sanctioned by Government but action is yet to be taken for posting these staff.

(f) The CT Scans and the MRI Scans in all Government Hospitals were owned and operated by Tamil Nadu Medical Services Corporation (TNMSC) and all patients were to pay the prescribed charges. This system was against the policy of Government of providing free medical care to all patients having monthly income less than Rs 1,000.

3.3.6.4 Idle equipment

Medical equipment forms an integral part of diagnostic and treatment procedures. As compiled by Audit, Rs 178.85 crore were spent by DME on the purchase and maintenance of equipment towards teaching hospitals during 2002-07.

Equipment costing Rs 4.51 crore are lying unutilised in sample hospitals.

Test check revealed that 100 items of equipment, (each costing more than Rs 1 lakh) costing Rs 4.51 crore, though functional, remained unutilised in seven test checked hospitals, with the period of non-utilisation ranging between one and four years as detailed in **Appendix 3.16.** The main reasons for the non-utilisation were non-provision of funds to hospitals for maintenance subsequent to the entrustment of annual maintenance contract (AMC) to TNMSC, and lack of coordination between the concerned hospital, TNMSC and the AMC contractors.

From 2003-04 onwards, funds for maintenance of equipment were provided by Government to TNMSC who in turn is arranging the AMC for medical equipment, which were found to be in working condition at the time of joint inspection by the hospital authorities and the AMC agency. The DME paid

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[18] Stanley Hospital, GMKMC Hospital, Salem, Government Vellore Medical College Hospital, Annal Gandhi Memorial Hospital at Tiruchirappalli, Government Peripheral Hospitals at Periyar Nagar and Tondiarpet, Government Dental Hospital, Chennai.

[19] Government Medical College Hospital, Vellore, Government Peripheral Hospital at Tondiarpet and Government Thanjavur Medical College Hospital.

[20] Government Medical College Hospital, Thanjavur, Government Peripheral Hospitals at Periyar Nagar and Tondiarpet.

Rs 15.95 crore to TNMSC for arranging the maintenance of hospital equipment in the teaching hospitals during 2003-07. This work is done through contractors.

It was observed that some of the medical institutions had reported to TNMSC that a few contractors, who were given the AMC were not regular and prompt in carrying out maintenance in time and in certain cases they did not respond when contacted by the hospitals. This was hampering the work of diagnosis. TNMSC had suggested that in such cases the Heads of medical institutions could arrange for an alternative mechanism for the repair themselves, the bills for which would be settled by TNMSC. However, the medical institutions which had equipment under disrepair did not adhere to this suggestion, and such items of equipment are kept without being repaired.

Delays in procuring petty items of spares and consumables led to non-utilisation of 11 items of equipment.

3.3.6.5 Idle buildings

Payment wards lying idle in Government General Hospital

Payment wards in Government General Hospital, Chennai, created at an approximate cost of Rs 11.73 crore were lying idle since July 2005 due to non-finalisation of the proposal by Government.

Government approved (February 2001) the proposal of DME for constructing two tower blocks in Government General Hospital at an estimated cost of Rs 99.60 crore by availing of a term loan from HUDCO and proposed to repay forty *per cent* of the loan using revenue realisable from payment wards proposed to be established in the hospital with 202 beds[21] exclusively for paying patients. Construction was completed at a cost of Rs 93.81 crore and two tower blocks were commissioned in July 2005. DME submitted the final proposal to start the payment wards in the new building in August 2006, after a delay of about 13 months since the construction of the new building. As the proposal was not a comprehensive one and required further details, further clarifications were called for by Government. The matter was still under correspondence with Government even as of April 2007. The notional revenue foregone is approximately Rs 19.50 crore. This led to idling of Rs 11.73 crore[22] spent in the creation of these wards. Though Government issued (May 2007) orders for the employment of staff duly specifying rates for various surgical and diagnostic procedures, further action in utilising wards is yet to be taken (July 2007).

3.3.7 Deficiencies in supporting services for providing medical care

3.3.7.1 Deficient Ambulance services

Ambulance services should be available round the clock every day for patients during emergencies. Certain deficiencies in such services noticed by Audit in sample districts are given below:

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21 Tower block I: 58 beds each in fifth and sixth floors and Tower block II: 86.

22 Rs 11.48 crore being the approximate cost of construction and Rs 0.25 crore being the cost of furnishings etc.

Ambulance service was deficient in sample hospitals because of utilisation of ambulances for other unintended purposes, non availability of drivers, etc.

(a) In GMKMC Hospital, Salem, during 2002-07, the two ambulances attached to the hospital were utilised for VIP visits and for purposes like transport of cash to and fro from bank, lifting medicines from TNMSC warehouses, etc.

(b) In Thanjavur Government Medical College Hospital, there were 11 ambulances with only four drivers, thus making it difficult to utilise all the 11 ambulances to the optimum level. Similarly in three other sample hospitals,[23] the number of ambulance drivers was less than the number of ambulances available. Inadequate provision of drivers affected the ambulance services badly leading to under-utilisation of the ambulances, depriving patients of ambulance services.

Ambulances in sample hospitals not fitted with emergency kits, oxygen cylinders, etc.

(c) Out of the nine sample hospitals which furnished the details, in five hospitals, the ambulances were not fitted with emergency kits and in six hospitals they were not fitted with oxygen cylinders for giving urgent treatment to the emergency patients, while transporting them to and from the hospital.

3.3.7.2 Poor functioning of steam laundries

Steam laundries were established in hospitals to wash the clothes of patients by applying steam at high pressure to disinfect the clothes to prevent infections.

Non-functioning of steam laundries in sample hospitals.

In five sample hospitals, the steam laundries did not work for various reasons mentioned below:

Name of hospital	Period from which not functioning	Cost of establishment (Rs in lakh)	Reasons for non utilisation
Government Peripheral Hospital, Periyar Nagar	1989 (from the year of installation)	12.00	For want of pollution control clearance and non-availability of furnace oil.
Government Hospital for Thoracic Medicine, Chennai	July 2005	(NA)	Non-functional machinery.
AGMGH, Tiruchirappalli	February 1994	(NA)	Solar plant attached to the laundry not functioning.
Government Medical College, Vellore	August 2006	42.05	Non-sanction of technical staff.
GMKMC Hospital, Salem	July 2006	(NA)	Non-procurement of furnace oil.

(NA: Details not made available)

[23] Peripheral Hospital, Tondiarpet, Stanley Hospital, Chennai and Government Medical College Hospital, Vellore.

In the absence of working steam laundries, the clothes of patients were manually washed by dhobis, resulting in clothes not being disinfected fully to prevent infections.

Further, test check of linen supplied to 24 wards in four[24] of the sample hospitals during 2006-07 disclosed that washed linen was not supplied to in-patients. As against 28,468 inpatients admitted in the test checked wards during 2006-07, only 8,854 were supplied with washed bed linen, revealing the continued utilisation of soiled bed linen by the patients. This can lead to infections.

3.3.7.3 Improper disposal of bio-medical wastes

Provisions for disposal of bio-medical wastes in sample hospitals not followed.

GOI notified (July 1998) the Bio-medical Waste (Management and Handling) Rules 1998 (Rules) under the provisions of Environment (Protection) Act 1986. This was to ensure that each hospital adhered to the procedure stipulated in Schedules I to VI of the Rules regarding segregation, package, storage, treatment, transport and disposal of various kinds of bio-medical wastes. However, even as of March 2007, none of the 11 sample hospitals had a full fledged system to dispose of bio-medical wastes by following the above procedures. The bio-medical wastes were disposed of either through the solid waste management wing of the local body concerned or buried within the hospital premises spoiling the soil as well as ground water. One teaching hospital and two peripheral hospitals[25] did not also have any proper facilities for treatment of the wastes, as they did not have the required equipment like shredder, microwave, autoclave, incinerators etc.

3.3.7.4 Deficiencies in power and water supply arrangements

(i) Uninterrupted power supply is essential for proper functioning of operation theatres, blood banks, intensive care units, post operative wards, etc., in hospitals. Though all the sample hospitals were provided with generators, automatic function (AMF) panel to enable instant starting up of generators was not available in 6[26] out of 10 sample hospitals. Further two[27] hospitals did not have any staff to operate the generators when power went off.

(ii) None of the sample hospitals were equipped with centralised water purification plants to supply pure water to the patients. Though four sample hospitals had portable purifiers, the number of purifiers available was too low to cater to the needs of the patients. Further, four sample hospitals[28] had no facility to supply hot water in the wards and two other hospitals had hot water facility in just two to three wards only.

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[24] Annal Gandhi Memorial Hospital, Tiruchirappalli, GMKMC Hospital, Salem, Government Stanley Medical College Hospital, Chennai and Government Medical College Hospital, Vellore.

[25] Government Dental College Hospital, Chennai, Government Peripheral Hospitals at Periyar Nagar and Tondiarpet.

[26] Tirunelveli MCH, GMKMC Hospital, Salem, Annal Gandhi MCH, Tiruchirappalli, Government Royapettah Hospital, GPH, Periyar Nagar and GPH, Tondiarpet.

[27] Government Stanley Hospital and Tirunelveli MCH.

[28] TMC Hospital, Thanjavur, Vellore MCH, Government Royapettah Hospital and GPH, Tondiarpet.

3.3.7.5 Shortage of sanitary workers

Government fixed (May 2003) a norm of one worker for sanitation purposes for every 12 beds in teaching hospitals. The shortage of sanitary workers in the sample hospitals was 22 *per cent* as of July 2007. Though Government had permitted engagement of such workers by outsourcing, five sample hospitals[29] had not outsourced sufficient number of workers. As a result, the number of workers available in these five sample hospitals fell short by two to 44 *per cent* of the requirement. Audit also noticed that the outsourced workers were engaged on various activities other than sanitary works.

3.3.8 Vacancy in overall staff position under DME

Details furnished (June 2007) by DME, on the overall vacancy position for 2007 of various categories of staff under the control of the Directorate of Medical Education revealed that 567 posts of Medical Officers out of 4,494 sanctioned and 8,503 posts of other medical/para medical supporting staff out of 24,906 sanctioned were vacant.

The vacancy position in respect of some of the important medical/para medical/supporting staff is listed in **Appendix 3.17.**

3.3.9 Financial performance

3.3.9.1 Receipts of teaching hospitals

The main source of receipts for teaching hospitals are from hospital stoppages collected from paying inpatients. The revenue realised by the Directorate of Medical Education during 2002-07 is given below:

(Rupees in lakh)

Year	Hospital stoppages	Miscellaneous receipts	Other receipts	Total receipts	Total revenue expenditure
2002-03	179.09	58.12	21.42	258.63	287.08
2003-04	174.65	49.36	32.10	256.11	310.38
2004-05	167.75	233.47*	8197.69**	8598.91	321.13
2005-06	177.39	916.87*	71.01	1165.27	433.55
2006-07	157.26	384.76	-	542.02	413.55

* funds received from Government of India for central plan schemes incorrectly credited as miscellaneous receipts during 2004-06.

** includes pending loan amount (Rs 81.39 crore) out of the off-budget loan obtained by TNMSC from HUDCO, since brought to Government account during 2004-05.

The increase under miscellaneous receipts during 2005-06 was mainly due to income from endowments.

State level figures towards the hospital stoppages due at periodical intervals were neither compiled by the DME nor directed by Government to be compiled to assess the exact quantum of amount due to be received in this regard. Though test check of records in sample hospitals revealed that the hospital stoppages due to be collected from ESI patients were relatively more,

[29] TMC Hospital, Thanjavur, Tirunelveli MCH, Vellore MCH, GPH, Periyar Nagar and GPH, Tondiarpet.

details of such dues were not compiled by DME for taking necessary action in causing their recovery at higher levels.

Rate of hospital stoppages not revised since 1995.

Perusal of records in the sample hospitals also revealed that no system exists in the hospitals to watch the settlement of claims towards hospital stoppages, particularly from ESI patients. The rate fixed for hospital stoppages were not revised since 1995 and specific reasons for non-revision were not furnished by DME. The Eleventh and Twelfth Finance Commissions recommended the rate of recovery of the cost of public services to be enhanced substantially atleast to meet partially the expenditure incurred on such services. Due to non-revision, the revenue realised did not keep pace with the expenditure incurred.

3.3.9.2 Funds lying with Tamil Nadu Medical Services Corporation

Tamil Nadu Medical Services Corporation (TNMSC) supplies medicines and equipment to the teaching hospitals and also arranges for the maintenance of equipment. Funds provided in the budget towards medicines and surgical equipment are transferred to the Deposit Account of TNMSC in quarterly instalments. Besides, funds are also provided for procurement of major items of equipment and released to TNMSC. The DME does not keep track of funds released and utilised. TNMSC also does not furnish utilisation certificates for the funds utilised for purchase of equipment. DME released large sums ranging between Rs 1.20 crore and Rs 13.85 crore in the month of March during 2002-07 to avoid lapse of budget provision.

Huge funds lying unutilised with the TNMSC.

TNMSC had Rs 270.57 crore lying unutilised as of March 2007, being the funds released for the purchase of medicines and equipment by all Heads of Department[30]. Of this, Rs 100.37 crore were the funds released for the purchase of equipment by DME. A few instances of funds given by DME and blocked up with TNMSC are detailed below.

- Out of Rs 1.50 crore being GOI funds given (February 2003) for strengthening diagnostic services in GMKMC Hospital, Salem and placed with TNMSC, equipment for Rs 0.85 crore were supplied (January 2004) and the remaining amount of Rs 0.65 crore was retained by TNMSC. Though the hospital submitted (April 2006) a proposal to utilise this amount, no further action was taken (March 2007).
- Similarly, in Tirunelveli Medical College Hospital, a sum of Rs 4.48 crore was released to TNMSC during November 2004 towards purchase of equipment. However, equipment worth Rs 3.82 crore had not been supplied (June 2007) and
- Rs 11.88 crore[31] placed with TNMSC during 2004-06 for procuring equipment under cancer control programme in three colleges, is still lying idle. While the delay in supply of equipment in the colleges at

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30 Director of Medical Education, Director of Medical and Rural Health Services, Director of Public Health and Preventive Medicine and Director of Employees State Insurance Corporation.

31 GMKMC Hospital Salem: Rs 2 crore (2002-03), Stanley Medical College, Chennai: Rs 2 crore (2003-04) and Government Arignar Anna Memorial Cancer Hospital, Kancheepuram: Rs 7.88 crore (2004-05 and 2005-06).

Salem and Chennai was due to change in the type of equipment originally proposed, the delay in Government Arignar Anna Memorial Cancer Hospital, Kancheepuram was due to the delay in construction of the building to house the equipment.

3.3.9.3 Non-reconciliation of departmental figures

Non-reconciliation of departmental expenditure in three sample hospitals.

While the GMKMC Hospital, Salem adopted the treasury figures, without reconciling the departmental figures booked, the departmental figures of the two sample peripheral hospitals viz., Periyar Nagar and Tondiarpet were not reconciled by the hospitals to which they were attached viz., Madras Medical College Hospital, Chennai and Government Stanley Medical College Hospital, Chennai. As such, the reconciliation reported to have been conducted for the State as a whole, was incorrect.

3.3.9.4 Delayed remittance of receipts

Belated remittance of receipts in one sample hospital viz., Government Royapettah Hospital, Chennai.

In violation of Rule 7 of Tamil Nadu Treasury Rules, which requires that all receipts are to be credited into Government account as and when received, the Medical Superintendent, Government Royapettah Hospital, Chennai remitted receipts towards hospital stoppages and X-ray charges during April 2005-June 2006, after retaining them for periods ranging between 14 and 105 days, with the amounts so retained ranging between Rs 1.76 lakh and Rs 2.37 lakh.

3.3.10 Administrative structure and policies

A study of the administrative structure and policies of the Medical Education Department relating to the teaching hospitals revealed the following:

3.3.10.1 Hospital Advisory Committees

The Government formed (December 2001) Hospital Advisory Committees (HAC) in each hospital to review the performance of the hospital continuously and for the development of hospitals. The members are selected from departmental officials, elected representatives, viz., MPs, MLAs and Local Body members and Non-Government Organisations. Government also directed that each HAC has to meet once in a month to discuss the performance of the hospital.

