CHAPTER III

PERFORMANCE REVIEWS

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This chapter presents seven Performance Reviews (including two information technology reviews). The Performance Reviews include reviews on Chennai Waterways Project, Functioning of Horticulture and Plantation Crops Directorate, Tsunami Relief, Rehabilitation and Reconstruction, Sarva Shiksha Abhiyan and Conservation of flagship species - Tiger. The information technology reviews are on Deficiencies in the implementation of the Well Census Project and Ineffective computerisation in Police Department.

ENVIRONMENT AND FORESTS, HOUSING AND URBAN DEVELOPMENT, MUNICIPAL ADMINISTRATION AND WATER SUPPLY AND PUBLIC WORKS DEPARTMENTS

3.1 Chennai Waterways Project

Highlights

The Project aimed at alleviation of flood and abatement of water pollution in Chennai city by increasing the carrying capacity, resettlement of families living on the banks and prevention of pollution of the waterways. Many works essential for achieving the twin objectives were not included in the Project and all flood defence works included in the Project were not sanctioned for execution. Poor coordination between various implementing agencies delayed the execution of flood defence works and sewage continues to pollute the waterways even after completion of the sewerage improvement works contemplated in the Project. Consequently, the Project was a failure even after execution for seven years and an expenditure of Rs 621 crore.

- **Essential flood defence works and all sewerage improvement works recommended by the consultant were not included in the Project.**

(Paragraph 3.1.6)

- **Rupees 3.48 crore was diverted to execute works not included in the Project. Undue benefit of Rs 34.84 lakh was allowed to the contractor on payment of inadmissible advance.**

(Paragraphs 3.1.7.2 and 3.1.7.3)

- **Essential works were not taken up resulting in inundation during floods and pollution of waterways and consequential additional expenditure of Rs 2.79 crore.**

(Paragraphs 3.1.8.2 and 3.1.8.4)

- **Unnecessary purchase of new pump sets as standby and non-adoption of latest Indian Standard specification resulted in extra expenditure of Rs 5.98 crore.**

(Paragraphs 3.1.8.5 and 3.1.8.6)

- **Expenditure of Rs 15.95 crore on flood defence works remained unfruitful due to failure to foreclose the agreement despite slow progress of work by the contractor, non-resettlement of 2,576 slum families living on the banks of Cooum river and non-construction of retaining wall.**

(Paragraphs 3.1.9.1 to 3.1.9.3)

- **Delay in handing over of site, failure to consider the alignment suggested by the Highways Department in laying the sewage main and unnecessary provision of standby transformers and gas engine resulted in avoidable expenditure of Rs 12.43 crore and wasteful expenditure of Rs 48.73 lakh.**

(Paragraphs 3.1.9.5 and 3.1.9.6)

- **The Project did not achieve its objective even after seven years of execution due to poor coordination and monitoring.**

(Paragraphs 3.1.10.1 and 3.1.10.2)

3.1.1 Introduction

The carrying capacity of 10 waterways[1] of Chennai city was severely reduced due to (a) silting, (b) formation of sand bars in the river mouths, and, (c) encroachment by slum families leading to floods during rains. Besides, the waterways were polluted by the discharge of untreated sewage and solid wastes thereby causing environmental and health hazards to the public. With the dual objectives of alleviation of flood and abatement of pollution, Government of Tamil Nadu (GTN) formulated (December 1999) the Chennai Waterways Project (Project) by integrating the schemes of improving the waterways and drainage system of the city already sanctioned in August 1998. A map of Chennai city waterways is depicted in Figure 1.

[1] Cooum river, Adyar river, North Buckingham canal, Central Buckingham canal, South Buckingham canal, Otteri Nullah, Captain Cotton canal, Mambalam drain, Kodungaiyur drain and Virugambakkam-Arumbakkam drain.

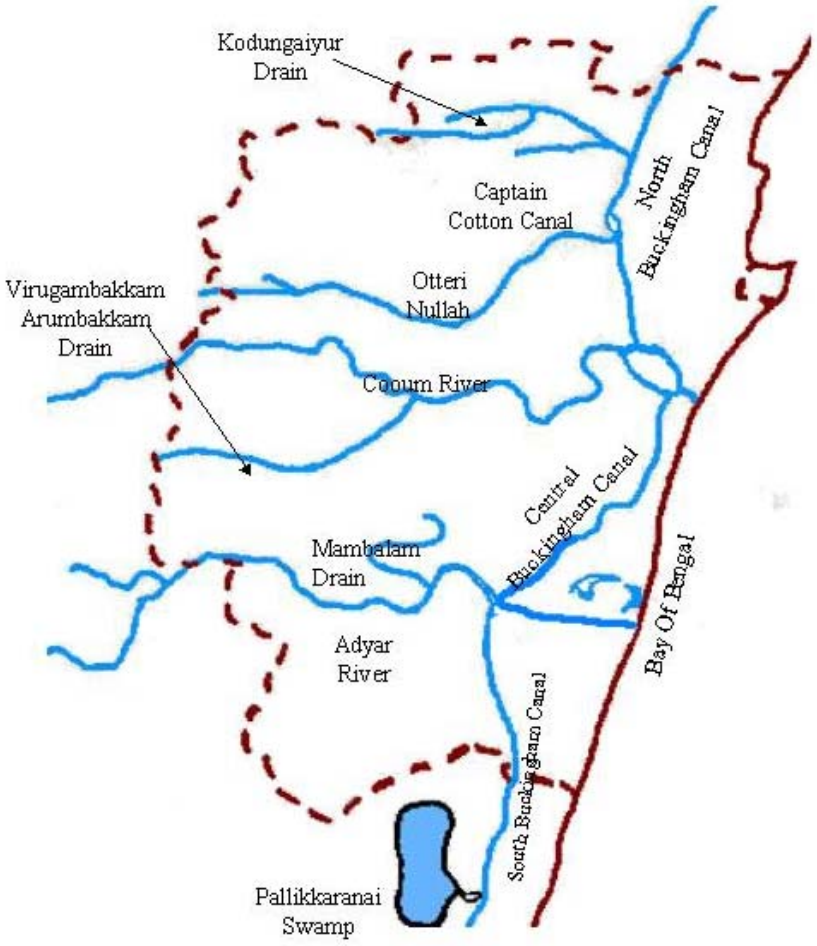

Figure 1: Chennai city waterways

The Project has the following five components to be implemented by five agencies:

Serial number	Component	Cost (Rupees in crore)	Implementing agency
	Flood alleviation works		
1.	Macro Drainage Works (Flood defence works like resectioning and desilting the waterways and construction of retaining walls)	236.90	Public Works Department (PWD)
2.	Micro Drainage Works (improving the storm water drainage facility in the city)	109.25	Chennai Corporation (CC)
3.	Resettlement of slum families (construction of tenements for resettling 33,313 slum families living on the banks of waterways)	613.50	Tamil Nadu Slum Clearance Board (TNSCB)

Serial number	Component	Cost (Rupees in crore)	Implementing agency
	Works for abatement of pollution		
4.	Sewerage Improvement Works (intercepting and diverting the untreated sewage to treatment plants and increasing the capacity of treatment plants)	720.15	Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB)
	Monitoring		
5.	Project Management (Monitoring and non-structural measures)	20.20	Chennai Metropolitan Development Authority (CMDA)
	Total	**1700.00**	

Government of India (GOI) sanctioned (September 2000) Rs 491.52 crore for sewerage improvement works (item 4 of table above) under National River Conservation Project (NRCP) with a stipulation that GTN should provide funds for other components and complete the Project by September 2003. Flood alleviation works taken up from April 1999 were not completed as of March 2006. The works on 'Abatement of pollution' taken up from January 2001 were completed in March 2006.

The total cost of all the components of the Project was reduced from Rs 1700 crore to Rs 1200 crore by the State Government by revising the target for resettling 33,313 slum families to 8,164 slum families. The remaining slum families were proposed to be provided with sanitary facilities to prevent pollution of waterways. The implementing agencies spent Rs 621.41 crore as of March 2006. The works contemplated in the Project and their stage of execution along with amount spent are given in **Appendix XVIII**.

3.1.2 Organisational set up

The various sub-projects/components were executed by PWD, CC, TNSCB, CMWSSB and CMDA.

The works in PWD were executed by three Executive Engineers (EEs)[2], supervised by Superintending Engineer (SE), Palar Basin circle and monitored by the Chief Engineer (CE), Chennai Region. In CC, the works were executed by three EEs of Storm Water Drainage Department supervised by one SE and monitored by the CE under the administrative control of the Commissioner. The functions of CMWSSB, a statutory body of GTN, were guided by the Board of Directors. The Managing Director (MD) was the executive head and

[2] Araniyar Basin division, Kosathalayar Basin division and Lower Palar Basin division.

the Project works were executed by one CE, three SEs and five EEs[3] with supporting staff. The works in TNSCB, another statutory body, were executed by two EEs[4], one SE and one CE. The MD monitored the works under the guidance of the Board of Directors. The Project as a whole was monitored by CMDA till August 2002 and thereafter by the Environment Management Agency of Tamil Nadu (EMAT). The High level Monitoring Committee headed by the Chief Secretary of the State was constituted (December 2001) for monitoring the works under NRCP as well as the overall progress of the works under the Project.