Hospital Advisory Committees either did not meet or conducted far fewer meetings than what was prescribed in sample hospitals.

Scrutiny of records in the test-checked hospitals showed that none of the HACs had met once in a month as required. In three hospitals,[32] the Committee had not been established till March 2007. In two hospitals,[33] no meetings had been held during the period under audit. In the remaining hospitals[34] against 60 meetings required for each hospital, only one to 13 meetings were held.

The system therefore needs a review to make it effective.

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[32] Government Vellore Medical College Hospital, Government Hospital for Thoracic Medicine, Tambaram and Government Peripheral Hospital, Periyar Nagar.

[33] Government Thanjavur Medical College Hospital and Government Royapettah Hospital.

[34] GMKMC Hospital, Salem, Stanley Medical College Hospital, Chennai, Government Peripheral Hospital, Tondiarpet, Tirunelveli Medical College Hospital and Government KAPVMC Hospital, Tiruchirappalli.

3.3.11 Conclusion

Super speciality treatments like heart surgery and kidney transplant were not continuously provided in the teaching hospitals except in Chennai and Madurai. Peripheral hospitals, established for decongesting the nearby teaching hospitals, failed to fulfil this objective due to lack of important speciality services and vital diagnostic facilities besides inadequate medical and paramedical/supporting staff and poor utilisation of infrastructural facility created. Important diagnostic facilities were not available in 12 major teaching hospitals having a bed strength of more than 500. Items of equipment costing Rs 4.51 crore were lying idle in sample hospitals. Non-functioning equipment was not considered for annual maintenance contract under the new system for maintenance since 2003 and continued to lie unrepaired in sample hospitals for want of funds. Supporting services like ambulance services and steam laundry services were largely ineffective affecting the provision of health care. Provisions of Environmental Acts and Rules were not followed by sample hospitals in the disposal of bio-medical wastes. Failure to have details of funds released to TNMSC and utilised by it by DME and continued release of funds even at the end of the year, resulted in Rs 100.37 crore lying unutilised with TNMSC as of March 2007. Non-reconciliation of departmental figures in three sample hospitals and belated remittance of huge amount of receipts by one sample hospital indicated poor financial management in some areas.

3.3.12 Recommendations

- Availability of super speciality treatments should be ensured in all major teaching hospitals to enable poor people to get such services at affordable cost.
- All teaching and peripheral hospitals should be strengthened with the provision of sufficient man power, equipment and infrastructural facilities.
- Vital diagnostic facilities should be made available in all teaching hospitals by providing all the required diagnostic equipment.
- All the non-functioning medical equipment should be immediately got repaired and brought under annual maintenance contract for their undisrupted functioning.
- System of provision of funds to TNMSC and its utilisation should be streamlined, and DME and Deans should monitor the purchase and repair of equipment, purchase of medicine and also construction of hospital buildings.

The above points were referred to Government in July 2007; reply had not been received (November 2007).

ADI DRAVIDAR AND TRIBAL WELFARE DEPARTMENT

3.4 Educational development of Scheduled Castes and Scheduled Tribes

Highlights

Government focuses on the educational development of Scheduled Castes and Scheduled Tribes by earmarking major portion of the funds allocable for their upliftment towards education. Despite this, the literacy rate of SCs and STs was below the overall literacy rate as per 2001 census. Due to non-availability of data on number of persons eligible, funds for various schemes for the educational development of SC/ST children were provided on an adhoc basis in the budget estimates, leading to non-payment of scholarships to these children within the year due to lack of funds, causing hardship to them. Non-commencement/delayed construction of various infrastructural facilities like school buildings, hostels and non-availability of basic facilities like water, electricity and toilet in schools/hostels further aggravated the promotion of learning amongst SC/ST children. Pass percentage of SC/STs in Tenth and Twelfth standard examinations was much lower as compared to the overall pass percentage in these examinations.

- **No data was compiled regarding the number of eligible beneficiaries among SC/ST students to assess the actual requirement of funds for the educational development of SC/ST. Budget estimates were prepared every year based on the expenditure of the previous year with some ad-hoc increase.**

(Paragraph 3.4.7.1)

- **Inadequate release of funds initially to the district officers for the disbursement of scholarships resulted in belated disbursement of scholarships to students and in pending scholarship claims.**

(Paragraph 3.4.7.2)

- **Maintenance charges were paid in excess to the tune of Rs 35.95 lakh to students staying in Government hostels due to non-recovery of food charges.**

(Paragraph 3.4.7.3)

- **The impact of the cash incentive scheme to girl students has not been analysed because the required feedback was not collected from the implementing district officers, despite an annual expenditure of Rs six crore since 1995-96.**

(Paragraph 3.4.8.1)

- **Though Government of India directed in June 2003 that a census be conducted to enumerate the school going children of persons engaged in unclean occupations before March 2004, for assessing the exact requirement of Pre-matric scholarships to them, no such census was conducted even as of May 2007.**

(Paragraph 3.4.9.1 (a))

- **Construction of five ashram schools is yet to start despite sanction of Rs 1.06 crore in October 2005 including central assistance of Rs 53.75 lakh received in October 1999.**

(Paragraph 3.4.10.1)

- **Delay in the construction of hostel buildings from 2001 onwards led to badly overcrowded hostels many of which were functioning in old, dilapidated buildings with few basic amenities.**

(Paragraph 3.4.12)

- **Despite implementation of post-matric scholarship scheme, the pass percentage of SC/ST in Twelfth standard examinations declined during 2002-06.**

(Paragraph 3.4.13.1)

- **The administrative structure of the department at the district level was not conducive to the effective functioning of the department, as the staff working there were from another department.**

(Paragraph 3.4.14)

3.4.1 Introduction

Government of Tamil Nadu implements several educational development programmes for the benefit of Scheduled Castes (SCs) and Scheduled Tribes (STs) to upgrade their educational levels and skills. The objective of these schemes is to increase enrolment and retention of SCs/STs in educational institutions, reduce the drop-out rate and improve their skills. In addition to State schemes, various Centrally Sponsored Schemes are also implemented for the welfare of SCs and STs. According to 2001 census, the literacy rate of SCs and STs was 63.19 *per cent* and 41.53 *per cent* respectively as against the overall State literacy rate of 73.47 *per cent*.

The State Government is running 1,053 residential schools for SC students and 286 residential schools for ST students, covering 2.44 lakh students in the state. 1,178 hostels (30 districts) with a strength of 81,336 students and 37 hostels (15 districts) with a strength of 1,982 students are functioning in the state for the benefit of SC and ST students respectively. The boarders of the hostels are provided with boarding and lodging free of cost. In addition, text books, guides, uniforms and special guides are also supplied to SC/ST students studying in standards I to X, except for Government of India (GOI) scholarship holders.

During 2002-03 to 2006-07 the expenditure incurred towards educational development of SC and ST children under Central Plan/Sponsored Schemes and State Plan/non-plan schemes is given below.

(Rupees in crore)

Category	Central Plan/Centrally sponsored schemes	State Plan/non-plan schemes	Total
SC Children	339.28	1205.11	1544.39
ST Children	8.08	121.31	129.39
Total	**347.36**	**1326.42**	**1673.78**

3.4.2 Organisational set up

The Secretary to Government, Adi Dravidar and Tribal Welfare Department is in charge of implementing these welfare schemes at the Government level and the Director of Adi Dravidar Welfare (DADW) and the Commissioner of Tribal Welfare (CTW) are looking after the schemes implemented for the benefit of SCs and STs respectively. At the district level, District Adi Dravidar and Tribal Welfare Officer (DADTWO) is responsible for the effective functioning of the schemes for both SCs and STs. The technical wing of Tamil Nadu Adi-Dravidar Housing Development Corporation (TAHDCO), Chennai, constructs hostels, schools buildings, teachers' quarters and class rooms, assisted by their district offices.

3.4.3 Audit coverage

Records relating to the implementation of various educational development programmes for SCs and STs for the period 2002-07 were reviewed during June to August 2006 and the details were updated during March and April 2007 in Adi Dravidar and Tribal Welfare Department in the Secretariat, Directorate of Adi-Dravidar Welfare, Directorate of Tribal Welfare, District Adi Dravidar and Tribal Welfare offices in eight[1] selected districts in addition to the headquarters office of TAHDCO, at Chennai and its branch offices in the selected districts. Select universities[2], colleges and schools were also covered in the sample districts. The audit objectives and criteria were discussed with the Secretary, Adi Dravidar and Tribal Welfare Department during the entry conference held in June 2006. The findings of the review were also discussed with him in November 2006.

3.4.4 Audit objectives

The audit objectives are

- to verify whether the implementation of various schemes launched for the development of SCs/STs was effective and based on reliable and acceptable data,

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1 Chennai, Erode, Kancheepuram, Karur, Namakkal, Nagapattinam, Thoothukudi and Tiruchirapalli.

2 University of Madras, Chennai, Anna University, Chennai, Agricultural University, Coimbatore, Bharathidasan University, Tiruchirapalli.

- to verify whether the allocation, release and utilisation of funds earmarked for various schemes were judicious, adequate and effective,
- to verify whether the efforts of both the Union Government and State Government resulted in improving the educational indicators, and,
- to verify whether the monitoring system at various levels was functioning effectively.

3.4.5 Audit criteria

The main audit criteria applied were indicators like literacy rate, drop out rate, enrolment ratio and pass percentage relating to SC/ST students and GOI and the State Government guidelines.

The important points noticed during the audit are discussed in the succeeding paragraphs.

3.4.6 Educational indicators

Key indicators like literacy rate, enrolment ratio and drop-out rate (2002-07) at both primary and upper primary level are given in **Appendix 3.18**.

3.4.6.1 Literacy rate

Poor ST literacy rate.

The difference between the overall literacy rate and ST Literacy rate for both male and female was more pronounced at 32.18 and 31.77 *per cent*, indicating the need for immediate attention in the educational development of STs.

3.4.6.2 Enrolment ratio

Gap between the NER of all boys and girls and that of SC and ST boys and girls.

Education Department had calculated the gross enrolment ratio while implementing Sarva Shiksha Abhiyan upto 2002-03 and after 2002-03, the department worked out the Net Enrolment Ratio (NER)[3] for various purposes like assessing impact, monitoring etc. Sizeable increase in NER was noticed at both primary and upper primary level in respect of SC and ST categories. However the gap of 2.65 and 3.59 *per cent* respectively between the NER of all boys and girls and that of ST boys and girls at upper primary level during 2006-07 indicated that further improvement is needed in the education of ST students.

3.4.6.3 Drop-out rate

The DR of ST children at primary and upper primary level were 3.50 and 5.03.

As against the overall drop-out rate (DR) of 1.91and 4.08 *per cent* during 2006-07 at primary and upper primary level, the DR of SC children was 1.96 *per cent* and 4.78 *per cent* and that of ST children was 3.50 *per cent* and 5.03 *per cent*. The improvement in DR at both primary and upper primary level in respect of SCs/STs was appreciable during 2002-2007. The DR of

[3] Net Enrolment Ratio is the ratio of children in the age group 6-14 years attending school to their total population in the State.

SCs/STs at High/Higher Secondary schools was not available as it was not compiled on community basis.

3.4.7 Planning

3.4.7.1 Non-collection of data on eligible SC/ST beneficiaries

Absence of classwise data on SC/ST beneficiaries eligible for various scholarships.

Due to insufficient staff in Directorates as well as in district offices, no data was collected and maintained by the Department of Adi Dravidar Welfare or the Education department regarding the number of eligible beneficiaries among SC/ST students studying in various standards in schools and course-wise students studying in colleges. As a result, the requirement of funds for various scholarships and incentive schemes in each year could not be assessed correctly. The budget estimates are made every year based on the expenditure of the previous year by giving some ad-hoc increase.

Actual expenditure was substantially higher than the budget provision made under scholarship programmes during 2003-07 (except for GOI Pre Matric scholarship in 2003-04 and 2006-07 and for State Post Matric scholarship in 2006-07), to SCs as indicated below:

(Rupees in lakh)

Scholarship schemes	Year	Budget Estimate.	Actual Expenditure	Variations (Per centage)
GOI Post Matric Scholarship	2003-04	3242.44	5932.91	83
	2004-05	4200.00	7172.04	71
	2005-06	5831.95	9598.97	65
	2006-07	9740.95	11461.43	18
G.O.I Pre Matric Scholarship	2003-04	374.56	347.84	-7
	2004-05	424.56	672.47	58
	2005-06	300.59	402.35	34
	2006-07	300.59	277.13	-8
State Post Matric Scholarship	2003-04	160.08	453.00	183
	2004-05	288.51	380.15	32
	2005-06	300.00	390.98	30
	2006-07	400.00	387.60	-3
State Higher Educational Special Scholarship	2003-04	475.00	619.02	30
	2004-05	430.00	776.56	81
	2005-06	449.20	917.11	104
	2006-07	775.00	1005.34	30

The DADTWOs were required to send actual demand of the scholarship and other incentives/awards to the DADW. As reports were not received from them, financial/physical targets were fixed in 2005-06 based on the previous years' figures and departmental officers did not see if all the eligible SC/ST children in their area were covered under various schemes implemented under the educational sector.

3.4.7.2 Delay in disbursement of scholarships

Funds were released to districts by the DADW each year to the extent of 60 *per cent* of allotment and district authorities were authorised to draw and

keep the amount in their Personal Deposit (PD) account and release the funds to the educational institutions for payment of scholarship.

Delayed release of funds for disbursement of scholarships.

The PD accounts were opened only in July/August each year and funds were released to the institutions as ad-hoc advance for payment of scholarship to SC/ST students. The balance 40 *per cent* grants were released in January/February at the time of sanction of Revised Estimate and in March at the time of reappropriation of funds. The late release of funds during March led to delay in release of scholarship to the students in the subsequent year defeating the purpose of award of scholarships.

According to the annual action plan prepared by Government, all renewal scholarships were to be paid before August and fresh scholarships before October of each academic year. Scrutiny of records in the sample districts revealed that this was not followed scrupulously as mentioned below:

(a) Scholarship applications of the Institute of Distance Education, University of Madras, claiming Rs 81.76 lakh (2011 students) for 2003-05 were belatedly received by DADWO, Chennai in December 2005 and January 2006 and were paid only in December 2006 and February 2007 respectively for want of sufficient funds in the budget.

Belated receipt of scholarship claims in Chennai.

(b) Against applications for 2004-05 scholarships received for Rs 85.26 lakh from University of Madras, funds were released partially to the University in 2004-05 (Rs 25.40 lakh) and in 2005-06 (Rs 59.86 lakh). The Assistant Registrar of the University stated (October 2006) that Rs 77.12 lakh had been disbursed to students and Rs 8.14 lakh would be disbursed on receipt of claims. The DADTWO, Chennai reported to Audit that the claims were received belatedly from the institutions each year and the clubbing of claims by them for more than one year, led to this delay.

The DADW replied (January 2007) that due to non-provision of enough funds in the budget estimate and non-sanction of separate staff to look after the scholarship work in the Districts, the DADTWOs were unable to assess the actual demand initially so as to send full proposals to Government to get the required funds in the Budget Estimate itself. Thus non-release of required funds to the institutions by the department, delay on the part of the colleges/institutions in submission of claims and disbursement certificates resulted in delayed disbursement of scholarship to the students.

3.4.7.3 Overpayment of maintenance charges to the students staying in Government hostels

In violation of GOI guidelines, maintenance charges were paid in full to students staying in Government hostels, without recovery towards the food charges

According to guidelines of GOI on Post Matric Scholarship scheme, scholars entitled to free board and/or lodging were to be paid maintenance charges at 1/3rd of hosteller's rate. From the scholarship holders staying in hostels, food charges were recoverable at the rate of 2/3rd of maintenance charges, as they receive free food and lodging in the department run hostels. Such recoveries towards food charges were not made from the scholarship amounts by many colleges/institutions, as the students did not disclose the information and the college authorities, too, did not get the data from the hostels/district officers. The overpayment is a recurring feature and could have been avoided had the district officers taken steps to send the list of hostellers each year to the respective colleges and instruct the colleges to deduct the charges promptly.

Test check in sample districts revealed that Rs 35.95 lakh were paid in excess towards maintenance charges due to non-recovery of food charges during 2002-06 in five districts[4] from the boarders of college hostels/ITI hostels. The total overpayment in the State as a whole could not be calculated by Audit as information for all the districts was not available. The DADW replied (January 2007) that necessary instructions would be given to all DADTWOs to recover 2/3rd scholarship amount as required in GOI guidelines from the coming year and necessary verification of hostel records would be done before sanction of scholarship.

3.4.7.4 Collection of fees for application/registration from SC/ST students despite exemption

Fees collected from SC/ST students despite exemption.

State Government issued orders (September 1998) exempting the SC/ST students from paying application fees/registration fees while applying for joining degree and other courses in the recognised colleges/institutions. However, the institutions/colleges, in general, were not aware of the orders and collected fees for application/ registration. In Chennai district, out of 108 institutions/colleges, only 13 institutions extended this benefit to SC/ST students and send claims for reimbursement to the District Officers. In Anna University, Chennai, applications for all UG and PG Degree courses were issued to SC/ST students at a concessional rate without giving full exemption. In Nagappattinam District, the students were not allowed the benefit of exemption and were made to remit the fees and other charges and only after receipt of scholarship these were reimbursed to the students. The Assistant Registrar, (UGC Special Cell SC/ST) of the University of Madras stated that a proposal for giving the above exemption to Post Graduate students of SC/ST category is under consideration with the authorities of the University. Though the concessions extended to SC/ST students were communicated to all officers concerned and were indicated in the Citizens Charter of the Adi Dravidar and Tribal Welfare Department every year, the instructions were not followed by the institutions.

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[4] Chennai, Kancheepuram, Namakkal, Erode and Tiruchirappalli.

GOI also requested (May 2002) the State Government to issue instructions to all the recognised educational institutions in the State not to collect such exempted fees including special fees etc. at the time of admission from the eligible SC/ST students. The DADW replied (January 2007) that the educational institutions were instructed not to collect special fees and all compulsory fees and the same was to be reimbursed to the institutions by the DADTWO concerned and also added that the exemption of Special fees/ examination fees to SC/ST students is under consideration of the Government.

3.4.8 Deficiencies in the implementation of State Schemes

3.4.8.1 Deficiencies under the scheme of Cash incentive to Girls

Cash Incentive scheme to girls studying classes III to VI to reduce dropouts.

Government implemented a scheme of payment of cash incentives[5] to SC/ST girls studying in standards III to VI in a phased manner from the academic year 1995-96 to encourage them to continue their studies and to minimise drop outs. Government also limited the total number of beneficiaries to 90,000 per year covering 60,000 students in standards III to V and 30,000 in standard VI.

Deficiencies noticed when the scheme was implemented through TAHDCO, were already included in paragraph 3.6 of the Report of Comptroller and Auditor General of India for the year ended 31 March 2000 (Civil), Government of Tamil Nadu.

Perusal of connected records relating to the period 2002-06, when the scheme was implemented by the DADTWOs, revealed the following:

Implementation of cash incentive scheme in the State was only partial.

- Since the scheme is being implemented only in 14 out of 30 districts in the State covering 0.90 lakh out of 5.18 lakh SC/ST girl students studying in Classes III to VI in the State, the envisaged intention of encouraging the enrolment of SC/ST girl students and reducing drop outs could only be achieved partially, and,

Absence of feedback from the implementing districts resulted in non-analysis of the impact of the scheme.

- Even from the implementing districts, no feedback was prescribed or received by the DADW and no analysis was made on the impact of provision of cash incentive in reducing the dropout rate among the school going girls. Despite the DADW communicating (August 2005) a method of working out the drop out rate[6], no reports were forwarded by the District authorities, as seen from the sample districts. Thus the efficacy of the scheme was not assessed to date, despite the annual expenditure of Rs six crore since 1995-96. An immediate appraisal is recommended for the programme.

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[5] Rs 500 per annum to the girls studying in classes III to V and Rs 1000 per annum for girls studying in class VI in 14 educationally backward districts for SCs and in all districts except Chennai for STs.

[6] $\frac{\text{(Total number of girls in the age group of 6 to 14) – (number of girls in the age group 6 to 14 studying school)}}{\text{Total number of girls in the age group of 6 to 14}}$

3.4.8.2 Supply of free bicycles

Girls studying in standard XI and XII and belonging to SC/ST and Scheduled Caste convert to Christianity (SCC) were supplied with free bicycles from 2001-02 to help them in commuting to schools. The above scheme was extended to boys from 2005-06. 4,32,001 cycles were supplied at a cost of Rs 79.43 crore[7] during 2002-07 to as many students.

Blocking of GOI assistance due to incorrect estimation by State Government along with other points relating to this scheme were already included in paragraph 4.3.2 in the Report of the Comptroller and Auditor General of India for the year ended 31 March 2004 (Civil), Government of Tamil Nadu.

Handicapped children not covered under free bicycles scheme till March 2007.

(a) No separate allocation was made in the budget for coverage of handicapped students under the above scheme. The Department stated that proposals have been sent to Government in November 2005 for purchase and supply of tricycles to 56 handicapped students studying in XI and XII standards with an outlay of Rs.1.45 lakh and orders of Government are awaited (May 2007).

Distribution of cycles to students of residential school in violation of guidelines.

(b) Government specifically stated (July 2001) in their guidelines that students studying in residential schools and schools where the hostel and school were in the same campus, were not eligible for the supply of bicycles. However, in Tiruchirapalli District, 123 cycles[8] costing Rs.2.12 lakh have been distributed to students of Government Tribal Residential School, Top Sengattupatti. As the bicycles were intended for students to commute between school and residence, supply of bicycles to students residing within the school was irregular.

3.4.8.3 Higher Education Special Scholarship (HESS)

The State Government ordered (January 2003) the conversion of erstwhile loan scholarship scheme for higher education to a grant/grant cum loan scheme from 2002-03 for the benefit of SC/ST/SCC students residing in institutional hostels and whose parental income does not exceed Rs.50,000 per annum. During 2002-07, Rs 42.24 crore was given as HESS to 61,093 students.

According to GOI guidelines (April 2003), a student in receipt of any other scholarship is not entitled to receive post matric scholarship from the Union Government. The student can opt for either of the two scholarships whichever is more beneficial to him. Test check of records revealed that 89 students of Chengalpattu Law College in Kancheepuram District got HES scholarship of Rs 6.23 lakh during 2004-06, in addition to the sanction of GOI Post Matric scholarship. As these students were day scholars, payment of HES scholarships was also against the scheme guidelines.

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[7] Boys: Rs 30.85 crore (1,61,197 students) and girls: Rs 48.58 crore (2,70,804 students)

[8] 2002-03: 13, 2003-04: 27, 2004-05:7 and 2005-06: 76.

Perusal of records revealed the following:

Belated payment of HES scholarships.

- There was a two year delay in the payment of scholarships under HESS for the year 2002-03 worth Rs 23.65 lakh to 314 students in 3 districts due to delay in sanction of grants by the Government,

- In 15 districts the scholarships for 2005-06 worth Rs 2.29 crore were distributed in the next financial year due to delayed sanction by the Government, and,

Rupees 42.85 crore pending to be recovered under the erstwhile loan scholarship scheme.

- An amount of Rs 42.85 crore was pending collection from the beneficiaries under the erstwhile loan scholarship as of 31 March 2006. The recoveries pending since 1991-92 reflected the absence of a proper system of loan recovery.

3.4.8.4 Overseas Scholarships

One student was only given scholarship under overseas scholarship scheme implemented since 2002-03.

Under the reciprocal scheme of exchange of students between the universities in India and abroad, Government, in supersession of orders of September 1998, issued (August 2002) revised orders for sanction of overseas scholarship every year to 10 SC/ST students whose parental income was less than Rs 12,000 per month and who were directly proceeding to foreign countries for pursuing higher education in accredited universities/institutions. However no student was sanctioned scholarship under the programme from 2002-03 to date and Rs 10 lakh allotted each year during 2003-06 at the budget stage were surrendered. Against 10 candidates provisionally selected after an interview in January 2004, one student only was selected and was sanctioned and paid Rs 13.10 lakh as scholarship during February 2007 as per the norms of the revised scheme.

3.4.9 Central Schemes

3.4.9.1 Centrally sponsored scholarship schemes

Sl. No.	Name of the scheme	Details of scheme and beneficiaries
(i)	Prematric scholarship for children of those engaged in unclean occupations	The children of those engaged in unclean occupations like scavengers, flayers and tanners and studying in standards I to X are sanctioned scholarships every year. There was no income ceiling for the award of scholarship and all students were allowed to draw the amount irrespective of their income.
(ii)	Post matric scholarship to SC/ST students	Both residential and non-residential scholarships are awarded to the students belonging to Adi dravidar and Tribal communities (excluding Scheduled Caste Converts). From 1 April 2003 annual income limit of the parent/guardian was increased from Rs 65,290 to Rs 1 lakh for availing the scholarship.

The details of targets and achievement and the number of beneficiaries covered during 2002-07 are given in **Appendix 3.19**. Certain important points noticed on the implementation of schemes are given below:

(a) Pre matric scholarship

No survey conducted for assessing eligible number of students under Pre matric Scholarship for children of those engaged in unclean occupation.

Though the GOI insisted (June 2003) that a survey/census to ascertain the eligible number of beneficiaries in the State for the programme be completed by March 2004, no such survey was conducted so far. The GOI again emphasised (June 2005) the need for the census as it was vital to arrive at literacy rate and dropout rate of the beneficiaries availing the scholarship so that relative plans could be formulated for their overall advancement. As the actual number of beneficiaries were not available, budget estimates were made by Government based on previous years' expenditure by giving adhoc increase of two to five *per cent*.

The DADW replied (January 2007) that the Department of Evaluation and Applied Research has been addressed to conduct a State level survey of the children. Even as of May 2007, the survey was not completed.

(b) Post matric scholarship

(i) An amount Rs 52.87 crore and Rs 14.53 lakh were due to be received under this scheme by the State Government as of 31 March 2007 towards SCs and STs respectively.

(ii) As per details collected from the Institute of Distance Education, University of Madras, 13 to 27 *per cent* of funds received in a year during the period 2002-06 for payment of GOI post matric scholarship to SC/ST students was paid only in the succeeding financial year.

Scholarship claims kept pending for want of funds and paid belatedly in the succeeding years due to non-assessment of eligible beneficiaries.

(iii) In five sample districts *viz*., Karur, Namakkal, Nagapattinam, Thoothukudi and Erode, applications were kept pending for want of funds and the same were cleared only during the succeeding years, indicating the inadequate assessment of funds required, due to non-availability of exact number of beneficiaries **(Appendix 3.20)**.

(iv) The disbursement certificate should be submitted and the balance remaining unpaid should be refunded to the Government within 15 days from the date of receipt of grants by the institution concerned. However the Tamil Nadu Agricultural University, Coimbatore had refunded Rs.1.74 lakh being the undisbursed scholarships amount related to 1973-2003 to the State Government only in November 2003.

Undisbursed scholarship remitted to State Government account instead of refunding to GOI.

(v) The undisbursed amount lying with colleges/institutions totalling Rs 34.81 lakh were remitted into State revenue account in three sample districts and the same has not been refunded to Government of India, or got it adjusted against the next year grant.

The DADW replied (January 2007) that instructions were issued to DADTWOs to remit back the undisbursed amount in the same head of account from which it was drawn.

3.4.10 Tribal Schools

Even though the specific objective of Tenth Five Year Plan was to improve literacy among the tribals by providing facilities for primary/middle education

in their habitations, Audit observed that the literacy rate of tribes in Tamil Nadu as per 2001 census was 41.53 *per cent*, which was 31.94 *per cent* below the overall literacy rate of the State. Non utilisation/delayed utilisation of GOI grants, delay in setting up schools like Ashram/GTR schools and non-provision of required infrastructure for these schools, illustrated in the succeeding paragraphs relating to the sample districts revealed that efforts made by the Government were not adequate. Such delays would further aggravate the situation and result in non-achievement in the enhancement of tribal literacy rate, which was already less by 31.94 *per cent* as compared to the state overall literacy rate.

3.4.10.1 Delayed construction of Ashram schools

Despite GOI releasing funds, construction of five Ashram schools was delayed.

Based on the proposal (March 1997) of State Government, GOI approved (October 1999) the scheme of construction of buildings for five[9] Ashram schools, (outlay: Rs 1.08 crore with 50 *per* cent central assistance) under the centrally sponsored scheme of construction of Ashram schools in tribal areas during 1999-2000 and released its share of Rs 53.75 lakh. After a delay of five years the State Government released (October 2005) Rs 1.06 crore including State share (Rs 52.50 lakh) to TAHDCO for the construction of buildings and for maintenance of Ashram schools in five places,[10] changing three places originally approved. However, perusal of records revealed that Government had not provided any funds in the budget during 1999-2000 and verification of the five sites identified for construction revealed that a school was already functioning at two sites. This had necessitated the identification of two new sites, which consumed further time. The Department attributed the delay to ban on recruitment of staff required for the schools and administrative delay in identification of sites. The sites for construction in all places have been handed over only between December 2006 and March 2007 to TAHDCO and the works were still under progress (May 2007).

3.4.10.2 Delay in construction of buildings for Government Tribal Residential Schools

Government ordered (May 2003) starting of five tribal residential schools[11] (GTRs) for the benefit of ST children in areas with concentration of the tribal people and released Rs 55.63 lakh to TAHDCO for construction of buildings (Rs 50 lakh) and for meeting cost of utensils, furniture, food charges etc. (Rs 5.63 lakh) to DADW, Chennai. Of the five schools, buildings for three have been completed and schools are functioning in the new buildings (July 2007). Site for one school *viz*., GTR School, Vattaparai, Kanniyakumari District was not transferred to Government by the Forest Department as GOI permission had to be obtained if the construction is to be carried out by other agencies other than Forest Department, as the area concerned was a wild life

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9 Tholthooki and Karakkanpettai in Dharmapuri District, Kallathur in Tiruvannamalai District, Mannur and Keerapatty in Salem District.

10 Tholthooki and Karukkanpettai in Dharmapuri District, Balapuyampatti in Tiruvannamalai District, Keelathombai and Muyalkadu in Salem District.

11 Moolabellar Village (Dharmapuri District), Vattaparai (Kanniyakumari District), Malayalapatti (Namakkal District), Cherambadi changed subsequently to Semmanarai (The Nilgiris District) and Perumalpudur (Coimbatore District).

sanctuary. CTW, in his reply (May 2007) stated that action is being taken to construct the buildings through Forest Department and that information on the stage of construction in respect of the fifth school was awaited from DADTWO concerned.

3.4.10.3 Non-provision of infrastructure to GTR schools

Infrastructure facilities lacking in GTR schools.

(a) State Government sanctioned a sum of Rs 60.83 lakh in 3 instalments during February 1997 to November 2000 for construction of a school building, teachers quarters and Girls hostels for GRT, Melanai Papanasam. The construction of buildings could not be taken up as the Forest Department did not permit the construction of buildings as they were proposed near Mundanthurai Tiger Sanctuary and the money was diverted to another GTR school in Dindigul District. GTR School at Melanai Papanasam continues to function in semi permanent sheds even after a decade.

(b) Test check of records of five GTR schools[12], in Namakkal District revealed that no toilets and kitchens were provided. Due to absence of provision of separate kitchen, the dormitory rooms were used as kitchen resulting in inconvenience to the students. The District Collector had forwarded a proposal (August 2006) for the repair and maintenance of class rooms, construction of separate kitchen and toilets at a cost of Rs 46.95 lakh. The proposal is pending in the Directorate (May 2007).