3.1.3 Audit objectives

Performance Audit was conducted to assess whether

- the works under the Project were holistically conceived,
- adequate funds were provided and spent on the Project activities,
- there was proper planning and appropriate standard specifications were adopted in designs,
- the Project was executed effectively and economically in coordination with other implementing agencies and
- the Project was monitored effectively and properly evaluated.

3.1.4 Audit criteria

The following criteria were adopted to assess the extent of achievement of the objectives of the Project:

- Master Plans prepared from time to time for flood alleviation in Chennai Metropolitan Area[5] (CMA),
- Consultant report on sewerage improvement in Chennai city,
- Guidelines issued by National River Conservation Directorate of GOI,
- Indian standard specifications and
- Instructions issued by GTN, PWD, CMWSSB, CC and TNSCB for execution of various items of work.

3.1.5 Audit methodology and coverage

The records relating to execution of the Project were test checked for the period 1999-2006 at the offices of the implementing/monitoring agencies. Besides, the records relating to monitoring of quality of water by Anna University and Tamil Nadu Pollution Control Board (TNPCB) were also

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3 CE (Chennai City River Conservation Project); SE (Chennai City River Conservation Project); SE (Sewage Treatment Plant); SE (Construction and Sewerage); EE (I to V of Chennai City River Conservation Project).

4 EE (Flood Alleviation Division), EE (Division II).

5 Covers 1,177 square kilometre with a population of about 70.41 lakh and includes Chennai city and 16 Municipalities, 20 Town Panchayats and 10 Panchayat Unions having 214 villages.

scrutinised. Audit was carried out by preparing audit guidelines, gathering and analysing relevant statistical data and related specifications, undertaking site inspections and conducting discussions with officials of implementing and monitoring agencies. Entry conferences were held with heads of implementing agencies in March 2006. Exit conference was held (July 2006) with the Secretaries concerned and their views were considered while finalising the review.

Audit findings

3.1.6 Formulation of the Project

The Project Report was prepared by CMDA (December 1999) based on the master plan prepared for flood alleviation in CMA and a study on sewerage improvement conducted by CMWSSB through a consultant. It was observed that the following works which were essential to achieve the objective were not included in the Project.

3.1.6.1 Restoration of storage capacity of tanks in CMA

Works to improve the capacity of tanks in CMA were not considered.

Though the Project covered flood alleviation works in areas under local bodies of CMA, it did not contemplate restoration of the storage capacity of 525 irrigation tanks, which when full, flood the Cooum and Adyar rivers. Test check of records of 60 tanks indicated that the storage capacity of these tanks were reduced by 40 *per cent* due to encroachment of water spread area of the tanks. Restoration of the capacity of these tanks would have reduced flooding of these two rivers. In November 2005, the rivers were flooded and 25.77 thousand million cubic feet of water were discharged into the sea.

3.1.6.2 Draining water from Pallikaranai swamp

The Pallikaranai swamp receives water from the surplus of 31 tanks and the capacity of the swamp was reduced by half (from 251 mcft to 126 mcft) due to allotment of swamp land to Government and private agencies. The water from the swamp drains into South Buckingham Canal and travels 13 km before reaching sea. Consequently, the water from the swamp drained slowly resulting in the flood water inundating the adjoining residential areas during flood. No specific work to drain water quickly from the swamp was included in the Project. Consequently, there were inundation during 2002 and 2005 floods. The PWD proposed (December 2005) a short cut drainage arrangement from the South Buckingham Canal to sea to drain water from the swamp quickly but the work was not sanctioned by Government as of March 2006.

3.1.6.3 Increasing the carrying capacity of Buckingham Canal

The report on flood alleviation prepared by CMDA in 1980 indicated that the North Buckingham Canal received flood water from three other waterways in Chennai city besides its own catchment and hence required a carrying capacity to drain 12,900 cusecs of water. The master plan though, based on which the Project was sanctioned, provided for a carrying capacity of 1,200 cusecs only.

While taking up the work, PWD provided drainage arrangement for 1,500 cusecs in the canal taking into account the existing width of the canal. After the flood in 2005, PWD proposed to widen the canal for draining 20,108 cusecs indicating the defect in the Project formulation. The proposals were not approved by Government (March 2006).

3.1.6.4 Modifications of existing structures in river courses

The Project envisaged widening of the bed width of the rivers or construction of retaining walls where bed width could not be widened so as to carry the designed discharge of flood water. In the river course, there were existing concrete structures[6] where the carrying capacity of water was much less than the designed discharge. The Project did not provide for modifying these structures to increase the carrying capacity in these locations. Consequently, flood water would inundate the nearby areas in those locations defeating the objective of the Project.

3.1.6.5 Non-provision of storm water drains

The action plan prepared (January 2000) by CC for executing the Project indicated that 1,748 km length of road network in Chennai city did not have storm water drain and proposed to construct storm water drain for 292 km under the Project. Thus, the Project did not contemplate storm water drains for the entire city. Besides, the Project had not included the management of solid wastes which pollute the waterways.

3.1.6.6 Arresting of sewage outfalls in CMA

The Project had not contemplated arresting of sewage outfalls lying in CMA outside the city limits which were polluting the waterways of Chennai city. The records of CMDA, however, indicated that there were 173 outfalls outside the city discharging 68.10 million litres per day of raw sewage and waste water in city waterways. As such the objective of preventing pollution could not be achieved.

3.1.6.7 Omission of sewerage improvement works

Works recommended by the consultant were not included in the Project.

The Project did not include four sewerage improvement works[7] costing Rs 68.82 crore recommended by the consultant. Only after the approval of detailed estimates for the sanctioned works, CMWSSB sent proposals (February and May 2001 and May 2005) for these works to GOI stating that they were essential for achieving the Project objective and inadvertently omitted in the Project. Sanction for these works was pending as of September

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[6] Causeways at Anakaputhur, Cowl bazar, Jafferkhanpet and Kathipara, high level bridges at Adyar, Jafferkhanpet, Kotturpuram and Saidapet and railway bridge at Saidapet.

[7] (i) Expansion of capacity of interceptor system in Kilpauk, Napier Park pumping station, etc., (ii) Interceptor system for Indira Nagar, etc., (iii) Providing sewer facilities to Jai Balaji Nagar, etc., (iv) conveyance of raw sewage and treated effluent from Kodungaiyur and Koyambedu.

2006 as GOI sought (January 2006) an undertaking from GTN that it would bear 30 *per cent* of the cost of these works. Meanwhile related infrastructure pertaining to omitted sewerage improvement works was constructed which was lying idle/underutilised as discussed in para 3.1.9.7.

3.1.6.8 Inadequate capacity of treatment plant at Perungudi

The consultancy report mentioned (1998) that the mechanical component of existing Sewage Treatment Plant (STP) of 45 million litres per day capacity at Perungudi required complete replacement. The Project neither provided for new STP to replace the old STP nor contemplated improvement of the old STP. Against the assessed requirement of STP for 99 million litres per day during 2005, a new STP for 54 million litres per day was constructed (April 2006) at Perungudi. The old STP was abandoned. Consequently, the new STP is being used to treat higher quantum of sewage (maximum 76 million litres per day in January 2006) than its designed capacity. Poor formulation of the Project has, thus, resulted in sub-standard treatment of sewage defeating the objective.

Thus in both critical areas, namely, flood alleviation and pollution abatement, project formulation was found to be inadequate.

3.1.7 Financial Management

Against a total of Rs 1200 crore required for the Project, Rs 677.20 crore only were received (56.43 *per cent*) of which Rs 621.41 crore were spent as of March 2006. The details are given below.

(Rupees in crore)

Implementing Agency	Sources of funds (Project Report)			Funds received			Actual expenditure	Period of expenditure	Expenditure reported by EMAT to GOI	Difference
	GOI	GTN	Own funds	GOI	GTN	Own funds				
PWD	--	236.90	--	--	134.22	--	81.33	July 1999 to March 2006	120.03	38.70
TNSCB	--	113.50	--	--	93.45	--	90.55	June 1999 to March 2006	167.26	76.71
CC	--	--	109.25	--	--	89.82	89.82	April 1999 to March 2006	121.67	31.85
CMWSSB	491.52	--	228.63	351.55	--	6.91	358.46	January 2001 to March 2006	593.08	234.62
CMDA	--	20.20	--	--	1.25	--	1.25	April 1999 to March 2006	1.25	--
Total	**491.52**	**370.60**	**337.88**	**351.55**	**228.92***	**96.73**	**621.41**		**1003.29**	**381.88**

* includes Rs 60.78 crore raised as loan by CMDA on behalf of GTN and utilised for implementing the Project, Rs 26.61 crore raised as loan by TNSCB on behalf of GTN and Rs 20.68 crore received from GOI for implementing slum improvement works and utilised for this Project by TNSCB.