3.4.11 Non-receipt of GOI grants for the scheme of Special Coaching

GOI grants not received for the scheme of special coaching of SC/ST students for professional courses Entrance Examinations.

Under the centrally sponsored "Coaching and Allied scheme for weaker sections including SCs and STs" pre-examination coaching has to be provided for improving their representation and standard of performance in the competitive examination for various posts/services in Government/Public Sector Undertakings. However, in Tamil Nadu no such training/coaching is imparted by the State Government for preparing the SC/ST students for appearing for Union/State Public Service Commission, Recruitment Board Examinations of the Union Government etc., despite availability of assistance from the GOI.

There is only a scheme for providing training of 21 days to students appearing for Tamil Nadu Professional Colleges Entrance Examination in the districts during March-April each year. The number trained and the expenditure incurred under this training during 2002-03 to 2006-07 are given below:

Year	Number trained	Number passed the professional course entrance examination (percentage of success)	Expenditure incurred (Rupees in lakh)
2002-03	1150	254 (22)	6.72
2003-04	1025	144 (14)	5.69
2004-05	1025	189 (18)	8.55
2005-06	1026	187 (18)	8.55
2006-07	950	(Not available)	7.22

[12] Valavanthinadu higher secondary school, Mullukurichi girls high school, Sengarai high school, Sengarai primary school and Pallikattupatti primary school.

No central assistance was received for this purpose from 1993 to date for this scheme. An amount of Rs.33.53 lakh claimed from the GOI for this programme for the period 1993-2003 is yet to be received (February 2007).

3.4.12 Hostels

3.4.12.1 Delay in construction of hostel buildings

Construction of hostel buildings pending since 2002-03.

The Government decided (July 2001) to construct buildings for the 574 hostels which were functioning in private rental buildings within a period of two years. Of the above, 152 buildings were taken up for construction during 2001-02, of which 151 were completed and one was under progress. Orders were issued during 2002-07 for construction of buildings for 342 hostels (Boys hostels: 308 and girls hostels: 34) at the rate of Rs 31.50 lakh per hostel through TAHDCO for which the sites were reported as available. The remaining 80 hostels are still functioning in rented buildings.

As of March 2007, out of 342 buildings taken up for construction during 2002-07, 72 buildings remained to be constructed. Of these, 59 were under progress and tenders were yet to be called for 11 works. The remaining two works had not commenced as the sites were not handed over.

Delayed construction of hostel buildings resulted in continued expenditure on rent for these hostels.

As the construction of these hostels was not completed, Government continues to incur expenditure towards rent for these hostels. Government subsequently ordered opening of 108 new hostels in 2005-06 and permitted the Department to take buildings on rental basis. Action is yet to be taken for construction of own buildings for these hostels and Government spent, as a whole, Rs 5.69 crore, on rent for the buildings occupied as hostels during 2002-07.

3.4.12.2 Hostels lacking basic amenities

Basic amenities lacking in hostels and proposals to provide them yet to fructify.

(i) DADW Chennai, submitted proposals (August 2005 and October 2005) to Government for construction of new buildings for 61 ADW hostels with all basic facilities like water supply, drainage/toilet etc., at Rs 20.98 crore[13] under centrally sponsored scheme shared between GOI and State Government, as all the 61 hostels lacked these basic amenities. Government had not issued any orders in this regard and called for cumulative details of hostel buildings so far sanctioned and constructed and the Utilisation Certificates of previous grants in aid. The DADW stated (April 2007) that TAHDCO has been requested to furnish these details.

(ii) Similarly orders of the Government were still awaited (April 2007) on the proposals (December 2005) of DADW for the construction of additional buildings for 268 hostels (82 for girls and 186 for boys) at a cost of Rs 129.90 crore with a view to provide a healthy and airy atmosphere for the students.

[13] 26 hostels functioning in dilapidated buildings (Rs 8.19 crore), 16 functioning in community halls/Panchayat Union buildings (Rs 5.04 crore) and 19 requiring additional buildings (Rs 7.75 crore).

Thus the students continued to live in the hostels lacking basic facilities and no concrete action was taken for their safe living and study.

3.4.12.3 Tribal hostels functioning in dilapidated buildings

Final Proposals for construction of new buildings for tribal hostels are yet to be received from the District Collectors.

DADTWOs of four districts (Salem, The Nilgiris, Tiruchirappalli and Tiruvannamalai) asked (November 2004 and December 2004), for the construction of new building for five tribal hostels[14] functioning in dilapidated and unsafe conditions. The CTW stated (May 2007) that the final proposals are still awaited for these hostels from the District Collectors.

3.4.12.4 Admission of students in Government hostels in excess of the norms

Students admitted in Government hostels in excess of norms.

Out of 1,178 Adi Dravidar Welfare hostels in the State functioning for the welfare of SC/ST students 268 hostels have inmates in excess of the admissible norms and these hostels are thus badly overcrowded.

Increase in the strength of students in the hostels in excess of the allowed limits and sanctioned strength over a period led to overcrowding in the hostels putting the students to hardship. Government ordered, in December 1991, adhoc increase of 1,000 boarders in 111 existing hostels with a sanction of Rs 7.50 lakh towards food and other charges and, in August 2003, another 1,000 boarders (poor rural SC students) were ordered to be accommodated in the 44 existing hostels situated in district headquarters with a sanction of Rs 41.54 lakh towards food charges, without provision of funds for additional facilities like accommodation and other basic amenities. However, the existing hostel buildings were already very old and did not have sufficient water, toilet and drainage facilities apart from insufficient/improper accommodation.

As there are many colleges/institutions functioning in Chennai District, the SC/ST students admitted to these institutions are seeking accommodation in the departmental hostels in large numbers. However, as against the requirement of about 1,582 seats, only 512 seats were available in the existing 12 college/ITI hostels (College hostels– seven, PG hostels – two and ITI hostels – three) with total sanctioned strength of 1,870, as only final year students would be vacating the hostels each year. To accommodate more students the Government ordered (January 2006) opening of three new hostels in Chennai with a total sanctioned strength of 250 and permitted the hiring of accommodation. However, no new building was hired on rent and the additional 246 students were accommodated in four[15] of the existing hostels. Due to increase in students' strength in these hostels, the students already accommodated were also put to hardship. In addition students who did not get

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[14] Government Tribal Hostel at Achenkuttappatti in Salem District (40 students), Government Tribal Hostel, Neerkakhimund in the Nilgiris District (100 students), Government Tribal Girls Hostels, Thuriyar and Top Sengattupatti in Tiruchirappalli District and Government Tribal Girls Hostel at Jamnamarvellur (50 students) in Tiruvannamalai District).

[15] Kodambakkam: 100; Royapuram : 70 ; Royapuram : 33 ; Nandanam : 43.

admission for the hostels and the students who were searching for a job, stay in the hostels in Chennai without any authorization.

In Nagapattinam District, the accommodation in college hostels was not adequate to cater to the needs of SC/ST students. During 2004-05, 116 SC/ST students did not get accommodation in department run hostels due to paucity of accommodation in college hostels.

In Namakkal District, the excess accommodation ranged between seven and 20 in three girls' hostels (Namakkal, Belukurichi and Mullukurichi) during 2002-06.

3.4.13 Examination results

Pass percentage of SCs/STs in examinations was lower compared to overall results.

The pass percentage of SCs/STs *vis-à-vis* general candidates appearing in twelfth and tenth standard examinations during the last five years is given in **Appendix 3.21**. The data in the Appendix revealed the following:

3.4.13.1 Twelfth standard examinations

Decrease in pass percentage during 2002-06.

The percentage of pass in respect of both SC and ST candidates declined during 2002-06 as compared to the percentage in 2001-02 indicating that the educational level of SC and ST students deteriorated after 2001-02 and did not improve much during 2002-06 even though the post-matric scholarships were implemented for their benefit during 2002-06.

3.4.13.2 Tenth standard examinations

Fluctuation in pass percentages of SC/ST candidates during 2001-06 under Tenth Standard Examination.

In respect of SC candidates, pass percentage improved from 64.3 *per cent* to 67.7 *per cent* during the period 2001-06. The gap in percentage of pass between the general candidates and SC candidates declined from 16 *per cent* to 13.1 *per cent* during 2001-06.

The pass percentage of STs came down from 69.2 *per cent* in 2001-02 to 63.1 *per cent* in 2003-04 and then increased to 67.1 in 2004-05 but again decreased to 66.1 in 2005-06. The gap in pass percentage of ST students increased from 11.1 *per cent* to 17.8 *per cent* and then slightly recovered to 14.7 *per cent* during the above period. However, the gap between SC and ST candidates and the general candidates continued to be high, and was at 13.1 and 14.7 in 2005-06. This indicated that the educational level of SCs and STs had to improve to reach the level of general candidates.

3.4.14 Manpower deployment

Government did not take decision on streamlining of staff deployment.

The DADTWO and the staff working at District level belong to revenue establishment and are being posted to the wing as and when needed by the District Collectors. As these staff are working directly under the control of District Collectors, they are being diverted very often for Jamabandi, election work, calamity relief works or other works of urgent importance on account of which they are unable for perform their duties in the Adi Dravidar Welfare wing satisfactorily. As a result, the well intended schemes for the Welfare of SC/ST could not be implemented or monitored properly, as detailed in paras 3.4.7, 3.4.8, 3.4.9. As the staff of district offices are being transferred frequently, they do not evince much interest in their work. The Adi Dravidar Department has also no powers to take disciplinary action against the staff for their lapses, as they belong to Revenue Department.

Sensing the requirement of an independent establishment for the Adi dravidar Wing, Government ordered (May 1979) that a separate service be considered for the Adi dravidar Welfare department by drawing officers from various departments and requested the DADW to send necessary proposals for this purpose. However, the proposals sent by the Director in this regard during various dates were under protracted correspondence and were still pending with the Government (April 2007). Thus, a separate service is yet to be formed for the Department and the difficulties in execution/monitoring of the programmes of welfare of SCs/STs remain.

Also, despite a separate Directorate being formed for looking after the welfare of Scheduled Tribes from April 2000, the district level offices continue to look after the programmes of both the directorates.

Thus, the administrative structure for implementing programmes for the benefit of SCs and STs was not consistent with the principle of one functionary reporting to only one superior and the district level functionaries and the Directorates are not under the same department of the Government at present.

3.4.15 Monitoring

As per instructions (May 2006) of DADW, scholarship payments and other connected records of the schools/colleges and other institutions have to be verified to the extent of specified percentages[16] by the District Officers, Special Tahsildhars and Revenue Inspectors. The check is to ensure whether the institutions are following the norms prescribed for payment of scholarships to SC/ST students and whether they are paid in time and in conformity with the rules. However, no such verification was made by the specified officers on the plea of heavy work load. Had necessary verification been done as prescribed, many of the deficiencies pointed out by Audit in various paragraphs above could have been noticed earlier and rectified. In the absence of verification, the disbursement certificates were also not forwarded by the

[16] District Officers: 10 *per cent*, Special Tahsildhars: 25 *per cent* and Revenue Inspectors: 100 *per cent*.

institutions within the prescribed time of 15 days from the date of disbursement, to the district authorities.

3.4.16 Conclusion

The literacy rate of SCs and STs was much below the overall literacy rate as per 2001 census. The drop-out rate of SC children at upper primary level and ST Children at primary and upper primary level was higher than the overall drop-out rate at those levels. No data regarding the number of eligible SC/ST beneficiaries were compiled in the State and in its absence, funds for various schemes for the educational development of SCs/STs were provided in the budget estimates based on the expenditure of the previous year with some ad-hoc increase. This along with belated release of required funds resulted in disbursement of scholarships to SC/ST students invariably during the subsequent academic year defeating the purpose of providing scholarship. The functioning of the district level offices of the Department with most of the staff belonging to another department, resulted in poor implementation/ monitoring of the schemes taken up for SCs/STs.

3.4.17 Recommendations

- Steps should be taken to reduce the drop-out rate of ST students by extending more educational facilities like schools, scholarships etc. in the areas where the STs are concentrated.

- Data on eligible beneficiaries belonging to SC/ST have to be compiled immediately to assess the requirement of funds for their educational development.

- Funds for disbursement of scholarships have to be distributed to the districts duly adhering the approved annual action plan each year so as to complete disbursement of scholarships, by the due dates specified in the plan.

- Construction of hostels should be monitored so that delays are eliminated and hiring of buildings for hostels in Chennai expedited to reduce overcrowding in the existing hostels.

- The district level administrative structure of the department should be restructured, conducive to the proper implementation of the schemes for SCs/STs.

The above points were referred to Government in July 2007; reply had not been received (November 2007).

AGRICULTURE DEPARTMENT

3.5 Functioning of Tamil Nadu Agricultural University

Highlights

Government of Tamil Nadu established the Tamil Nadu Agricultural University in Coimbatore under Tamil Nadu Agricultural University Act, 1971. A review on working of the above University was undertaken between March and May 2007.

- **Out of 1,713 papers for which revaluation was sought for during 2005-07, there was change in marks scored in respect of 94 *per cent* of the papers. Valuation thus was not upto the mark.**

(Paragraph 3.5.6.3)

- **There was shortfall in coverage of students ranging between 30 and 55 *per cent* during 2001-05 in respect of "Periyar Endowment" scholarship.**

(Paragraph 3.5.6.4)

- **The University abandoned 42 sub-projects during 2002-07 due to retirement, transfer or death of principal investigators.**

(Paragraph 3.5.7.2)

- **The University had not introduced any successful hybrids for rice, sorghum, pearl millet and cotton during the last ten years and failed to popularise new varieties.**

(Paragraph 3.5.7.4)

- **Non-reckoning of certain items of University receipts for the purpose of grant resulted in claiming of grant in excess to the extent of Rs 9.55 crore during 2002-06.**

(Paragraph 3.5.9.2)

- **The University booked non plan expenditure of Rs 26.23 crore under plan during 2003-06.**

(Paragraph 3.5.9.3)

- **In respect of 259 schemes, the University spent Rs 7.40 crore over and above the funds received for the schemes. The University did not state the source from where the amount was diverted for meeting the excess expenditure.**

(Paragraph 3.5.9.4)

3.5.1 Introduction

Tamil Nadu Agricultural University (TNAU/University) was established in the year 1971 at Coimbatore under Tamil Nadu Agricultural University Act, 1971. The objectives for establishing TNAU were (a) to impart education in different branches of agriculture and allied sciences, (b) to further the advancement of learning and prosecution of research in agriculture and allied sciences, and, (c) to undertake the extension of such sciences to the rural people in cooperation with the Government departments concerned. Though TNAU had only two constituent colleges and six agricultural research stations/institutions in 1971, as of May 2006 it had 64 institutions[1] under its control.

3.5.2 Organisational set up and activities

The Governor of the State is Chancellor of TNAU and the Minister-in-charge of Agriculture is the Pro-Chancellor. While the Vice Chancellor is in overall charge of the University, the Registrar is in charge of administration and the Comptroller in charge of finance and accounts. The organisational set up is furnished in **Appendix 3.22.** The TNAU, in addition to plan and non-plan schemes of the State Government, also undertakes schemes and conducts research financed by Indian Council of Agricultural Research (ICAR), National Agriculture Research Project (NARP), National Agriculture Technology Project (NATP), Krishi Vigyan Kendra (KVK) and schemes sponsored by Government of India (GOI). The accounts of the University are audited and certified by Director of Local Fund Audit.

3.5.3 Audit objectives

The review was conducted with objective of ascertaining whether

- The University imparts quality agricultural education,
- The resources available to research are allocated judiciously and fully employed,
- The extension activities realised the objective of laboratory to land, and,
- Proper planning is being done and the finances of the University are managed effectively.

3.5.4 Audit criteria

The following were taken as Audit criteria for the review:

- Academic Council's norms for admission,
- Norms prescribed for undertaking research projects,
- Targets fixed for extension activities by Government and University norms for achieving the targets,

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[1] Constituent Colleges: 10 and affiliated colleges: 2 – concentrate on education; agriculture research stations: 33 – engaged in research activities; and Krishi Vigyan Kendras: 14 and plant clinic centres: 5 – engaged in extension activities/ transfer of technology. Total: 64.