The expenditure included Rs 4.63 crore which was not actually spent[8]. The expenditure also included Rs 28.60 crore being the cost of 2,200 tenements constructed with Project funds and sold (April 2006) to Government at the construction cost. The amount was not realised and credited to the Project as of September 2006.

Expenditure was boosted to avail GOI grants.

The difference of Rs 381.88 crore between the reported expenditure and actual expenditure was due to (a) inclusion of expenditure on flood defence incurred by PWD prior to 1999-2000, expenditure incurred on other programmes by TNSCB and the interest and other expenditure[9] on management of loan raised by CMDA (Rs 115.41 crore), (b) expenditure on solid waste management works and desilting of canals incurred by CC which were not included in the Project (Rs 31.85 crore), and, (c) expenditure on works not included in the Project by CMWSSB (Rs 234.62 crore). As GOI releases their share in the ratio of 1:1.44[10], the excess reporting of expenditure resulted in receipt of GOI grant in excess by Rs 96.86 crore[11].

3.1.7.1 Provision of funds

The PWD did not utilise the entire budget allotment made by GTN during 1999-2006 and attributed the surrender mainly to non-release of Letter of Credit for incurring the expenditure. Audit scrutiny, however, revealed that the works were hampered mainly due to non-resettlement of slum families and slow progress of work.

GTN did not provide enough funds to TNSCB. Consequently, it utilised (January 2004 to February 2006) GOI grant of Rs 20.68 crore received for slum development under two other schemes for this Project. CMDA booked Rs 1.25 crore as coordination charges from the loan raised by it on behalf of GTN but did not seek funds for undertaking non-structural measures assigned to it for the Project. GTN had not provided funds to CC for executing micro drainage works envisaged under the Project. Consequently, the annual expenditure on construction and maintenance of storm water drains were treated as expenditure under the Project by EMAT.

3.1.7.2 Diversion of funds

Works not included in the Project were executed.

The EE, Araniar Basin Division constructed (during August 1999 to August 2005) a compound wall for 5.6 km at a cost of Rs 2.51 crore. The wall lies 18 m to 50 m away from the waterways and would not contribute to achieve the objectives of the Project. The EE contended that the wall would protect PWD

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8 Rupees 2.52 crore were kept by Land Acquisition Officer in the Public Account of GTN as revenue deposit and Rs 2.11 crore were kept by CMWSSB on a deposit work entrusted to it by TNSCB.

9 Front end fees, bank charges, documentation fees, deferment charges and supervision charges.

10 Proportion of GOI share with GTN share.

11 Rupees 351.55 crore – (1/2.44 X 621.41) = Rs 96.86 crore.

land from encroachment. This contention was not tenable as the wall was not constructed continuously to prevent encroachment.

The EE also desilted (2000-01) 1.80 km of North Buckingham Canal for a width more than the designed width of the canal at a cost of Rs 97.11 lakh. The master plan did not provide for this work. The EE contended (April 2006) that the desilting of canal for additional width would act as a stilling basin to collect flood water. As water collected in the stilling basin would not flow into Cooum river which was not desilted the stagnant water in the stilling basin, contaminated by sewage outfalls in the canal, would become a health hazard.

3.1.7.3 Undue favour to contractor

The contract for 'Flood defence to Buckingham Canal' provided for payment of interest free advance to the contractor for purchase of equipment for the Project. The EE, Araniar Basin Division, PWD paid interest free advance of Rs 1.55 crore (September 1999) for equipment already owned by the contractor and recovered the amount in instalments till September 2001. This resulted in an undue favour of Rs 34.84 lakh to the contractor towards interest at the GTN prescribed rate of 18.5 *per cent*.

3.1.8 Planning and Designing

It was observed that the different components of the Project were not planned for synchronized implementation and the guidelines of the Project, instructions of Government and standard specifications were not followed while designing the infrastructure. The following deficiencies were noticed.

3.1.8.1 Comprehensive administrative approval not given

While the Project Report contemplated completion of Project in five years, the GOI fixed a time limit of three years. GTN had not issued a comprehensive administrative approval indicating the roles of various implementing agencies, works aimed for execution in the Project Report and time schedule for completion. Consequently, TNSCB took up construction of tenements required for resettlement of slum families living on the banks of waterways in phases without any target date and flood defence works were not completed by PWD due to non-resettlement of slum families and non-arresting of sewage outfalls into the waterways.

3.1.8.2 Non-removal of sand bars

River mouths not kept open for receiving flood water.

Removal of sand bars in Cooum and Adyar river mouths and construction of groynes[12] to keep the river mouths open on sustainable basis are essential to derive the benefits of flood alleviation. The PWD had not removed the sand bars in the river mouths. Though one groyne on trial basis was constructed

[12] A low wall or barrier built out into the sea to check erosion and drifting.

(March 2001) at Cooum river mouth and its performance watched by a consultant till June 2002, the report was given only in June 2004. Proposal for construction of one more groyne sent in August 2004 was approved by Government only in November 2005. The construction of groyne was not taken up (May 2006). Consequently, the river mouth were not kept open. These failures resulted in inundation of residential areas during 2005 flood. Besides, non-removal of sand bars resulted in an additional expenditure of Rs 2.79 crore on utilisation of quarry dust for filling up of trenches after laying the pipeline for sewers by CMWSSB.

3.1.8.3 Essential works were not sanctioned

As the draining of Pallikaranai swamp was very slow, the Project contemplated diversion of surplus water from 11 tanks into Kovalam backwater. PWD, however, had not sanctioned this work and there was inundation during 2005 floods.

Similarly, the PWD had not taken up Macro Drainage works in other waterways though the Project provided Rs 11 crore for this purpose. Audit scrutiny revealed that Mambalam drain and other small channels were under the control of CC and no flood defence work was executed on these waterways.

CMDA had not taken up preventive measures like introduction of planning and regulatory control to prevent development of flood hazard zones and encroachment of these zones and waterways, formulation of strategic drainage plan, contour mapping to map flood hazard zones and preparation of guidelines for drainage system.

3.1.8.4 Non-provision of sanitation facilities

Slum families neither resettled nor provided with sanitation facilities.

In order to reduce the project cost to Rs 1200 crore GTN decided (July 2003) to provide only sanitation facilities to 25,000 families without resettling them. However, when CMWSSB proposed (November 2004) to provide sanitation facilities to these slum families at a cost of Rs 29.54 crore, it was not considered (September 2005) by GTN on the ground that the amount would become infructuous in the event of resettlement of all slums at a later date. Consequently, pollution of the waterways continued.

3.1.8.5 Unnecessary purchase of standby pump sets

Failure to utilise the existing pump sets as standby resulted in avoidable expenditure on new pump sets.

While expanding the capacity of 31 existing pumping stations under 'Sewerage improvement works' during February 2001 to July 2004 CMWSSB provided standby pump sets on the ground that the existing pump sets would be utilised in other pumping stations where no improvement works were carried out. Test check revealed that 46 existing pump sets in 23 pumping stations purchased between 1994 to 2000 were not transferred and were thus idle. Had these pump sets been treated as standby pump sets, purchase of 25 new standby pump sets for 25 out of 31 pumping stations (cost : Rs 4.15 crore) could have been avoided.

3.1.8.6 Excess use of cement

Non-adoption of latest IS specifications resulted in excess use of cement.

The cement content for various grades of cement concrete given in the Indian Standard (IS) specifications of 1978 was much higher than that prescribed in IS specifications of 2000. The agreements executed during March 2003 to December 2004 for the works of (a) construction of Velacherry drain executed by PWD, (b) construction of tenements at Semmancheri and Okkium-Thoraipakkam executed by TNSCB, and, (c) sewerage improvement works executed by CMWSSB stipulated the grade as per the old IS specifications. As all these works were taken up after the issue of IS specifications of 2000, non-adoption of the latest specifications resulted in excess use of 6,618 MT of cement costing Rs 1.83 crore. Incidentally, it was noticed that the IS specifications of 2000 were adopted in the works of improvements to Virugambakkam–Arumbakkam drain and Otteri-Nullah executed during October 2003 by PWD.

3.1.9 Execution

The current status of execution of various works taken up under the Project are given in **Appendix XVIII**. It was noticed that the progress of works of one agency was affected by non-completion of related works by other implementing agencies. The deficiencies in execution noticed in audit are discussed below:

3.1.9.1 Slow progress of work

Failure to foreclose the contract despite slow progress of work resulted in time overrun.

The SE, Palar Basin Circle, PWD awarded (August 1999) the flood defence work in the Adyar river to a Malaysian firm for Rs 22.63 crore in August 1999. The work was scheduled to be completed by May 2001. The firm appointed (March 2000) a power of attorney who acted as an agent for executing the works. The agent got the works executed through various sub-contractors. The execution of works got delayed mainly due to dispute between the agent and sub-contractors. Only works valued Rs 9.77 crore (43 *per cent*) was completed in intermittent stretches as of March 2006. The liquidated damages, levied by the EE, was also waived by the SE (July 2004). The Department, neither foreclosed the contract nor expedited the execution. Consequently, flood of 2005 caused heavy inundation of residential areas in the vicinity of the river.

Photograph showing Inundation of residential areas in 2005 floods

3.1.9.2 Non-resettlement of slum families

Delay in resettlement of slum families hampered the progress of work.

The flood defence work in Cooum river was mainly hampered due to (a) non-resettlement of 2,756 slum families living on its banks, and, (b) delay in arresting sewage outfalls. The flood defence work in Cooum river (17.98 km), entrusted to a contractor in September 1999, was deferred for 18 months in October 1999 to divert the sewage outfalls flowing into the river by

CMWSSB. The diversion work was commenced by CMWSSB only in January 2001 and completed in March 2006. Besides, 2,756 slum families living on the banks of the river were not resettled even by March 2006 as TNSCB took up the construction of tenements for resettling them only in January 2004 and completed it in February 2006. In the meantime, the contract for flood defence work was cancelled in November 2001 and work for 2.43 km which was free from encroachment was entrusted to another contractor in January 2004. This stretch lies at the down stream of the river. As the sand bar in the mouth of the river was not removed and silt from the upstream of the river as well as from North Buckingham Canal would silt up the desilted portion, the expenditure of Rs 2.16 crore on this work was rendered unfruitful.

3.1.9.3 Non-construction of retaining wall

The flood defence work in Buckingham Canal, taken up in July 1999, included construction of retaining wall in North and Central Buckingham Canal. The work was not taken up even by September 2006 due to non-resettlement of 1,662 slum families. Failure to construct retaining wall in North Buckingham Canal would result in sliding of earth from the jeep track formed (cost : Rs 4.02 crore) thereby silting the waterways during rainy season.

Photograph showing Jeep Track without the retaining wall (North Buckingham Canal at LS 7020m - April 2006)

3.1.9.4 Delay in construction of tenements

Delay in obtaining sanction for constructing tenements delayed resettlement of slum families.

The revised Project envisaged resettlement of 8,164 slum families living along the waterways. TNSCB completed the construction of 3,000 tenements in Phase I during April 2001 to September 2003 and took up (January 2004) construction of 5,272 more tenements[13] in Phase II and completed them in November 2005 (108) and February 2006 (5,164). While 2,938 tenements completed in Phase I was allotted during June 2002 to September 2003, no action for allotting the tenements constructed in Phase II was taken. In the meantime Government purchased (April 2006) 2,200 tenements for allotment to Tsunami affected families.

Delay in taking up the construction of tenements affected the flood defence works implemented by PWD. Besides, 62 tenements (cost : Rs 54.07 lakh) completed in September 2003 and 108 tenements (cost : Rs 1.19 crore) completed in November 2005 were kept vacant as of June 2006 due to delay in identification of beneficiaries.

[13] Includes 108 tenements taken up utilising the savings available under Phase I.

3.1.9.5 Avoidable expenditure due to wrong alignment

Failure to consider the advice of Highways Department on realignment of pipeline resulted in avoidable expenditure.

The work of expansion of capacity of sewer at Perungudi included laying 2,200 mm dia Reinforced Cement Concrete (RCC) pipes to a depth of 4.5 m to 8.5 m along the carriageway of Old Mahabalipuram Road (OMR) for a length of 3,050 m. This item of work was entrusted to a contractor in March 2001 for completion in 30 months. When CMWSSB sought permission from Highways Department for road cutting, the Divisional Engineer (DE) advised to re-route the pipeline in view of the loose nature of soil, seepage of water and intensity of traffic. CMWSSB, however, insisted and obtained permission (August 2004) to lay the pipeline along the OMR. Due to poor soil condition, the contractor could lay pipes for a length of 397.5 m. CMWSSB decided (December 2004) to lay pipes along the alternate alignment suggested by the DE. Due to realignment, pipes costing Rs 2.38 crore was rendered surplus and the same was transported (July 2005) to another site at a cost of Rs 30 lakh for use in another scheme which was not sanctioned. As only 220 m formed part of the realigned route, pipes laid for a length of 177.5 m costing Rs 48.73 lakh had to be abandoned. Further, as the revision of alignment delayed the completion of work, the contract period of the original contractor was extended and CMWSSB had paid him Rs 60 lakh as escalation charges for the period from October 2003 to September 2005.

Thus, failure of CMWSSB to consider the advise of Highways Department resulted in avoidable expenditure of Rs 3.28 crore and wasteful expenditure of Rs 48.73 lakh.

3.1.9.6 Unnecessary standby power equipment

Unnecessary provision of more standby arrangements for power supply resulted in avoidable expenditure.

CMWSSB installed captive power generation units in all the four STPs[14] constructed under the Project to produce power required for running the STPs. The generation unit has provision for storing gas required for running the STP for 12 hours in a gas chamber. Guidelines issued by National River Conservation Directorate (NRCD) stipulated that Dual Fuel Gas Engines (DFG) with minimum standby should be provided for STPs. However, CMWSSB provided one gas engine for generating captive power and HT power supply with two transformers and also DFG/Diesel Generator (DG) as standby. As one DFG which can be operated using gas or diesel with one transformer as standby would have been enough, installation of one gas engine and one transformer as additional standby was avoidable. Unnecessary additional standby resulted in avoidable expenditure of Rs 8.54 crore[15].

Similarly in all the 14 pumping stations which were provided with HT power supply with transformers, CMWSSB provided one additional transformer and one DG as standby. The specifications of standby transformers were same as the transformers connected to the pumping stations. Provision of standby

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[14] Kodungaiyur, Koyambedu, Nesapakkam and Perungudi .

[15] Four gas engines : Rs 8.11 crore, Four transformers : Rs 0.43 crore.

transformer in addition of DG was unwarranted and resulted in avoidable expenditure of Rs 61.36 lakh.

3.1.9.7 Non-utilisation of infrastructure created

Infrastructure created under the Project were not put to use due to non-inclusion of related works in the Project.

The Project aimed at intercepting all sewerages and conveying them to treatment plants through pumping stations. The works were taken up as separate packages for each area. While obtaining GOI approval CMWSSB omitted four sewerage improvement works. Consequently, Besant Nagar interceptor constructed (October 2003) at a cost of Rs 54.84 lakh had to be kept idle for want of pumping station which has been included in one of the omitted works. Further, three pumping stations[16] were under-utilised as the interception works were included in the omitted works. Similarly, interceptors[17] constructed (September 2003) under this Project could not be connected to pumping stations as they were among the omitted works.

3.1.9.8 Delay in acquisition of land

Delay in acquisition of land resulted in payment of compensation and price variation to the contractor.

Mention has been made in the Report of the Comptroller and Auditor General of India for the year ended 31 March 2004 (Paragraph 4.2.8) that the PWD had paid Rs 1.09 crore till November 2003 towards compensation and price variation to the contractor due to delay in handing over of site for improving the surplus courses of four tanks[18]. As the Revenue Department had handed over only 39 hectares of private land during October 2002 to November 2005 as against the requirement of 97 hectares and the required Government land was not alienated, PWD incurred an additional avoidable expenditure of Rs 2.63 crore from December 2003 to December 2005 towards compensation and price variation.

3.1.9.9 Over payment on price adjustment

Wrong computation of price adjustment resulted in over payment to the contractors.

The contract for the works executed by CMWSSB provided price adjustment clause to compensate changes in rates of labour, material, fuel and lubricants. The adjustment was to be computed quarterly for the value of work actually executed during the quarter and the price adjustment was not admissible for the new items of work executed at current rates. Contrary to the agreement provision, CMWSSB computed price adjustment for the bill amount and also for new items of work. Besides, CMWSSB computed price adjustment with reference to date of opening of technical bids instead of financial bids. These failures resulted in over payment of Rs 1.71 crore to contractors in 10 test checked cases.

3.1.9.10 Overpayment of road cut restoration charges

CMWSSB had to pay road cut restoration charges to CC for cutting the roads for laying sewerage pipelines. The CC divided Chennai city as three zones

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16 (i) Jawahar nagar, (ii) K.K.Nagar 'B' and (iii) Melpattadai.

17 (i) North Mylapore, (ii) Ram Nagar and (iii) Seethamal Colony.

18 Widening, strengthening of banks, side lining, etc.

and prescribed different rates of road cut restoration charges each year. In 'Leak detection rectification work', CMWSSB paid road cut restoration charges adopting the highest rate prescribed by CC for the three zones during the year and comment on the excess payment made was included in Para 6.12 of the Report of the Comptroller and Auditor General of India for the year ended 31 March 2001. In this Project also, CMWSSB made excess payment of Rs 29.43 lakh by adopting higher rates.