- University plan documents and budgetary procedures,
- Established accounting principles, and,
- Guidelines issued by the Finance Committee of TNAU.

3.5.5 Audit Coverage and methodology

The audit of the University is undertaken under Section 14 of Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. During the review, records of the Agriculture Department of the Secretariat and Commissioner of Agriculture were scrutinised. In addition to records of the University and the Tamil Nadu Rice Research Institute, Aduthurai, all transactions under the selected activities in three[2] out of 10 constituent colleges and in three[3] out of 14 Krishi Vigyan Kendras selected through random sampling method and activities of ten[4] out of 33 agricultural research stations consisting representative sample of various agro-climatic and crop specific zones were also reviewed. The review was conducted between March and May 2007, covering the period 2002-07.

The audit objectives and criteria were discussed with the Registrar of the University during the entry conference held in March 2007. The findings of the review were discussed with the Registrar during the exit conference in June 2007.

3.5.6 Education

The University offers twelve under-graduate courses, 29 postgraduate courses and 24 doctoral degree courses under various branches of agriculture. The pass percentage in UG courses varied from 85 to 97; in PG courses from 78 to 94 and in Ph.D from 44 to 82 during the last four years ending 2005-06 as depicted in the table below.

(No. of students)

Course	Admn. 1999-2000	Pass (2002-03)	Admn 2000-01	Pass (2003-04)	Admn 2001-02	Pass (2004-05)	Admn 2002-03	Pass (2005-06)
U.G.	443	381 (86)	440	373 (85)	424	381 (90)	511	498 (97)
	Admn. 2001-02	**Pass (2002-03)**	**Admn 2002-03**	**Pass (2003-04)**	**Admn. 2003-04**	**Pass (2004-05)**	**Admn. 2004-05**	**Pass (2005-06)**
P.G	334	269 (81)	279	263 (94)	242	188 (78)	248	214 (86)
	Admn. 2000-01	**Pass (2002-03)**	**Admn. 2001-02**	**Pass (2003-04)**	**Admn. 2002-03**	**Pass (2004-05)**	**Admn. 2003-04**	**Pass (2005-06)**
Ph.D	144	70 (49)	135	60 (44)	138	113 (82)	92	51 (55)

Admn: Admission.

Figures indicated within brackets represent the percentage of pass to the number admitted.

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[2] Agricultural College and Research Institute, Coimbatore, Forest College and Research Institute, Mettupalayam and Horticulture College and Reseach Institute, Coimbatore.

[3] Krishi Vigyan Kendras at Tindivanam, Vridhachalam and Virinjipuram.

[4] Research Stations at Aduthurai, Aliyarnagar, Cuddalore, Gudalur, Srivilliputhur, Thirupathisaram, Tindivanam, Tirur, Virinjipuram and Yercaud.

Further 28 students participated in the International Agriculture and Rural Development Course (INTAG) in Cornell University, USA during 2004-07. During the last four years 1,040 students (2003: 80; 2004: 150; 2005: 360 and 2006: 450) got placements in various organisations.

3.5.6.1 Faculty

The sanctioned faculty for the ten constituent colleges under Tamil Nadu Agricultural University was 662 of which 140 posts were vacant as of January 2007 (**Appendix 3.23**). Out of the ten colleges, the vacancy was more than 30 *per cent* of sanctioned strength in three colleges in Killikulam, Kumulur and Madurai. About 80 *per cent* of the faculty members were trained in various academic institutions within and outside the country under Agriculture Human Resource Development Programme.

The Academic Council of the University did not fix any norms for teachers-students ratio. However, the teachers-students ratio was stated to be 1:12.

The University did not furnish any information to Audit on the books published, papers presented and conferences attended by the faculty of TNAU.

3.5.6.2 Condonation of shortfall in attendance

On an average about 540 students are admitted by the University in the first semester of under graduate courses every year. As per Rule 6 of Semester System Rules and Regulations of Under-graduate Education, 1999 a student has to earn 80 *per cent* of attendance to appear for the examination. Each semester has 105 working days. As the University admitted candidates even after commencement of classes there was shortfall in attendance and the minimum requirement of attendance for appearing in examinations could not be maintained. The Academic Council had condoned the shortfall in attendance beyond 20 *per cent* to the extent indicated below:

(No. of students)

Year	Shortage in attendance		
	21 to 40 *per cent*	**41 to 60 *per cent***	**More than 60 *per cent***
2002-03	55	32	62
2003-04	50	32	10
2004-05	145	57	11

The Academic Council of the University, taking cognizance of the delay in admission of candidates, suggested (December 2002) that the University explore the possibility of admitting students under single window system.

Amendment to rule requiring 80 *per cent* attendance would hamper quality of education.

However, during the year 2005-06, the Academic Council, got the above rule provision amended in such a way that for calculating 80 *per cent* attendance the number of working days was to be calculated only from the date of joining of the student for the first semester. The amendment would mean that a student with just a day's attendance could also sit for the first semester examination. Thus the amendment has reduced the rule requiring 80 *per cent* attendance to a farce and also thereby affected the quality of education.

In reply the University stated that in case of ICAR candidates from other states there was late admission, which was beyond its control. However, the contention of the University was not tenable as the University admitted only 16 and 13 candidates for UG programme under ICAR quota during 2004-06.

3.5.6.3 Valuation

According to para 11.9 of Under-graduate Rules and Regulations, 1999 (semester system) of Tamil Nadu Agricultural University, a student can submit a request for revaluation / re-totalling in the prescribed format to the Controller of Examinations (CE) through the Deans concerned not later than ten working days after the issue of report cards to the students, the fee for such revaluation / re-totalling being Rs 150 (increased to Rs 300 with effect from April 2003).

The number of students who took up under-graduate examination was 3,918 during odd and even semesters of 2005-06 and odd semester of 2006-07. Number of students who applied for revaluation during 2005-07 and the results of revaluation are given below:

Year	No. of students who applied for revaluation	Total number of papers for which revaluation was applied for	Result of revaluation		
			Higher marks awarded	Lower marks awarded	No change in marks
2005-06	587	722	492	190	40
2006-07	835	991	701	229	61
Total	**1,422**	**1,713**	**1,193**	**419**	**101**

Out of 1,713 papers for which revaluation was sought in 2005–07 there was change in marks in respect of 1,612 papers (94 *per cent*).

Out of 1,713 papers for which revaluation was applied for, higher marks were awarded in respect of 1,193 papers (70 *per cent*) and lower marks were awarded in respect of 419 papers (*24 per cent*) after such revaluation. Thus, there was change in marks scored in respect of 94 *per cent* of the papers for which revaluation was applied for indicating that valuation in the first instance was not done with due care.

The University should seek to improve the quality of valuation of examination papers.

3.5.6.4 Endowment accounts

For awarding medals to meritorious students, the University is having a number of endowments. The Academic Council suggested (January 2004) that the life of all existing endowments be limited to 10 years from the date of acceptance, and after the tenth year the amounts in such endowments transferred to a separate general endowment account and the amount used for instituting new endowments by the University. Accordingly, the University closed (March 2004) 99 endowments involving a total amount of Rs 5.56 lakh. The University did not, however, institute any new endowment, but donated

Rs 3.65 lakh to Chief Minister's Public Relief Fund and transferred the balance amount to general fund in violation of the suggestions of the Academic Council.

The purpose for which 'Periyar endowment' was instituted was not served as there was shortfall in coverage of students to the extent of 30 to 55 *per cent* during 2001-05 and Rs 11.19 lakh was diverted for other purposes.

Government of Tamil Nadu instituted (July 1997) an endowment in the name of Periyar with Government contribution of Rs 25 lakh. The Government directed that 80 *per cent* of the interest earned by depositing the above amount be distributed to students as scholarship, and the balance, added to the endowment. It was also expected that the amount available for distribution as scholarship would be Rs 3 lakh every year and a scholarship not exceeding Rs 5,000 was to be distributed to 60 students. The University did not maintain a separate account for the above endowment. The actual amount distributed during 2001-05 varied from Rs 1.35 lakh to Rs 2.10 lakh per year and number of students benefited varied from 27 to 42 indicating shortfall in coverage ranging from 30 to 55 *per cent*. The University unauthorisedly utilised Rs 11.19 lakh from the interest earned on the above endowment deposits for construction/modernisation of central exhibition hall in 2002-03 without the approval of the Government.

The University thus has failed to utilise the endowment deposits for the purpose for which they were instituted.

3.5.7 Research

3.5.7.1 Research schemes

The research effort in TNAU was mainly directed towards development of new varieties/hybrids in agricultural and horticultural crops and introduction of new management technologies for improved agricultural practices and plant protection. In addition, research for development of new agricultural equipment for mechanisation of farms was also undertaken.

Research activities in TNAU are financed by the Government of Tamil Nadu, ICAR and external agencies. Research activities are undertaken through research sub projects on various topics allotted to the scientists. The topics for research are generated in various crop scientist meets, scientific workers conference (SWC), meetings with the Joint Directors of Agriculture Department, etc.

The details of sub projects taken up during 2002-07 are furnished in **Appendix 3.24**. Of the 1,654 sub projects (including opening balance of 677 in 2002-03) taken up during 2002-07, 897 were completed, 26 kept in abeyance, 102 were deleted and 629 were in progress. The University did not give details on the outcome of the 897 completed sub projects.

3.5.7.2 Research activity in test checked research stations

Test check of records pertaining to research activities in ten research stations disclosed the following position for the period 2002-07:

Sl. No.	Name of ARS	Position of number of sub projects during 2002-2007				
		Opening balance and new projects	Number of sub projects			Closing Balance
			Completed	Kept in abeyance	Deleted	
1	Aduthurai	103	57	3	5	38
2	Aliyarnagar	53	33	0	0	20
3	Cuddalore	41	11	1	5	24
4	Gudalur	2	1	0	0	1
5	Srivilliputhur	31	18	0	1	12
6	Thirupathisaram	16	1	1	2	12
7	Tindivanam	46	21	4	5	16
8	Tirur	16	8	0	2	6
9	Virinjipuram	5	3	0	0	2
10	Yercaud	41	12	0	3	26
	Total	**354**	**165**	**9**	**23**	**157**

Forty two sub projects were abandoned due to retirement, transfer or death of the principal investigators.

Out of 354 research sub projects taken up during 2002-2007, nine projects have been kept in abeyance and 23 projects were deleted mainly due to transfer of principal investigators. However, the above figures do not include 19 sub projects proposed for deletion by Yercaud agriculture research station even before achieving the objectives due to non-availability of scientists on account of retirement, transfer, etc. Out of 165 research projects completed during the above period, the research stations have released only four new varieties of rice (three in Aduthurai and one in Thirupathisaram) and two new varieties of sugarcane (in Cuddalore) and 11 new management technologies (three in Aduthurai, three in Cuddalore and five in Srivilliputhur). Of the 21 sub projects completed by Agriculture Research Station, Tindivanam, three sub projects were completed after five to seven years delay and in respect of 16 sub projects pending completion, completion report in respect of four sub projects due for completion in March 2006 were not furnished (June 2007).

A plan scheme titled 'Scheme for physiological studies on salt tolerance and development of rice varieties tolerant to coastal and inland salinity' was in operation in Rice Research Station (RRS), Tirur from May 1993. The expenditure on the scheme for the period 2001-07 was Rs 29.43 lakh. So far no such variety/hybrid has emerged even after 14 years of research.

Agriculture Research Station, Tindivanam completed (September 2004) a research sub project on 'Field screening of groundnut cultures/liners for resistant to insect pests'. The Research Project Advisory Committee of the University, while approving (June 2005) the completion report, stressed that a further project be taken up to confirm resistant lines. This was not done. Similarly a research sub project on 'Studies on the insects collected in light trap at oilseeds research station, Tindivanam' was taken up in October 2001 and completed in September 2003. While scrutinising the completion report, the Director, Tamil Nadu Rice Research Institute (TRRI), Aduthurai stated (May 2005) that a comprehensive conclusion would be arrived at only on further data gathered over years as the pest incidence was very low during the project period. However, this project, too, was not followed up.

The above instances would indicate that the sub projects did not serve the intended purpose.

3.5.7.3 Man power in research stations

The sanctioned strength of scientists for the 33 research stations under TNAU was 396 of which 150 posts were vacant as of January 2007. In respect of the ten test checked research stations nine posts were vacant for more than 10 years, 15 posts for more than five years and 16 posts for more than one year. All the 15 sanctioned posts were vacant in Agriculture Research Station, Virinjipuram as of March 2007.

The shortage of 38 *per cent* of the sanctioned strength of scientists would have adversely affected the quality of research in the University.

3.5.7.4 Hybrid crops improvement

The University did not introduce any successful hybrids for rice, sorghum, pearl millet and cotton.

The Tenth Plan envisaged development of suitable hybrids in rice, sorghum, pearl millet, maize and red gram to increase the productivity with a low cost of cultivation. The development of hybrids by TNAU and their performance are discussed below:

Tenth plan emphasised the development of hybrids in rice with good cooking quality coupled with pest and disease resistance. The actual quantity of hybrid rice (CORH2 and ADTRH1 released during 1998) breeder seeds distributed was only 220 Kgs, 260 kgs and 56 kgs respectively during 2003-04, 2004-05 and 2005-06. The University stated that the two new hybrid varieties were not preferred by the farmers due to their cooking quality and aroma. The performance of the high yielding varieties ASD 16 (Karif), CR 1009 and TPS 3 (Rabi) was also not found satisfactory.

Though COH(M) 5, a maize hybrid was developed in 2006, it is only utilised for the purpose of conducting front line demonstrations (FLD). The maize market is dominated by private hybrids and the existing COH(M) 4 of TNAU introduced in 2002 failed to win the preference of farmers as the private hybrids excelled in terms of yield.

Cotton hybrid TCHB 213 was developed by TNAU during 1990. The distribution of this breeder seed (hybrid) was only eight kgs and one kg as against the total quantity of 278 kgs and 168 kgs of cotton seeds distributed during 2003-04 and 2004-05 to state agencies and there was no indenting/distribution of the above hybrid during 2005-06.

Thus, no hybrid seed was developed for sorghum, pearl millet and cotton since 1997 and two rice hybrids developed were not preferred by the stake holders.

3.5.7.5 Breeder Seed Production

Production and distribution of breeder seeds

In the following instances, the breeder seed distribution to State Government Department by TNAU was less than the indented quantity.

(in Kgs)

Crop	Year	Quantity indented	Quantity distributed	Shortfall *(per cent)*
Pulses	2005-06	9,029	8,177	9
Oil seeds	2003-04	98,819	70,818	28
	2004-05	58,175	41,190	29
Cotton	2003-04	278	252	9

Specific reasons for short fall in supply were not furnished by the University. Even though the ARS, Virinjipuram, one of the test checked units, had 51.52 acres of farm land, which was shared with KVK, Virinjipuram, no cropping programme for production of breeder seeds was proposed during 2004-06.

Production of truthfully labelled Seeds

The truthfully labelled (TFL) seeds[5] production at TRRI, Aduthurai was as below:

(in Kgs)

Year	Total produced	Grain (percentage)
2003-04	72,028	35,262 (49)
2004-05	56,939	33,729 (59)
2005-06	56,207	17,887 (32)

Production of grain to the extent of 32 to 59 *per cent* of total TFL seeds produced during 2003-06 would indicate the failure of the farm to produce quality seeds.

The above instances would reflect the deficiencies in production and distribution of seeds by Tamil Nadu Agricultural University.

3.5.7.6 Part II Schemes

Two Part II schemes, 'Strategies and programme for increasing the production and productivity of maize in Tamil Nadu' and 'Popularising Sweet Sorghum in different agro climatic zones of Tamil Nadu' were taken up during 2005-07. The main objective was to develop location specific production technologies for maize hybrids and sweet sorghum in addition to popularising them in farmers' holdings. Both the schemes were completed in March 2007[6] for dissemination to farmers. The University stated that as the trials were not conducted in the same places, a breakthrough on location specific production technologies for fertiliser could not be developed within the two years and would take at least four or five years. In the above circumstances the programmes should not have been taken up in Part II schemes.