3.1.9.11 Avoidable payment of electricity charges

While obtaining power connection for pumping stations improved/constructed under the Project, CMWSSB obtained contracted demand for power supply more than the connected load. In six pumping stations[19], CMWSSB utilised power ranging from 17.2 KVA to 582.2 KVA which was much less than the contracted demand and reduced the contracted demand in four pumping stations during April 2005 to April 2006. The action of CMWSSB in obtaining higher contracted demand than that required in six pumping stations resulted in extra expenditure of Rs 24.85 lakh as minimum charges during October 2003 to May 2006.

3.1.10 Monitoring and Evaluation

3.1.10.1 Monitoring

The Project was not monitored properly.

Though the Project envisaged CMDA as the single nodal agency for Project Management, this function was not carried out by CMDA. Consequent on the constitution of EMAT it reviewed only the financial progress of various components. While the works executed by CMWSSB were got sanctioned by GOI the other implementing agencies took up the works at their own discretion. The High level Monitoring Committee also met only thrice (August 2003, October 2004 and September 2005) and the progress of works taken up for execution only were reviewed. EMAT contended (February 2006) that no independent agency was appointed to monitor and evaluate the performance of the Project and the periodicity of High level Monitoring Committee depended on need for policy decision. The non-taking up of essential flood defence works and diversion of funds by PWD, delay in taking up construction of tenements by TNSCB and execution of micro drainage works by CC depending on the availability of funds clearly indicated that the Project was poorly coordinated. Owing to poor monitoring, the Project was not completed even after seven years and completion of the Project in the near future is doubtful. Government had not given any specific reasons for poor monitoring of the Project.

3.1.10.2 Evaluation

The Project has a dual objective of flood alleviation and abatement of pollution in city waterways. Neither of these objectives were realised even

[19] Anna Nagar A, B and C, Arumbakkam, Velacherry and Villivakkam Sector A.

after implementing the Project for seven years at a cost of Rs 621.41 crore as discussed below:

Flood alleviation

Flood defence works executed were insufficient to control floods.

In the recent flood of 2005, water rose up to five feet height in low lying areas and receded only after five days affecting 7.4 lakh families and the death toll was 12. Government proposed (December 2005) to spend Rs 426.26 crore for restoring flood damages and gave Rs 20.29 crore as flood relief to public. Besides, additional flood defence works costing Rs 334 crore were also proposed (December 2005) by PWD. These clearly indicated poor Project formulation and execution.

Abatement of pollution

Even after completing the sewerage improvement works pollution level in waterways was not reduced.

Though CMWSSB had completed sewerage improvement works, the city waterways continued to be polluted due to defective Project formulation. The study of sewage outfalls in Chennai city conducted by EMAT in May 2006 also indicated that sewage flow continued to exist in 255 outfalls of which 61 had heavy flow and 143 had medium flow. Anna University, which monitors water quality on behalf of GOI under NRCP, observed (April 2006) that the pollution level of waterways in Chennai city was high and exceeded the prescribed parameters. The pollution level in the four major waterways during 2001-02, the year of commencement of work by CMWSSB and during 2005-06 as assessed by Tamil Nadu Pollution Control Board (TNPCB) are given below:

	Total Suspended Solids		**Bio-chemical Oxygen Demand**		**Chemical Oxygen Demand**	
Norms prescribed for treated sewage	30 mg/l		20 mg/l		250 mg/l	
Waterways	**Pollution level assessed by TNPCB**					
	2001-02	**2005-06**	**2001-02**	**2005-06**	**2001-02**	**2005-06**
Adyar	552	1,433	289	1,338	1,351	5,370
Cooum	151	255	78	113	285	379
Buckingham Canal	629	277	136	147	498	519
Otteri Nullah	694	395	292	244	1,087	848

mg/l : milligram per litre

The level of pollution in all the four major waterways are much more than the norms prescribed for treated sewage. As against 1,785 million litres per day of sewage that would have been generated during April 2006 to June 2006, only 975 million litres per day (55 *per cent*) was collected and treated in treatment plants. This indicates that untreated sewage continued to flow into the waterways. The objective of abatement of pollution in waterways was thus defeated.

Government stated (September 2006) that action was being taken to arrest the sewage outfalls and when all the slum dwellers were resettled, the Project would achieve its objective.

3.1.11 Conclusions

The twin objectives of flood alleviation and abatement of pollution in waterways were not achieved due to poor Project formulation and execution. Works essential for achieving the objectives were not included in the Project while flood defence works were not sanctioned. The Project was affected by lack of funds and where funds were provided there were instances of diversion to works not connected with the Project. Execution of work was hampered because of poor coordination between implementing agencies. Even after seven years of execution, the Project did not achieve its objectives.

3.1.12 Recommendations

- Encroachers in the irrigation tanks located in CMA need to be evicted to restore the original capacity of the tanks.
- Relocation of all families living on the banks of waterways should be considered or else sanitation facilities need to be provided to prevent pollution, as originally envisaged.
- All sewage outfalls need to be arrested including those outside the city limits.
- Sewerage improvement works in Indira Nagar, Jai Balaji Nagar, Kilpauk, Kodungaiyur, Koyambedu and Napier Park which were omitted in the Project need to be taken up.
- As multiple agencies are involved in implementation of the Project, the system of monitoring the execution of the Project needs a complete review so that coordinated and speedier progress for the Project is ensured along with adequate funding for the various implementing agencies.

Above points were referred to Government in August 2006; reply had not been received (December 2006).

AGRICULTURE DEPARTMENT

3.2 Functioning of Horticulture and Plantation Crops Directorate

Highlights

A review on the working of the Horticulture Directorate revealed that Plan outlay for the sector was underutilised, there was no comprehensive policy for development of the sector and full potential for horticulture crops was not tapped. There was no marked improvement in productivity mainly because planting material was supplied after the cropping season, quality of planting material used by the farmers was not ensured, and no positive initiatives were taken to multiply the hybrid seeds developed by Tamil Nadu Agricultural University.

- **The State Government provided only Rs 61.59 crore for horticulture during the first four years of Tenth Five Year Plan as against proportionate outlay of Rs 103.32 crore.**

(Paragraph 3.2.7.1)

- **Full potential for horticulture crops in the delta districts was not exploited due to inadequate promotion activities.**

(Paragraph 3.2.8.1)

- **There were delays in supply of planting material to the farmers resulting in low productivity of horticulture crops.**

(Paragraph 3.2.8.2)

- **Department failed in multiplying and supplying hybrid seed of tomato and brinjal developed by Tamil Nadu Agricultural University. As a result actual productivity was lower than the achievable productivity.**

(Paragraph 3.2.8.4)

- **Department has no system to monitor and record the survival rate of planting material supplied to farmers.**

(Paragraph 3.2.11)

3.2.1 Introduction

Tamil Nadu with its varied agro climatic condition has good potential for all kinds of horticultural crops. The area under horticultural crops in the State is around 8.5 lakh hectares, covering 18 *per cent* of the total cropped area. The major horticultural crops in the State are fruits, vegetables, spices, plantation

crops, flowers and medicinal plants. The Horticulture and Plantation Crops Directorate (Department) works towards increasing the horticultural production through (a) expansion of area under horticultural crops by providing subsidised inputs and motivating farmers to cultivate horticultural crop, (b) improving productivity by supplying planting material of high yielding varieties, (c) dissemination of latest technologies through demonstration farms and farmers training, (d) adopting integrated approach in nutrient and pest management, and, (e) effective water management through drip/sprinkler irrigation systems. In order to achieve these objectives Government implemented various schemes such as (a) Integrated Horticulture Development Scheme (IHDS), (b) Hill Area Development Programme (HADP), (c) Western Ghats Development Programme (WGDP), (d) Precision Farming Project, (e) Tamil Nadu Horticulture Mission, (f) Centrally sponsored Integrated Programmes for Development of cashew, fruits, vegetables and commercial floriculture and (g) National Horticultural Mission.

3.2.2 Organisational set up

Government established a separate Directorate of Horticulture and Plantation Crops along with its field formations in 1979, by bifurcating the Agriculture Department. Secretary to the Government, Agriculture Department heads the Department at the Government level and the Commissioner of Horticulture and Plantation Crops heads the field formations. The State has been divided into nine [1] horticulture regions. While The Nilgiris region is headed by a Joint Director of Horticulture (JDH), all other regions are headed by Deputy Directors of Horticulture (DDH).

3.2.3 Audit objectives

The objectives of the Audit were to assess:

- whether financial management and planning were efficient and provided effective support for achievement of the objectives of the Department,
- the performance of the Department in expansion of cropping area and in improving the productivity,
- the efficiency and effectiveness of implementation of Hill Area Development Programme, Tamil Nadu Precision Farming Project and Tamil Nadu Horticulture Mission,
- the efficiency in manpower management and
- the effectiveness of monitoring mechanism.

3.2.4 Audit methodology and coverage

Performance audit was conducted by test check of departmental records, scrutiny of relevant Government instructions, analysis of accounts compiled

[1] Chennai, Coimbatore, Cuddalore, Madurai, The Nilgiris, Salem, Tiruchirappalli, Tirunelveli and Vellore.

by the Accountant General (A&E), and by obtaining comments and information by issue of Audit enquiries. Audit methodology also included the joint inspection of the fields of 46 beneficiary farmers by the audit teams and the Departmental officers. The audit objectives and criteria were discussed with the Commissioner of Horticulture and Plantation Crops (CHPC) during the entry conference held in March 2006 and audit findings were discussed in the exit conference held in June 2006. The views of the Department and Government have been considered while finalising the review.

Records relating to all major activities of the Department were examined in audit in the Agriculture Department of the Secretariat, Directorate of Horticulture and Plantation Crops, Chennai and in 33 out of 71 field level offices[2] in eight[3] out of 30 districts selected through stratified random sampling between January and May 2006, covering the period 2001-06.

3.2.5 Overall performance of horticulture sector

Of the net sown area of 46.89 lakh ha, vegetables and fruits were cultivated in 4.12 lakh ha (8.8 *per cent*) and contributed Rs 4589.39 crore (23 *per cent)* to the total agricultural production of Rs 20257.26 crore of the State as of March 2005.

Government planned to achieve an annual growth of eight *per cent* in production of horticulture crops during Tenth Plan period (2002-07). The targets were not achieved during the first four years as shown below:

	2002-03		2003-04		2004-05		2005-06	
	Area (In lakh ha)	Production (In lakh MT)	Area (In lakh ha)	Production (In lakh MT)	Area (In lakh ha)	Production (In lakh MT)	Area (In lakh ha)	Production (In lakh MT)
Target	8.90	144.92	9.14	153.39	9.37	162.34	9.61	171.83
Achievement	7.77	91.68	8.21	99.45	8.59	126.17	9.21	135.67
Shortfall	1.13	53.24	0.93	53.94	0.78	36.17	0.40	36.16
(Percentage)	(13)	(37)	(10)	(35)	(8)	(22)	(4)	(21)

The production of vegetables in the State was sufficient to provide only 147 grams per capita per day which was much lower than the per capita requirement of 250 grams of vegetables per day. In the State the production of fruits and vegetables grew by 43 *per cent* during Eighth and Ninth Five Year Plan periods as against the growth of 50-51 *per cent* at national level.

3.2.6 Financial Management

Budget provision, actual expenditure and savings/excess during the period 2001-06 were as tabulated below :

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[2] Offices of one Joint Director of Horticulture, one Deputy Director of Horticulture, seven Assistant Director of Horticulture, eight State Horticulture Farms and 16 Horticulture Depots.

[3] Coimbatore, Cuddalore, Dharmapuri, Erode, Kanniyakumari, The Nilgiris, Vellore and Villupuram.

(Rupees in crore)

Year	Budget provision				Actual Expenditure				Savings (-)/Excess (+)			
	Plan		Non-Plan	Total	Plan		Non-Plan	Total	Plan		Non-Plan	Total
	State	CSS			State	CSS			State	CSS		
2001-02	13.87	8.50	21.07	43.44	12.84	10.23	18.62	41.69	(-) 1.03	(+) 1.73*	(-) 2.45	(-) 1.75
2002-03	13.50	7.94	21.87	43.31	9.28	8.47	18.51	36.26	(-) 4.22	(+) 0.53*	(-) 3.36	(-) 7.05
2003-04	16.21	8.27	21.66	46.14	14.24	13.18	18.50	45.92	(-) 1.97	(+) 4.91*	(-) 3.16	(-) 0.22
2004-05	17.04	14.01	21.93	52.98	15.73	9.85	20.35	45.93	(-) 1.31	(-) 4.16	(-) 1.58	(-) 7.05
2005-06	14.84	14.26	23.62	52.72	14.75	0.72	22.81	38.28	(-)0.09	(-)13.54	(-) 0.81	(-)14.44
Total	**75.46**	**52.98**	**110.15**	**238.59**	**66.84**	**42.45**	**98.79**	**208.08**	**(-) 8.62**	**(-) 10.53**	**(-) 11.36**	**(-) 30.51**

* The excess expenditure was met out of final savings within the grant.

Government of India (GOI) merged all the centrally sponsored schemes and launched a new scheme viz., National Horticulture Mission. Under the new scheme funds were not routed through budget. Provisions made in the budget in anticipation of receipt of funds from GOI resulted in savings during 2005-06.

3.2.7 Planning

3.2.7.1 Plan outlay for Horticulture sector

As against the Tenth Five Year Plan (2002-07) outlay of Rs 129.15 crore for State Plan schemes, the Government provided only Rs 61.59 crore in the first four years (2002-06) (60 *per cent* of proportionate outlay of Rs 103.32 crore). Out of the provision of Rs 61.59 crore, expenditure was only Rs 54 crore. Underutilisation of the Plan outlays was due to non-implementation of new schemes and inadequate provision for the on-going schemes.

3.2.7.2 Proposed Plan schemes not implemented

The Tenth Five Year Plan proposed implementation of three new schemes *viz.*, 'Post harvest clinics' to provide facilities for collection, pre-cooling, grading, sorting and cold chain system for horticulture products, 'Strengthening of extension base in districts' to provide information and education to growers, entrepreneurs, exporters, etc. and 'Eastern Ghats Development Programme' for development of horticulture in Eastern Ghat areas. These schemes which covered 17 *per cent* of the total Plan outlay, were not launched as of June 2006. The proposal for Eastern Ghat Development Programme was pending with the State Planning Commission. Reasons for non-implementation of other two schemes had not been intimated. Thus the benefits contemplated under these schemes did not accrue to the beneficiaries.

3.2.7.3 Non-utilisation of scheme funds

The unspent balance under the Indo-German Nilgiris Development Project was to be utilised for horticulture development in The Nilgiris District. Implementation of the project was to be monitored by the State Level Committee (SLC) headed by the Minister for Agriculture and assisted by the CHPC. The SLC was to suggest and approve necessary horticulture scheme for implementation. During Audit scrutiny, the relevant records only for the period from October 1999 onwards were made available by the JDH, Udhagamandalam. The last meeting of the SLC was held in October 1999. It was noticed that unspent balance of Rs 77.69 lakh under the project was kept

in the nationalised bank from October 1999 to date (August 2006) as no meeting of SLC was held during that period. The funds available were, hence, not utilised for development of horticulture in the State.

3.2.7.4 Planning and policy directives

Department continued to function without comprehensive policy for horticulture development.

The Department continued to function without a comprehensive policy for horticulture development in the State as finalisation of the draft policy submitted in July 2001 by CHPC was delayed due to lack of coordination among the various agencies and has not been approved (May 2006) by the Government.

Government announced the Commercial Floriculture Policy in October 1996 which outlined an institutional mechanism to promote floriculture in the State. A High Power Committee headed by the Chief Secretary to the Government and a committee for promotion of floriculture headed by the CHPC were constituted in April 1997. A floriculture cell was also proposed to be set up in the Directorate with horticulturists, entomologists and pathologists to suggest solutions to the problems encountered by the growers. Both the committees did not meet after April 2003 and the proposed Floriculture cell was not created. The Floriculture Policy envisaged (a) development of seven floriculture zones in the State to promote export of cut flowers, (b) creation of infrastructure such as flower auction centres, cold chain facilities, etc., and (c) establishment of mobile units for minimising difficulties faced by the growers. Due to inaction of the committees and non-formation of floriculture cell the above benefits did not accrue to growers.

3.2.8 Area expansion of horticulture crops and improvement of productivity

3.2.8.1 Non-exploitation of full potential of area expansion

Integrated Horticulture Development Scheme (IHDS) is the State scheme aimed at area expansion. Planting material and seeds were supplied to farmers at subsidised rates under the scheme. Of the total area of 18,504 ha covered under the scheme in 2004-05, 16,075 ha was under cultivation of fruits and vegetables and the balance under spices, plantation crops, flowers and medicinal plants. The State level physical and financial target and achievement under fruits and vegetables during 2001-06 were as under:

Crop	Area coverage under IHDS through supply of planting material									
	2001-02		2002-03		2003-04		2004-05		2005-06	
	Target	Achieve-ment	Target	Achieve-ment	Target	Achieve-ment	Target	Achieve-ment	Target	Achieve-ment
Physical (in hectares)										
Fruits	5,805	6,035	5,071	5,123	2,187	2,395	2,433	2,389	2,458	2,459
Vegetables	18,450	19,728	18,191	18,697	11,918	13,033	12,972	13,686	12,963	12,965
Financial (Rs in lakh)										
Fruits	148.29	150.69	139.76	139.26	124.56	125.02	131.62	132.09	131.62	131.62
Vegetables	142.74	130.56	118.02	118.31	83.41	84.75	84.77	85.66	85.22	85.22

Financial and physical targets were gradually reduced from 2001-02 to 2005-06 though the targets were achieved. Reasons for setting lower targets were not furnished by the Department.