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5 Truthfully labelled means that the quality of the seed is guaranteed by the seller for the prescribed minimum standards but the purity and quality of such seeds are not certified by any seed certification agency under the provisions of the Seed Act, 1966.

6 The expenditure on 'Popularising Sweet Sorghum in different agro climatic zones of Tamil Nadu' was Rs 8 lakh and the details of expenditure for 'Strategies and programme for increasing the production and productivity of maize in Tamil Nadu' are awaited.

The University's research activities have thus not been successful for the period 2002-07.

3.5.8 Extension activities

3.5.8.1 Meetings of Research and Extension Education Councils

Extension Education Council meeting was conducted in January 2007 after a gap of six years.

According to TNAU Act, 1971 the meetings of the Research Council and Extension Education Council are to be conducted every year. However, it is noticed that 39th Research Council Meeting was conducted in December 2002 and the subsequent meeting was held in January 2007. Similarly the 37th Extension Education Council Meeting was conducted in November 2001 and the subsequent meeting was held in January 2007. This would indicate that extension activities were not given due importance. The University stated (August 2007) that approval for new non-official members was awaited from the State Government and hence the meeting of the Council was not convened.

3.5.8.2 Training to extension functionaries

It is seen that between June 2004 and March 2007 a total number of 149 training courses have been conducted by KVK, Virinjipuram for farmers, members of self help groups, rural youths, etc. However most of the training programmes were given to the farmers/self help groups in the nearby blocks Vellore, Anaicut, Kaniyambadi, K.V. Kuppam and Gudiyatham. The participation from distant blocks like Tirupattur, Wallajah, etc., was less than five *per cent* of the total trainees. The University stated (August 2007) that the blocks situated away from the KVK would also be covered from 2007-08.

Similarly the extension activities in Villupuram district by KVK, Tindivanam covered only eight[7] nearby blocks out of 22 blocks in the district. The University replied (August 2007) that the KVK was established only two years back and hence, all the blocks could not be covered for want of time and man power.

3.5.8.3 Implementation of ISOPOM scheme

To popularise the production potential of hybrids/new varieties and package of practices of respective crops to farmers and to assess the production constraints, the centrally sponsored scheme of ISOPOM (Integrated scheme of oil seeds, pulses, oil palm and maize) was implemented in 18 places. Cropwise demonstrations conducted during 2005-07 by TNAU centres at 10 places are as follows:

Crop	Number of Block demonstrations		Number of IPM[8] demonstrations	
	Allotted	Conducted	Allotted	Conducted
Oil seeds	52	21	66	17
Pulses	300	103	51	20
Maize	15	7	9	4
Total	**367**	**131**	**126**	**41**

[7] Gingee, Mailam, Marakanam, Thirukovilur, Tindivanam, Vanur, Vikravandi and Villupuram.

[8] Integrated Pest Management.

Out of 493 demonstrations allotted, reports have been received for 172 demonstrations as of January 2007. Reports from other eight places are awaited (March 2007). The main cause for delay in conducting the demonstrations was stated to be allotment of large number of demonstrations to KVKs.

3.5.8.4 Popularising new varieties

The distribution details of breeder seeds of rice and groundnut varieties released prior to 1997 and after 1997 are furnished in the table below for the period 2003-06.

(in Kgs)

Seed	Year	Distribution of breeder seeds relating to varieties released		
		Prior to 1997*	Since 1997*	Total
(i) Rice	2003-04	45,211(61)	29,045(39)	74,256
	2004-05	58,268(69)	26,024(31)	84,292
	2005-06	58,843(62)	35,309(38)	94,152
(ii) Groundnut	2003-04	70,252(93)	5,137(07)	75,389
	2004-05	47,990(94)	3,230(06)	51,220
	2005-06	81,699(91)	7,630(09)	89,329

* The figures in brackets indicate percentage to total quantity released.

As may be seen from the above, the distribution of varieties released after 1997 ranged from 31 to 39 *per cent* in respect of rice and just six to nine *per cent* in respect of groundnut. Further, there was no indent for six varieties developed by TNAU since 1997 (Rice: two, Sorghum: one, Maize: one, Cumbu: one and Sunflower (hybrid): one). A survey conducted by the Centre for Agriculture and Rural Development Studies of the TNAU for the period 2004-06 also found that of the six varieties of rice preferred by the farmers, five varieties were introduced prior to 1997 and one variety in 1998. The University thus failed to popularise the new varieties introduced.

3.5.9 Financial Management

3.5.9.1 Funding

Various sources of receipts of TNAU during 2002-06 and the expenditure there from were as below:

(Rupees in crore)

Source	2002-03		2003-04		2004-05		2005-06*	
	Receipt	Expr.	Receipt	Expr.	Receipt	Expr.	Receipt	Expr.
State Government grants for:								
Non plan schemes	42.92**@**	49.86	46.25	42.16	31.14	45.99	43.50	49.97
Plan schemes	17.00	17.57******	28.00	28.84	30.04	26.67	29.79	29.55
ICAR	16.23	16.70	16.69	15.82	21.77	19.77	26.29	23.75
GOI	3.11	3.27	4.47	3.44	5.67	5.80	6.48	6.71
Others	4.05	3.29	4.56	4.32	4.10	5.44	12.26	9.01
University receipts.	6.35		6.86		6.88		8.20	
Total	**89.66**	**90.69**	**106.83**	**94.58**	**99.60**	**103.67**	**126.52**	**118.99**

***** Accounts have been finalised upto 2005-06 only.

@ Higher rounding.

****** lower rounding given during conversion from absolute figures to rupees in crores.

The State Government released an excess grant of Rs 2.73 crore upto 2005-06.

The Pubic Accounts Committee with respect to Paragraph Number 6.5.5 in the Report of Comptroller and Auditor General of India for the year 1984-85, had recommended that the State Government should release only such amount as was likely to be spent by the University during the year as grant. However, the State Government had released an excess grant of Rs 2.73[9] crore up to the end of 2005-06.

3.5.9.2 Receipts not taken into account for reckoning the net grant

As certain items of receipt were not reckoned for the purpose of grant to be released, the government released an excess grant of Rs 9.55 crore during 2002-06.

As per TNAU Act, 1971 the Tamil Nadu Government releases a non-lapsable lump sum grant not less than the net expenditure of the University every year. The net expenditure for the purpose should be arrived at after adjusting the receipts of the University. However, the University has diverted the following receipts for non-budgetary activities and did not reckon them for the purpose of arriving at the net grant:

The University operated an account titled 'Deposits'. The University had parked its receipts[10] amounting to Rs 1.61crore during 2003-06 in the deposit account.

The University diverted normal receipts such as institutional charges collected under various schemes, sale of books, hire charges, affiliation fees, etc., amounting to Rs 5.55 crore during 2002-06 to Education and Research Development Fund (ERDF).

The University extended a loan of Rs 1.23 crore from ERDF during 2003-06 to various profit making schemes in the name of Venture Capital Scheme[11] (VCS) with the approval of the Vice Chancellor of the University. The profit earned during 2003-06 from VCS, Rs 1.28 crore was not taken as receipts of the University.

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	(Rs in crore)
Opening Balance (2002-03)	(-) 3.59
Receipts (Plan and Non-Plan including University receipts) during 2002-06	296.93
Total	293.34
Expenditure (Plan and Non-Plan) during 2002-06	290.61
Net excess release of grant	2.73

10 (a) Excess opening balance and closed account (Rs 74.01 lakh in 2004-05), (b) admission fees collected by the Dean (Agri.) (Rs 25.78 lakh in 2005-06), (c) sale proceeds of application forms collected by the Dean (Agri.) (Rs 25.76 lakh in 2004-06), (d) training fund received from Hill Area Development Project (Rs 7.05 lakh in 2003-04), (e) recoveries towards five *per cent* minimum benefit (Rs 12.96 lakh in 2005-06) and (f) recovery of fair rent fixed (Rs 15.01 lakh in 2005-06). Total : Rs 160.57 lakh or Rs 1.61 crore.

11 Schemes such as 'Production of truthfully labelled seeds', 'Production of bio–inoculants under quality control', 'Production and supply of seedlings of Jatropha curcas', etc.

The University constructed (2004-05) a technology park comprising five buildings with a constructed area measuring about 37,500 sq. ft. in its Coimbatore campus. The University diverted Rs 43.23 lakh from its receipts for meeting the expenditure of Rs 1.15 crore on construction.

The University is offering consultancy services since 2003. The ratio at which the consultancy charges were to be shared between the University and scientists was not got approved either by Government or by Board of Management. Presently the charges are shared at a ratio fixed by the Vice Chancellor. As per the annual accounts of the University for the year 2003-06, Rs 54 lakh, being the share of the University, was kept in a separate bank account instead of taking the amount as receipt of the University.

The University Provident Fund (UPF) account is operated for accommodating the provident fund amounts of the employees temporarily until disbursement/credit to the respective accounts. It was pointed in Paragraph Number 6.5.5 of CAG's Audit Report – Civil - 1984-85, that the University was not exhibiting interest earned on investment of Provident Fund deposits in excess of the amount paid towards annual interest to the subscribers' accounts as miscellaneous receipts as required under University Provident Fund Rules, 1976. Government in Agriculture Department had replied to the Committee on Public Accounts that the provident fund accumulations would be deposited into a personal deposit (PD) account and the Government would allow interest on the deposit at the same rate to be paid to the subscribers and hence, earning of excess interest would not arise. However, the University did not follow the above procedure even after opening (1990-91) a PD account. The University had accumulated Rs 75.37 lakh up to 1998-99 towards excess interest but did not take it as receipts. The amount was reduced to Rs 13.82 lakh as of 2005-06 due to non-crediting of the UPF subscription into interest earning deposits then and there.

Due to non-inclusion of the above amounts, there was an excess release of grant to the extent of Rs 9.55 crore during 2002-06.

3.5.9.3 Budgeting

Failure to obtain administrative sanction of Government for operating ICAR schemes (Partly financed)

Expenditure of Rs 11.46 crore on plan schemes was incurred during 2002-06 without consent of Government for continuance.

The University has undertaken various schemes, which are shared in the ratio of 75:25 between the ICAR and State Government during the IX Plan period. Though the State Government had not given its concurrence for continuance of these schemes during Tenth Plan period i.e., from 2002-03 onwards, the University continued to implement the schemes and booked the State Government share of expenditure under plan schemes funds of the State Government. An expenditure of Rs 11.46 crore was booked during 2002-06 on these schemes. This reflects the failure of the Director of Research to obtain sanction from Government and the Government's negligence in scrutinising the budget proposals of the University.

Irregular booking of non-plan expenditure under plan

Non-plan expenditure of Rs 26.23 crore was booked against funds available under plan schemes during 2003-06.

The University closed 89 plan schemes during 2003-04 and utilised the plan funds to meet non-plan expenditure of Rs 26.23 crore pertaining to the agricultural research stations and certain research schemes of the University during 2003-06. Provisions under plan schemes were made for these schemes during 2006-07 also. Plan funds are meant for developmental activities while non-plan funds are mainly meant for maintenance. Thus the University diverted plan funds to the extent of Rs 26.23 crore during 2003-06 on non-plan schemes.

3.5.9.4 Diversion

Minus balance in scheme accounts

As of August 2007, there was a minus balance of Rs 7.40 crore in 259 scheme accounts indicating diversion from other scheme funds to these schemes.

Financial powers are decentralised and there are 79 drawing officers in the University. The Comptroller of the University transfers the amounts received from the sponsors (ICAR, GOI, NATP, NARP, etc.) to the drawing officers as and when required. The funds were released to the drawing officers by the Comptroller in an adhoc manner without scheme wise breakup. As of August 2007, there was minus balance in 259 scheme accounts indicating excess expenditure of Rs 7.40 crore as indicated below:

(Rs in crore)

Name of the funding agency	Number of schemes	Excess expenditure
GOI	69	1.97
ICAR	69	2.03
Other agencies	121	3.40
Total	**259**	**7.40**

Out of the above, 73 schemes were not operated during 2004-05 and 2005-06. The University did not state the source from where funds were diverted to meet the excess expenditure.

3.5.9.5 Non-preparation of a manual streamlining procedures

The Finance Committee, while discussing (October 2006) an audit paragraph raised in Local Fund Audit on defalcation of University receipts by the staff of University, directed a thorough review of the defalcation cases and its submission before the Committee at the next meeting. However, this was not done during the next meeting held in March 2007. Though the University was established in as far back as 1971 and there are 79 drawing officers operating about 1,400 accounts, the University has not brought out a manual streamlining the procedures and fixing responsibilities. Similar defalcation cannot be ruled out as receipts and withdrawals amounting to Rs 7.62 lakh[12] pertaining to period 1972-2005 were not reconciled so far.

[12] Withdrawal of Rs 1.42 lakh by Dean (Agri.) during 1972 – June 2003; withdrawal of Rs 2.92 lakh by Dean (Horti.) prior to December 2003 and remittance of receipts by Dean (Agri.) in August 2005 – Rs 3.28 lakh. Total : Rs 7.62 lakh.

3.5.9.6 Accounting System

The Finance Committee recommended (September 2003) maintenance of accounts in double entry system and the University decided to implement the system from April 2004 onwards, however the switchover was not done as of May 2007. Due to non adoption of double entry system the reasons for the minus balance in 'Other Deposits' (Rs 4.61 crore) and the balance of Rs 8.54 crore in University Provident Fund Account (though no amount is due to subscribers) could not be ascertained. The TNAU Act, 1971 provided for preparation of balance sheet every year.

The deficiencies on budgeting procedure and claim for net grant, diversion of funds and accounting procedure discussed in the above sub paragraphs would indicate that financial management in the University was inadequate.

3.5.10 Conclusion

The amendment providing condonation of shortfall in attendance for taking up first semester examination for under-graduate courses would hamper the quality of education imparted. Out of 1,713 papers for which revaluation was sought for, there was change in number of marks scored in respect of 1,612 papers. The University did not also do well in the field of research as it did not introduce any successful hybrids during the last ten years. Further, it also failed to popularise new varieties. The University did not reckon certain items of receipts for the purpose of claiming grant resulting in excess release of grant. Excess expenditure of Rs 7.40 crore was incurred over and above the funds provided in respect of 259 schemes and the source from which funds were diverted was not divulged by the University.

3.5.11 Recommendations

- The valuation system should be revamped.
- The University should strive to develop and popularise new varieties, and improve its research and extension work.
- The procedure for claiming the grant should be streamlined so that all the receipts of the University are taken into account and there was no claim for excess grant.
- The University should refrain from utilising plan funds for non-plan expenditure and diverting funds from one scheme to other.

The above points were referred to Government in July 2007; reply had not been received (November 2007).

RURAL DEVELOPMENT AND PANCHAYAT RAJ DEPARTMENT

3.6 Member of Legislative Assembly Constituency Development Scheme

Highlights

Member of Legislative Assembly Constituency Development Scheme is being implemented in the State since 1997-98 with the aim of bridging the critical infrastructure gap in Assembly Constituencies. Perusal of connected records relating to the implementation of the scheme showed that a database of works required to be taken up in each district had not been compiled, unutilised funds released during 2002-04 had been retained even though no work was pending, Rs 30.75 crore were diverted to an unrelated scheme, works prohibited under the scheme were executed resulting in ineligible expenditure of Rs 23.80 crore and asset registers for the assets created under the scheme were not maintained.

3.6.1 Introduction

Member of Legislative Assembly Constituency Development Scheme (MLACDS) is a fully funded state scheme implemented in the State since 1997-98. The main objective of the scheme is to bridge the critical infrastructure gap in Assembly Constituencies. Under this scheme, each Member of Legislative Assembly (MLA) has to identify the works that are to be executed in his constituency. The fixed annual allocation per constituency was stepped up by Government from time to time since 1997-1998[1]. There are 235 MLAs in the state. Each MLA has to use the funds from this scheme within his constituency except for the lone nominated MLA who could use funds anywhere in the State.

3.6.2 Organisational set up

The Secretary, Rural Development Department and the Director of Rural Development and Panchayat Raj (DRDPR) are responsible for implementing and monitoring the scheme at Government and state level respectively. The District Rural Development Agency (DRDA) with the District Collector as Chairman is implementing the scheme at district level in all districts except Chennai, wherein the scheme is implemented by the Commissioner of Municipal Corporation of Chennai (COC). The scheme was implemented in districts through Panchayat Unions, Urban Local Bodies, Government

[1] 1997-98: Rs 25 lakh, 1998-99: Rs 35 lakh, 1999-2000: Rs 50 lakh, 2000-01: Rs 77 lakh, 2001-05: Rs 82 lakh, 2005-06: Rs 1 crore and 2006-07: Rs 1.20 crore.

departments like Public Works Department, Highways and Rural Works, etc., and Government undertakings[2].

3.6.3 Audit Coverage

A review of the implementation of the scheme relating to the period 2002-07 was conducted during March 2007 and April 2007 in the Rural Development Department in the Secretariat, office of DRDPR, three DRDAs[3], including six implementing agencies in these three sample districts and the Municipal Corporation of Chennai and its two zones[4]. Important points noticed during the review are given in the succeeding paragraphs.

3.6.4 Planning

Non-compilation of database of works, required to be executed immediately in each Constituency.

As the main objective of the scheme is to take up works to bridge the critical infrastructure gap in each constituency, it is essential to have a database on such gaps in each constituency/district, duly identified so as to enable to take up those on priority basis. However no such database was maintained at district/block level and this was also admitted by DRDAs in the sample districts and by the COC.

Further, Government had earmarked in the annual sanction order itself, a portion of the scheme funds to certain common priority works[5] to be executed in all constituencies. As the critical infrastructure gaps were different for each of the constituency, the earmarking of scheme funds for common works would not address the existing problem fully, as many constituencies may not require such common works. Incidentally audit also noticed that reports came, stating that some of the common works prioritised by Government could not be taken up, especially in urban areas, either due to non-requirement or due to other problems which necessitated in prescribing alternate works. Moreover, a uniform allocation to each constituency every year would also be construed as deficient in view of the magnitude and extent of the critical infrastructural gaps existing in different constituencies, which could be dealt only by allotting sufficient funds to the constituency, based on the needy works identified to be taken up immediately. This was found to have been followed for another state scheme "Decentralised District Planning (DDP)".

3.6.5 Financial and Physical Performance

Based on the annual sanction order of Government, DRDPR released the funds to the DRDAs and the COC. After the issue of administrative sanction, funds were released by DRDAs/COC to the executing agencies. The annual allocation of funds and the actual release along with financial and physical

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2 Tamil Nadu Adi Dravidar Housing and Development Corporation (TAHDCO), Metropolitan Transport Corporation (MTC), Tamil Nadu Water Supply and Drainage (TWAD) Board, Tamil Nadu Slum Clearance Board (TNSCB) etc.

3 Kancheepuram, Salem and Villuppuram .

4 Zone number 2 and 6.

5 Integrated Sanitary complexes for women, BC/MBC,SC/ST Students hostels, Water supply works, cement roads, Street lights etc.

achievement as compiled by DRDPR and submitted to Government under the scheme are given in **Appendix 3.25.**

Perusal of connected records revealed the following:

Belated release of funds during 2002-04

- Funds amounting to Rs 23.18 crore and Rs 48.17 crore related to 2002-03 were released to districts only in April 2003 and August 2003. 50 *per cent* of funds relating to 2003-04 were released only in February and March 2004.

Non-completion of all works within the year, though envisaged.

- Though Government prescribed, every year from 2002-03, that all works for each year be completed by the month of February, the works were continued to be executed in the succeeding years during 2003-07. The financial and physical achievement was low during 2003-06, the same was very poor during 2006-07, as shown below:

(in percentage)

	2003-04	2004-05	2005-06	2006-07
Financial	59	66	74	38
Physical	72	82	77	46

Retention of huge unutilised funds.

- Even as of March 2007, Rs 55.36 crore[6] related to the years 2002-03 to 2005-06 were lying unutilised with the districts. Though the DRDPR reported that no works relating to 2002-04 were pending, Rs 20.50 crore relating to this period were retained by the DRDAs in their accounts without justification. Further, despite the fact that 665 works (0.71 *per cent*) alone were pending out of 93,107 works taken up during 2004-06, Rs 34.86 crore relating to the period were retained as on 31 March 2007. No specific reasons were furnished by DRDPR for non-refunding the unutilised funds. The scheme guidelines did not specify, till June 2006, anything on unutilised funds except in the case of new MLAs taking over after the election, who had been permitted only to utilise the savings in the fund by sanctioning new works. The DRDPR, as the state monitoring agency, could have retained the funds required for completing the pending works and the remaining amount could have been refunded to Government. Finally, Government, while issuing (July 2006) the revised guidelines for the implementation of the scheme during 2006-07, decided that the MLAs can recommend new works, utilising funds of earlier years lying unutilised, due to non-recommendation of works or non-issue of administrative sanction for the recommended works. Action on this Government order is yet to be taken (June 2007).

Poor performance during 2006-07.

- Utilisation of funds in the state as a whole relating to the year 2006-07 as of March 2007 was poor with as much as Rs 173.82 crore out of Rs 282 crore lying unutilised. Out of 56,228 works taken during the year, only 25,916 works were completed and the remaining works are under progress.

Poor performance in Chennai District.

- The performance in Chennai district was poor, as Rs 16.94 crore (out of Rs 18 crore) related to 2006-07 were lying unutilised as of

[6] 2002-03; Rs 11.74 crore, 2003-04; Rs 8.76 Crore, 2004-05; Rs 20.82 crore and 2005-06; Rs 14.04 Crore.

March 2007. Most of the works relating to 2002-03 and 2003-04 were completed after a delay of about two years. Though no works were pending relating to 2002-04, Rs 5.36 crore relating to those years were retained by the COC without refunding it to Government. Five works relating to 2004-05 (Estimate: Rs 1.30 crore) were pending even after a lapse of two years of which four were under progress and tender was under finalisation for the remaining work. Fifty seven works relating to 2005-06 (Estimate: Rs 5.84 crore) were pending of which 37 works were under progress and tender was under finalisation for the remaining 20 works. None of the 122 works taken up during 2006-07 were completed (March 2007) and no specific reasons for the pendency were available.

- As obtained from the minutes of the monthly monitoring meetings conducted by DRDPR and the records produced in the sample districts, the slow progress of works is attributed to the delays in recommendation of works by MLAs, delays in according administrative sanction, delays in tender process, delays in execution of works and problems in selection of sites.

- DRDPR, being the state monitoring agency failed to keep track of funds lying unutilised since 1997-98 (year of commencement) and, consequently, failed to refund the balance amount to Government. This indicates lack of control. As funds released were shown as expenditure in Government accounts, the availability of huge unutilised funds clearly indicated that expenditure was inflated to the extent of the unutilised funds.

Failure to compile data of funds lying unutilised since 1997-98, the year of commencement.

3.6.6 Interest lying unutilised

Interest lying unutilised with Corporation of Chennai.

Though nothing was mentioned regarding the utilisation of interest in the MLACDS guidelines, DRDAs, as the district level facilitator-cum-monitoring authority, should have ascertained the quantum of interest accrued. Since a fixed amount was earmarked for each constituency and the interest accrued was over and above the amount, it should have been credited to Government account.

The Commissioner, Corporation of Chennai requested (December 2005) Government for instructions for apportioning the interest to each of the constituencies. As no reply was received from Government (April 2007), Rs 4.73 crore accrued as interest from 1998-99 onwards was lying unutilised. No interest was earned in Villupuram and Salem districts as funds were kept in the District Treasury and in respect of Kancheepuram, details were not made available (March 2007).

3.6.7 Diversion of funds

Diversion of scheme funds to a specific scheme.

Based on orders (October 2004) issued by Government Rs 30.75 crore[7] was transferred from MLACDS funds during 2004-05 and utilised for a new scheme "Namadhu Gramam" which was fully funded by Government. As the objective of the scheme "Namadhu Grammam" was development of education, health etc., in villages and works under the scheme were to be identified by the Gram Sabhas concerned, the scheme was entirely different

[7] at the rate of Rs 15 lakh per constituency from 205 rural constituencies.

from MLACDS. Such dovetailing of MLACDS fund to Namadhu Gramam Scheme was irregular and resulted in diversion of funds.

3.6.8 Violation of guidelines

3.6.8.1 Execution of prohibited works under the scheme

Taking up of prohibited works costing Rs 23.80 crore under the scheme.

Scheme guidelines prohibit the execution of certain works like construction of office/residential buildings for Central/State Government departments, Government organisations, Public Sector Undertakings/agencies, private/ co-operative/commercial organisations, bus shelters and road side concrete drains besides repairs and maintenance works and purchase of materials for stock.

However during 2002-06, 364 prohibited works[8] were taken up and executed under the scheme in the four sample districts incurring expenditure of Rs 15.33 crore (**Appendix 3.26**). Further 55 such works at an estimated cost of Rs 1.49 crore, are under progress in Chennai, Salem and Villupuram Districts.

Further Government ordered (May 2005) repairs to group houses constructed prior to 1991, and allocated Rs 25 lakh from MLACDS fund for each constituency for this purpose. As expenditure on assets benefiting individuals was prohibited under the scheme, this was a violation of the guidelines of the scheme. In three test checked districts[9] 8,879 group houses had been repaired at an expenditure of Rs 8.47 crore during 2005-06.

3.6.8.2 Works executed in different constituencies

Scheme guidelines envisage the taking up of works under the scheme on the recommendation of the MLAs in their assembly constituency. However in two sample districts (Chennai and Salem), three works (Cost: Rs 43 lakh) were executed in the assembly constituencies viz., Royapuram(1), and Salem II(2) during 2002-03 and 2005-06, based on the recommendation of the MLA representing different constituencies viz., Harbour and Salem I respectively.

3.6.9 Non-maintenance of Asset Register

Asset register not maintained.

The assets created under the scheme were to be handed over to the concerned local bodies in whose area the assets were created. As per the accounting procedure of DRDAs (amended in 2001), the DRDAs and blocks, being the sanctioning authorities and grantee institutions, respectively, should maintain a register of the permanent and semi-permanent assets (database of assets) created wholly and partly out of Government grants in respect of each scheme separately. Tamil Nadu Financial Code also prescribed the maintenance of an asset register for the assets created out of scheme funds. However, three sample DRDAs, COC and eight implementing agencies of four sample

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[8] Provision of drainage, desilting of water bodies, repairs to Tamil Nadu Slum Clearance Board tenements, construction of Bus Terminus for Metropolitan Transport Corporation, Milk producers co-operative Society buildings, PDS outlet, Library buildings, hospital buildings etc.

[9] Kancheepuram : 2026 works costing Rs 183.65 lakh
Villupuram : 4111 works costing Rs 390.01 lakh
and Salem : 2742 works costing Rs 273.63 lakh.

districts admitted that no such asset register was maintained. In the absence of asset registers, DRDAs/local bodies could not ensure whether there was any duplication of works.

3.6.10 Non-furnishing of Utilisation Certificates

Utilisation certificates not furnished since 2004-05.

Though Government prescribed from 2002-03 onwards that a utilisation certificate (UC) for MLACDS for each year be furnished by DRDAs through DRDPR to Government by 31 March, the DRDPR had not furnished the UCs for the last three years 2004-07. The COC had not furnished the UCs for the last six years viz., 2001-02 to 2006-07.

3.6.11 Non-conducting of evaluation

Despite the scheme having been implemented from 1997-98 onwards and a large investment of about Rs 1727 crore made to date, no evaluation was done either by a Government agency or by an outside agency. As a result, the impact of the scheme in bridging the critical infrastructure gaps could not be assessed.

3.6.12 Conclusion

The scheme, aimed to bridge the critical infrastructure gaps in the Assembly constituencies, was implemented in the State since 1997-98 without maintaining a database of such gaps to be filled constituency wise. The physical performance under the scheme was poor during 2003-06 and very poor during 2006-07. Rupees 229.18 crore were lying unutilised under the scheme as on 31 March 2007 and action on a specific Government order for utilising this amount issued in July 2006 is yet to be taken. Details of interest accrued on the funds of the scheme were not compiled by DRDPR and no decision was taken by Government towards the utilisation of the interest accrued. Rupees 30.75 crore were diverted during 2004-05 to a state funded scheme while expenditure of Rs 15.33 crore was incurred on 364 prohibited works and Rs 8.47 crore on repair of group houses, in violation of guidelines. No asset register was maintained in all the four sample districts.

3.6.13 Recommendations

- The critical infrastructural gaps to be filled in each constituency should be short listed on priority basis and should be taken up under the scheme in the coming years.
- Funds lying unutilised have to be refunded to Government or to be utilised, if required, as per latest Government order issued in July 2006.
- Total interest amount so far accrued under the scheme since 1997-98 should be compiled and credited to Government account immediately.
- Prohibited works should not be taken up under the scheme.
- Directions have to be issued immediately to maintain an asset register in each local body, indicating the details of assets created under the scheme.

The above points were referred to Government in July 2007; reply had not been received (November 2007).

AGRICULTURE DEPARTMENT

3.7 Ineffective computerisation in Agriculture Department

Highlights

- **Computerised systems like the 'File Monitoring System' and 'Personnel Information System' were discontinued due to lack of a long term IT plan.**

(Paragraph 3.7.8.1)

- **The District Offices did not have enough manpower to gather 1,300 items of data each week for the computerised Monday Message Monitoring System.**

(Paragraph 3.7.8.2)

- **Failure to follow programming life cycle resulted in deficient and erroneous application software being implemented. Errors in the application software remained uncorrected for more than two years.**

(Paragraph 3.7.9.1)

- **Due to defective system design, several items of information that were already available in the system were captured repeatedly resulting in errors.**

(Paragraph 3.7.9.3)

- **Of the 13 output statements of the MMMS, 10 statements printed with unauthenticated corrections.**

(Paragraph 3.7.10.2)

- **An amount of Rs 3.02 crore released by GOI in May 2006 for AGRISNET scheme remained unutilised and is transferred to a Personal Deposit Account.**

(Paragraph 3.7.12.1)

3.7.1 Introduction

The objective of the Department is to increase agricultural productivity through optimum utilisation of available land and water and by giving quality inputs, latest appropriate technology and other assistance to farmers. The Department was to ensure the supply of quality seeds, crop nutrients,

pesticides etc., and educate the farmers on crop diversification, market-driven crop cultivation, pest management, water management etc. The Department plays such advisory/support role, based on the computer data collected through the District offices. The overall financial outlay of the Department (2006-07) was Rs 978 crore.

3.7.2 The computerisation

Apart from minor functions like Payroll, File Monitoring and Personal Information System, the major function computerised is called the Monday Message Monitoring System (MMMS). Information on crop coverage, rainfall, availability of surface water, seeds, fertilizers, pesticides, etc., was captured in the computer system. Data is fed by the district offices on a weekly basis, using a web-based application developed by National Informatics Centre (NIC), Chennai and stored in a central server at NIC Chennai in a SQL database. Standard reports are generated by the Commissionerate from the data on a weekly basis, which form the input for the Department to carry out its basic functions and for the information of the State Government and the Government of India.

3.7.3 Scope of audit

As the payroll function was confined to head office alone and file monitoring and personnel information systems were not in a full functional use, it was decided to concentrate on the computerised MMMS, which was in line with the overall functional objective of the Department. Data from October 2004, the date of inception of computerisation, to March 2007, the commencement of audit, was taken up for examination.

3.7.4 Audit objectives

As MMMS had a direct bearing on the functional activity of the Department, a check of the correctness of data gathered at the field offices, followed by the correctness and completeness of data captured and reports generated therefrom, were to form the main objectives of the review. Thus the objective of audit was to check whether

- computerisation was in line with the objectives of the Department,
- district units which were responsible for the feeding in of data, had a definite methodology for collecting information on a weekly basis,
- data fed in at the districts was correct and complete,
- the information in the database was reliable, and,
- the reports generated were correct and utilised for the pursuance of the Department's objectives.