Full potential for horticulture crops in the delta districts was not exploited due to inadequate promotion activities.

Though the net sown area in Nagapattinam, Thanjavur and Thiruvarur Districts constituted nine *per cent* of the total net sown area of the State (as of 2004-05), the area under horticulture crops in these Cauvery delta districts worked out to less than two *per cent* of the total area of horticulture crops in the State.

The techno economic feasibility study conducted by the National Horticulture Board (NHB) in 1993 indicated the feasibility of bringing an additional area of 4,000 hectares of land under vegetable cultivation in these districts. Assistant Director of Horticulture(ADH)/Horticulture Officers(HOs) in the delta districts had opined (2004) that it was possible to expand vegetable cultivation area in these districts. Further, fallow[4] land to an extent of 1.52 lakh hectare was available (2004). The Department, however, did not take adequate initiative to promote vegetables and other crops in the delta districts. The targets fixed (2004-05) for subsidised supply of seeds and for demonstration of technology in these districts were only 356 hectares as against feasibility of bringing additional 4,000 hectares under vegetable cultivation.

Though IHDS is the only horticulture scheme implemented in these districts full potential for horticulture crops (particularly vegetables as suggested by NHB) was not exploited due to inadequate promotion activities.

3.2.8.2 Poor productivity of major crops

The productivity of some of the important horticultural crops in comparison with the achievable productivity given in the Manual of Crop Production Techniques published (April 2004) jointly by Tamil Nadu Agricultural University (TNAU) and CHPC indicates the scope for further improvement of productivity through appropriate intervention by the Government.

(in MT/ha)

Crop	Achievable productivity	Actual productivity of the State (2004-05)
Cashew	0.60 to 0.80	0.51
Onion	12.00 to 18.00	9.00
Tomato	30.00 to 40.00	12.32
Brinjal	25.00 to 30.00	7.62
Potato	20.00 to 25.00	16.50
Mango	8.00 to 20.00	4.00
Guava	25.00	7.00
Chilly	2.00 to 3.00	0.53
Turmeric	25.00 to 30.00	4.16

[4] All lands which were taken up for cultivation but had been temporarily put off cultivation for a period of not less than one year and not more than five years were treated as fallow lands.

The main reason for low productivity was delay in supply of seeds and planting material such as grafts, layers, suckers, rhizomes, etc., which were supplied only after the cropping seasons (June to September and December to March). Delay in supply was due to delay at all levels from ADH to CHPC in submission and approval of proposals for the implementation of the scheme. During 2003-06 planting material were not supplied in the cropping season June to September in five[5] out of eight test checked districts.

3.2.8.3 Lack of system to ensure quality of inputs

For sourcing planting material under the Comprehensive Wasteland Development Programme the TNAU assessed (June 2005) the standard of 85 private nurseries. It was found by TNAU that 36 nurseries were below minimum standard. Further, farmers purchased a major part of planting material from various private nurseries. Hence, it is essential to ensure the quality of products in the nurseries for increasing productivity. However, the Government has not enacted the Nurseries (Regulation) Bill, 2001 with necessary changes as per Central Seed Act, 2001. Hence, the CHPC had no power to register, inspect and monitor the functioning of the private nurseries. As a result, quality of planting material used by the farmers was not ensured by the Department, though it is an important factor for improving productivity.

3.2.8.4 Non-supply of vegetable seeds introduced by TNAU

The failure of the Department in supplying hybrid seed developed by TNAU had rendered the Research and Development efforts of TNAU unfruitful.

TNAU had developed hybrid varieties of Tomato (1998) and Brinjal (2001). The responsibility for arranging multiplication of the breeder seeds produced by the research stations of TNAU rested with the Department. Department did not make any effort to multiply and supply these seeds to farmers, though necessary infrastructure such as land, irrigation facilities, manpower, etc., was available in the 55 State Horticulture Farms (SHFs). The yield by hybrid varieties of tomato and brinjal was almost double the yield by high yield varieties. Hence, the failure of the department to multiply the hybrid seed developed by TNAU and supply them to farmers also contributed to low productivity.

3.2.8.5 State Horticulture Farms

Department maintains 55 SHFs, including four public parks[6]. SHFs produce pedigree-planting material for supply to the farmers and to demonstrate modern technologies in horticulture. It was noticed that seven districts had three or more SHFs, eight districts had two SHFs, three districts had one SHF and 12 districts did not have any

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5 Coimbatore, Dharmapuri, Erode, Kanniyakumari and Vellore.

6 Two in Ooty and one each in Coonoor and Kodaikanal.

SHF[7]. The Nilgiris District topped the list with eleven SHFs. As the farmers were to lift their requirement of planting material from the SHFs, those in the districts without SHFs were in a disadvantageous position as it involved additional expenditure on transportation of planting material. Proposal (April 2005) to have SHFs in the districts without SHFs has not been approved by Government as of September 2006.

Further, it was noticed that production of planting material through grafting and layering techniques in the six[8] out of eight test checked farms declined to 2.49 lakh (Mango: 1.06 lakh; Cashew: 0.26 lakh; Others: 1.17 lakh) and 2.55 lakh (Mango: 0.55 lakh; Cashew: 0.32 lakh; Others: 1.68 lakh) in 2004-05 and 2005-06 respectively as compared to 4.19 lakh (Mango: 1.53 lakh; Cashew: 2.00 lakh; Others: 0.66 lakh) in 2003-04. The other two SHFs Burliar and Katteri (The Nilgiris) did not produce planting material through grafting and layering techniques.

CHPC attributed (August 2006) the steep fall in production of mango grafts and cashew grafts to lack of planning, inadequacy of water for irrigation and severe drought.

3.2.9 Implementation of horticulture development programmes

3.2.9.1 Hill Area Development Programme

Hill Area Development Programme (HADP) is being implemented in The Nilgiris District from 1975-76 with 90 *per cent* Special Central Assistance (SCA) to propagate suitable cropping system to prevent soil erosion, promote sustainable agricultural development and to preserve the pristine eco-system.

SCA funds of Rs 1.05 crore were diverted to maintenance activities in SHFs in violation of GOI guidelines.

Under HADP, Rs 11 crore was released for horticulture sector during 2002-06. It was noticed that SCA funds of Rs 1.05 crore were diverted to various development and maintenance activities in SHFs such as provision of fencing, irrigation facilities, toilet facilities, foot path and garden benches in violation of the GOI guidelines thereby reducing the availability of funds for development activities envisaged in the programme.

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[7] District with three or more SHFs: Coimbatore, Dindigul, Kancheepuram, Pudukkottai, Salem, The Nilgiris and Vellore.
District with two SHFs: Cuddalore, Dharmapuri, Kanniyakumari, Namakkal, Sivagangai, Thanjavur, Thiruvallur and Virudhunagar.
District with one SHF: Karur, Theni and Tirunelveli.
District without any SHF: Ariyalur, Chennai, Erode, Krishnagiri, Madurai, Nagapattinam, Perambalur, Ramanathapuram, Thiruvannamalai, Thiruvarur, Thoothukudi and Villupuram.

[8] Anaikatti (Coimbatore), Jeenur (Krishnagiri), Kudapattu and Navlock (Vellore), Pechiparai (Kanniyakumari) and Vridhachalam (Cuddalore).

Irregular crediting of subsidy to State Government account resulted in reduction in supply of additional input of the value of Rs 12.44 crore.

Provision of funds for the programme in the State's budget was made based on the quantum of SCA approved by the GOI. The funds so provided were utilised for procurement of horticultural inputs. The inputs were sold to the farmers at subsidised rates[9] and the entire sale proceeds credited to the State Government account as revenue receipts instead of crediting back to the programme. During 2001-06, horticultural inputs worth Rs 6.94 crore were supplied to farmers at subsidised prices. The subsidy element involved was Rs 2.78 crore. Had the balance amount of Rs 4.16 crore was utilised only towards subsidy, the department could have supplied inputs worth Rs 12.44 crore to the farmers. Irregular crediting of the sale proceeds to State Government's account thus, resulted in reduction in supply of inputs to the value of Rs 12.44 crore. Further, it also resulted in irregular crediting of SCA to State's account. During 2001-06 Rs 4.16 crore was credited to the State Government account as revenue receipt. JDH, Udhagamandalam, concurred with the above observation and stated (March 2006) that actual subsidy alone will be debited as expenditure from 2006-07.

Violation of the directions of the Union Planning Commission resulted in release of subsidy to the tune of Rs 51 lakh to ineligible beneficiaries.