3.7.5 Audit criteria

The audit criteria adopted were to check the

- data for its completeness against the number of districts and the number of entries required there from on a weekly basis,

- data for its correctness with reference to their logical range and reference to other existing data,
- correctness of the data fed to the system against the original source documents,
- data with similar data available with other departments like the Public Works Department and the Meteorological Department,
- application programs for the adequacy of controls, and,
- outputs of the system for their correctness and utility value.

3.7.6 Audit methodology

The audit commenced with an entry conference with the head of the Department followed by a scrutiny of files relating to computerisation at the Directorate. Three district offices[1] were visited to study the systems and procedures prevailing for capture of data in the computer system. A questionnaire was circulated to all the 28 district offices to ascertain the procedures followed in the collection/capture of data and the constraints faced. The data available in the NIC server was obtained as an MS Access database and examined using CAATs for its adequacy and reliability. The provisions and controls available in the application software were ascertained through an examination of the data entry screens.

3.7.7 General controls

General controls relate to the environment within which the development and implementation of the IT Systems are carried out. Objective of the controls are to ensure that IT Systems are developed, implemented and maintained effectively. An assessment of these controls indicated deficiencies as brought out hereunder.

3.7.8 Organisation and management controls

3.7.8.1 IT policy

For want of an IT Policy software that were already implemented were discontinued.

Though the Department had started using computers commencing from 1994, it does not have an IT policy. Even after 14 years since the commencement of computerisation, the Department does not have a long term IT Plan encompassing a comprehensive strategy for computerising all the functions of the Department. Systems like the 'File Monitoring System' introduced in August 2004 and the 'Personnel Information System' introduced in April 2005 are not in operation (March 2007) rendering the efforts put in, unproductive. Central funds intended for computerisation remained unutilised as detailed in paragraph 3.7.12.1 of this Report. As the Department undertook computerisation with a view to achieve its objectives and is dependent on the same for its functional activities, it was imperative for it to have an IT policy.

[1] Thiruvallore, Kancheepuram and Vellore.

3.7.8.2 Feasibility of computerisation of MMMS

It was not feasible to gather all the 1,300 items of information required for MMMS each week due to manpower

For the purpose of MMMS, data to the end of each Friday was to be posted in the computer system by the subsequent Monday. Each district office did not have required machinery to collect and post a minimum of 1,300 items of information through 21 data entry screens each week. To cite a few examples, data on stock position of fertilizers had to be obtained from over 12,800 stockists in the State on a weekly basis, which proved impossible. Further, the inability to obtain rainfall information from 480 different rain gauging stations each week left the related information 45.36 *per cent* (27,868 items out of a total of 61,440) incomplete. Only three to five Agricultural Officers were available for the task in each district and were to carryout the task of collection and feeding in of the data into the system in addition to their regular duties.

Information on 'area coverage under different crops' was available from the Revenue Department and 'water storage position in tanks and reservoirs' from the PWD and 'fertiliser stock position' from its dealers only on a monthly basis. Hence, in respect of these items, the district offices fed only estimated data week after week.

Feasibility of gathering actual data for posting to the computer system for a week on the last day of the same week and the methodology there for was not considered and factored in, when the computerised MMMS was initiated.

3.7.8.3 Business continuity planning

The data is under the control of NIC and the users do not have any service level agreement with NIC even for the purpose of business continuity.

Though the software was developed by NIC and implemented in October 2004, the data and the source code are still under the custody of NIC. The owners of the data, the Agriculture Department, do not have any service level agreement with the former to ensure the confidentiality of the data, its security and availability. In the absence of such provisions, the users did not have an absolute control over their data and the business continuity of the MMMS package was thus, not ensured.

3.7.9 System development controls

3.7.9.1 Programming life cycle not followed

The web based application for the MMMS had not gone through the regular process of a system development life cycle. No user requirement specification had been drawn up and put on record. The developer had been allowed to develop the required software without a systematic study of the requirement, resulting in the eventual application being erroneous and deficient on several counts.

The Department had implemented MMMS without any acceptance testing. As a result, the software in use was deficient and erroneous in design and logic and lacked controls. After using it for over 32 months (October 2004 to May 2007), the application still contained the deficiencies and errors that existed when it was taken over by the Department. No effort had been made at any stage for either improving the software or incorporating necessary corrections.

3.7.9.2 Defective system design – vital information ignored in MMMS

The computerised MMMS has been evolved to improve agricultural productivity using the technical capability of the department. However no provision has been made to hold data in respect of the following critical areas.

- Quantum of the total production of different agricultural products which is one of the factors to gauge the performance of the Department and the agricultural community,
- Though the Department has to advise agriculturists on pest control, no effort has been made to store data relating to various types of pest attacks on different crops, remedial action taken, etc., and,
- Six statements forming part of MMMS relating to 'Area under Paddy in the Cauvery Delta' could not be generated through the computerized MMMS, as the system did not provide for the storage of relevant information.

In the absence of such information, the Department resorted either to keep such information out of their MMMS or supplement the same manually.

3.7.9.3 Defective system design - capture of information already available

Due to faulty design of MMMS, data already available in the system and data that could be calculated were unnecessarily fed to the system giving room for errors.

The computerised MMMS provided for capture of some data/ information that was either already available or that could be derived from the data already available. Some specific instances and the resultant effects thereof are brought out hereunder.

- Area covered by each crop during the previous year was fed in again, despite the availability of the information in the database. This resulted in 330 errors in a test check of two years' data containing 804 records,
- Values for both 'weekly rainfall' and 'cumulative rainfall up to the end of the week' are required to be fed in independently,
- Permanent data like 'capacity of a reservoir' and 'annual physical target in respect of different schemes' are required to be fed in each week,
- The current storage position and the corresponding position of the previous year for all reservoirs were to be fed in each week, despite the availability of the information in the database. A test check of 1910 records relating to the year 2006 disclosed errors in 637 records,
- The current area under paddy was compared with the normal area under paddy in respect of each district. The normal area which was constant for the whole year was fed in every week resulting in 927 instances where the data was incorrectly fed in,

- The closing stock position of fertilizers of a week was required to be fed in again as the opening balance of the subsequent week instead of automatic carry over by the system, which could avoid errors, and,
- Instead of data entry of expenditure during the week alone and allowing system to deriving the other parameters such as expenditure up to the previous week, up to the end of the current week, the percentage of expenditure relating to schemes, such information were manually fed into the system resulting in:
  - 1,333 instances where the expenditure at the end of the current week was greater than the expenditure up to the end of the previous week plus expenditure during the week,
  - 1,045 instances where the expenditure at the end of the current week was less than the expenditure up to the end of the previous week plus the expenditure during the week, and,
  - 656 cases where the expenditure at the end of the current week was less than the expenditure up to the end of the previous week.

Inefficient system design requiring unnecessary/repeated data entry resulted in errors apart from wastage of time and manpower.

3.7.9.4 Inadequate database design

The design of the database was inadequate for meeting departmental requirements.

The database design in MMMS was inadequate to meet the departmental objectives and had inconsistencies as brought out hereunder:

- The Department monitors the targets relating to the cultivation area under paddy separately for the Kharif and Rabi seasons. Though the system was designed to capture the respective targets separately, it did not have provision to capture the achievements separately. This required manual intervention to split the consolidated achievement fed in for reporting purpose.
- The stock position of pesticides were to be captured under two categories namely 'Dust' and 'Liquid' under the caption 'Plant Protection Chemicals'. The database however was designed to accept values for three entities including the caption without the necessary relational constraint. Data was fed in under all the three headings rendering the related figures incorrect.

3.7.9.5 Post-installation evaluation and feedback

For want of post-installation evaluation and feed back, errors in the system remained uncorrected for more than two years.

The computerised MMMS did not undergo any post installation evaluation and there was no provision for obtaining any feedback on its functions with a view to enable rectification of errors in the system. As a result the software had deficiencies as brought out hereunder which remain uncorrected even after two years of functioning.

(a) The Department had to maintain supply of fertilizers and pesticides by ensuring adequate production and a comfortable stock position. For this purpose, the Department forecast the requirement of different fertilizers for a

month to ensure their production/supply. The estimation however was grossly off the mark, considering the actual consumption during the period.

(b) In order to monitor the productivity of paddy per unit area, the Department declared certain agricultural fields as experimental fields in each district and studied the maximum, minimum and average quantum of yield per hectare. For this purpose, each district fed weekly data on the maximum, minimum and average yields from amongst the experimental fields to the MMMS. However, due to faulty design, the system furnished the sum total of the maximum yields in all the districts as the maximum yield in the state and followed a similar logic for assessing the minimum and average yields as well.

For want of a post-installation evaluation and feedback, these errors in the software remained undetected and no efforts were taken by the Department to get these basic errors and deficiencies corrected in the software.

3.7.9.6 Documentation

No documents detailing the objective of the computerised MMMS, its coverage, procedures to be followed, benefits anticipated there from, etc., were available and produced to audit. Despite having a vast number of users across the districts, no user manual or instructions were available for their guidance.

3.7.9.7 Training

In each district, the Agricultural Officers were in charge of the collection and feeding of data in the system. However, these officials were not given any training on the usage of the application software and the type of data to be fed in. Lack of training resulted in

- some districts fed data pertaining to current week while others fed cumulative data;
- different districts using different units during data entry, like some districts fed the price of paddy seeds on per kilogram while some others fed the price on per ton basis; some districts fed the area in 'lakh hectares' while others fed the same in hectares';
- Some districts did not feed in all the data required.

This non uniformity made the data unreliable. The absence of a user manual further compounded the errors in the data entry.

3.7.10 Application controls

3.7.10.1 Input controls and Validation checks

The computerised MMMS did not have sufficient input controls and validation checks to ensure completeness of data fed into the system and correctness of data against existing data as illustrated hereunder

- The Department kept track of the water storage position for around 35,000 tanks and 48 reservoirs. The number of tanks for which the storage position was reported, varied week after week indicating that the data was incomplete

- Provision was created for the capture of data on Control of Eriophyid Mite in Coconut, subsidized and non-subsidized biocides, production of Jatropha, Sweet Sorgum and Sugar Beet. But no data entry was done in respect of these items.

- With regard to monitoring of the progress of schemes, several districts did not enter data relating to physical achievements in intervening weeks.

- Figures relating to area under paddy cultivation not falling within the logical range were fed into the system. For example, the area under paddy was fed in as 15,198 lakh hectares against a target of only 21.70 lakh hectares.

- In 39 instances, the storage position of water in reservoirs was fed as more than their total capacity already available in the database.

- A select number of fertilizer samples were sent for analysis and the results of the same were watched through MMMS. However, as per the data base, in 835 instances, the samples analysed and results obtained were more than the samples taken for analysis.

3.7.10.2 Output control - incorrect reporting

For want of output controls the eventual outputs of the system contained errors and the correction made contained un-authentic figures.

The ultimate output of the MMMS is a set of 13 major reports generated by the system, which are used in making policy decisions at the Directorate and also for communication to the other apex bodies in the Government. Despite the same being the ultimate output of a series of processes involving people from all districts, the system-generated outputs were largely undependable.

Out of 13 MIS reports, in 10 reports manual corrections were carried out in the output. As these corrections required almost the same quantum of input as originally required for and in the absence of necessary mechanism to obtain such input in the Directorate, the corrections were made with unauthentic figures. Thus, the eventual output of the system had been allowed to remain with errors or presented with a set of assumed figures.

3.7.11 Reliability of Data

A test check disclosed that the figures available in the MMIS were different from figures of the Meteorology Department which keeps the data relating to quantum of rainfall received. Similarly, in 265 instances, the storage position of reservoirs furnished under MMMS did not agree with similar data maintained in the Public Works Department.

3.7.12 Other points of interest

Rupees 3.02 crore released by the GOI for implementation of AGRISNET scheme remained unutilised for 16 months and stands transferred to a PD account.

3.7.12.1 Non-utilisation of government funds for computerisation

The Department of Agriculture, had requested the Government of India for the sanction of Rs 40.60 crore for implementation of the AGRISNET scheme designed to supply computers, application software etc., to the Block/Taluk level officers of the Department, for the benefit of the farming community. Government of India sanctioned a sum of Rs 8.31 crore (March 2006) for the scheme as a whole and Rs 3.02 crore towards the first installment. They placed at the disposal of the Government of Tamil Nadu an amount of Rs 1.32 crore (March 2006) and Rs 1.70 crore (May 2006). The total amount of Rs.3.02 crore was made available to the Department in October 2006. The first phase of the project was to be completed in 12 months commencing from March 2006.

While there was a delay of over five months in the release of the Government of India Funds by the Government of Tamil Nadu, no action was initiated towards implementation of the Scheme by the Department even after seven months of the release of the fund. The amount had thus remained locked up with the Government of the state for five months and the Department for another seven months and none of the contemplated benefits either to the department or the farming community had accrued. With a view to avoid lapse of the fund, it had been drawn (March 2007) and placed as a Personal Deposit outside Government Account violating financial regulations.

3.7.12.2 Incomplete development of Website

The Government sanctioned (May 2005), Rs 5 lakh for the development of a web site for agriculture information, accessible by agriculturists using equipment available with RASI (Rural Access to Services through Internet) project implemented by Department of Rural Development. The site was to include static pages like Policy Note, Crop Production Guide, Agriculture Strategy Plan, etc., and dynamic pages on 84 subjects like Weekly Reporting System, Monitoring and concurrent evaluation, Season-wise crops, etc. The contract for development of the website was awarded (February 2006) to "Messrs Maruthi Computers Private Limited" at a cost of Rs 5 lakh through a limited tender.

The company had developed only the static pages of the site. However, despite the incompleteness, the Department had paid the full amount, intended for a complete development. The facility of the Agriculturists accessing the site through RASI had also not been made available till date (June 2007). The website as on date contains only static information open to the public. Thus, due to faulty planning and execution by the Department, the intended benefit to the agriculturists had not accrued despite an expenditure or Rs 5 lakh.

3.7.13 Conclusion

Though computerisation in the Department had commenced in 1994, there exists no long-term strategic IT plan aimed at achieving their functional

objectives. Computerisation of the MMMS commenced in October 2004 without a feasibility study and without going through the full course of a System Development Life Cycle. At the districts, there existed no mechanism for timely collection of all the required data. The NIC developed software was deficient and required feeding several items of either already available data or derived data, which combined with the lack of input and validation controls, resulted in a deficient and un-reliable database. Despite more than two years of usage, the owners of the data did not at any stage attempt to have the defective programs or the deficient database rectified. Corrections were done only on the outputs leaving the database erroneous. The final output of the MMMS containing erroneous and modified figures on a large scale is authenticated by the Director and communicated to the Government of India, the Government of Tamil Nadu and many other high offices.

Thus, the computerised MMMS, after incurring an expenditure of Rs.1.99 crore on hardware, involving a vast number of departmental staff and being in a functional state for over two years had not been able to provide the right information to the Department and the policy makers alike. An amount of Rs 3.02 crore released by the Government of India for computerization remained unutilised for over a year. The Department while accepting all the observations of audit conveyed their decision to revamp the entire MMMS and make it dependable.

3.7.14 Recommendations

- As computerisation is critical to the departmental functions, the department should frame a long term IT plan as a part of IT Strategy and the corresponding component-wise computerisation with a time frame.

- The district units responsible for the collection and feeding in of the data should be provided with adequate mechanism for the gathering of the weekly data and their reliability leaving no room for assumptions.

- The deficiencies in the program may be taken up with NIC who had developed the software

- The completeness of the data and its correctness should be checked through the provision of adequate input controls at the data entry stage and appropriate validation controls.

- Any modifications or additions should be allowed only through the system under appropriate authentication and authorisation, rather than on the output already generated through the system.

The above points were referred to Government in June 2007; reply had not been received (November 2007).