Based on assurance of State Government, Union Planning Commission cleared the proposal of extending assistance to families living Below the Poverty Line (BPL). Government accorded (August 2004) sanction of Rs 51 lakh to 34 Self Help Groups (SHGs)[10] at Rs 1.50 lakh per SHG for purchase of poly green house[11] costing Rs 6 lakh so as to benefit the BPL families. In December 2004 JDH, Udhagamandalam, expressed his inability to identify suitable SHGs and sought permission to provide assistance to individual farmers instead of SHGs. Government permitted (February 2005) JDH, Udhagamandalam to extend assistance to individual farmers contrary to the assurance given to the Union Planning Commission. As the beneficiaries had to meet out the balance cost of Rs 4.50 lakh from their own sources they could not be BPL. The violation of the directions of the Union Planning Commission resulted in release of subsidy to the tune of Rs 51 lakh to ineligible beneficiaries.

3.2.9.2 Tamil Nadu Precision Farming Project

Government sanctioned (January 2004) Tamil Nadu Precision Farming Project (TNPFP) in Dharmapuri and Krishnagiri districts to be implemented by TNAU on turnkey basis at a cost of Rs 7.21 crore[12] over a period of three years to promote high tech horticulture with water efficient cultivation practices. The salient features of the Project were: (a) coverage of 400 ha of farmers' holdings, (b) involvement of farmers in day to day operations, and, (c) provision of cent *per cent* subsidy for installation of drip irrigation systems at a cost of Rs 0.75 lakh to farmers participating in the project. CHPC was the

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9 The rate of subsidy was 50 *per cent* during 2001-04 and 25 *per cent* thereafter.

10 Group comprising minimum 10 to maximum 20 members.

11 Poly Greenhouse: Greenhouse made of polyethylene material.

12 Establishment expenditure of TNAU: Rs 2.11 crore, post harvest handling charges: Rs 0.50 crore, cultivation component: Rs 1.60 crore and cost of installation of drip irrigation: Rs 3 crore.

Project Director. During 2003-06, the Government released Rs 5.98 crore to TNAU. The Project had been implemented in 300 ha as of June 2006.

The maximum subsidy available to a beneficiary under IHDS was Rs 10,000, under Macro Irrigation Programme Rs 13,750 and under Centrally sponsored scheme for vegetable cultivation Rs 10,000. The TNPFP provided a subsidy of Rs 0.75 lakh per beneficiary towards installation of drip irrigation and Rs 0.32 lakh to Rs 0.40 lakh towards cultivation. Hence, the subsidy allowed under the Project was relatively excessive.

Though the Nodal Officer of the Project suggested (July 2005) that the Project could be implemented even in one acre of land, no decision was taken on the suggestion (May 2006). As the Project was being implemented only in the land holdings of the farmers with at least one hectare of land, it resulted in deprival of benefit to the marginal farmers, especially as 70 *per cent* of the farmers in Dharmapuri and Krishnagiri Districts hold less than one hectare of land.

As the project cost takes care of all the administrative expenditure of the implementing agency, the provision for consultancy charges of Rs 90 lakh including Rs 30 lakh towards international consultancy to TNAU was also on the higher side and was not also computed based on any accepted norms. During 2004-06 the Government released Rs 60 lakh towards consultation charges of which Rs 20 lakh was towards international consultancy. TNAU retained Rs 20 lakh without employing any international agency. This was also irregular.

3.2.9.3 Non-implementation of Tamil Nadu Horticulture Mission

The project proposed in April 2003 did not take off even as of April 2006 mainly due to non-formulation of viable project proposals and non-release of funds by Government.

Government launched (April 2003) Tamil Nadu Horticulture Mission (TNHM) with the following objectives: (i) Improving horticultural production through balanced nutrition management, (ii) Evolving suitable technology for regulating quality planting material and giving impetus to need based research, (iii) Providing adequate infrastructure for post harvest management, and, (iv) Encouraging active involvement of farmers. The estimated total expenditure for implementing TNHM was Rs 175 crore, spread over a period of five years; of which, Rs 145 crore were earmarked for projects through the CHPC, Rs 5 crore to TNAU and Rs 25 crore to Commissioner of Agricultural Marketing and Agricultural Business.

The State level committee of National Horticulture Board (NHB)[13] discussed only the seven projects costing Rs 87.44 lakh submitted by the CHPC in December 2003 as against the proposal to take up projects worth Rs 5.63 crore during 2003-04. It approved (December 2003) four projects costing Rs 43.44 lakh and directed the Department to resubmit the three other proposals after revising them as per NHB guidelines. NHB released (September 2004) Rs 10 lakh, out of its commitment of Rs 20 lakh for two

[13] Agency of Government of India for providing technical and financial support for development of horticulture in the country.

projects viz., 'Demonstration of high density orchids (Mango)' (Project cost: Rs 18.40 lakh) and 'High density plantation of cashew with drip and fertigation' (Project cost: Rs 18.04 lakh). The State Government also released (March 2006) Rs 16.12 lakh towards its share. For the two other approved projects NHB sanctioned Rs 50,000 each, but the amount was not released. The three projects, which, the State level committee of NHB directed resubmission after revision/recasting, were not resubmitted to NHB. Further, no new projects were formulated and submitted to Central agencies/ Government for financial assistance resultantly against outlay of Rs 5.63 crore the expenditure incurred under TNHM was miniscule.

Thus, the Project proposed in April 2003 did not take off even as of April 2006 mainly due to non-formulation of viable project proposals, non-release of funds by the Government and disinterest shown by the CHPC.

3.2.10 Manpower management

Availability and proper deployment of suitably trained manpower is crucial for the efficient functioning of the Department. It was noticed that large number of vacancies across all cadres of technical staff remained unfilled for long durations as of March 2006 as indicated below:

Name of post	No of posts Sanctioned	Men in position	Vacancies	Percentage of vacancies
Joint Director (JDH)	4	1	3	75
Deputy Director (DDH)	12	9	3	25
Assistant Director (ADH)	47	29	18	38
Horticulture Officer (HO)	190	178	12	6

In the test checked districts, three out of eight posts of ADH remained vacant for periods ranging from eight to twelve months. Further, five posts of HOs and fourteen posts of Assistant Agricultural Officers (AAOs) also remained vacant for periods ranging up to six years. The vacancies at the level of ADH, DDH and JDH were mainly due to procedural hurdles in approval of the promotion panels for those posts. Promotion panels prepared and submitted by the CHPC to the Government between January 2005 and June 2005 had not been approved (March 2006).

3.2.10.1 Deployment of staff for extension activities

Government had not fixed any norms for sanctioning staff for extension activities[14]. Failure to fix norms for manpower had resulted in wide disparity among different regions in the test checked districts of the State in terms of availability of manpower as detailed below:

[14] Extension activities: supply of pedigree planting material, providing advice on nutrition/pest management, promotion of new technology, farmers training, etc.

Name of selected District	No. of Blocks covered per HO	Horticultural area covered per HO (In ha.)	Horticultural area covered per AAO (In ha.)
Coimbatore	3.8	8,689	987
Cuddalore	2.6	9,474	1,754
Dharmapuri	2.8	10,108	1,596
Erode	5.0	5,688	569
Kanniyakumari	3.0	13,951	3,219
The Nilgiris	0.7	12,105	3,301
Vellore	2.9	3,344	498
Villupuram	5.5	4,677	416

CHPC submitted (July 2001) a proposal to employ one HO and two AAOs per block, one ADH per taluk, one DDH per district and an increased complement of ministerial staff. A total of 3,771 posts were proposed involving an additional staff cost of Rs 32.74 crore per annum. Government decided (July 2001) to take follow-up action for redeployment of staff from the Agriculture Department to the Horticulture Department. Commissioner of Agriculture, however, offered (March 2002) to surrender only 1,039 posts. In September 2004, the Staff and Expenditure Reforms Commission (SERC) (formed in November 2001) recommended the creation of 392 new posts in the Department and the earlier proposal to create 3,771 new posts was shelved.

The recommended 392 new posts were to be filled in by redeployment of staff from the Agriculture Department, which was not accepted by the Commissioner of Agriculture. Subsequently, in the Staff Committee meeting held in May 2005, it was decided to keep the recommendation of SERC in abeyance for one year. As a result, plan of the CHPC to strengthen the Department by expanding the extension activities did not materialise and the manpower for extension activities continued to be inadequate and poorly distributed.

Under the norms fixed by the Department, the AAOs and HOs are to visit the fields of all the beneficiary farmers. The tour diaries of the field staff did not indicate the number of farmers' holdings inspected by them.

Test check of tour diaries of five HOs and 19 AAOs in four districts for periods ranging from six months to one year during 2003-05 revealed that the HOs and AAOs spent only 44 *per cent* and 51 *per cent* of the working days respectively in the field. The major reason for the shortfall in field work was their preoccupation with routine office work either in headquarters or in the offices of ADH/DDH.

3.2.11 Monitoring

As per the existing norms, the ADHs were to monitor 50 *per cent* of the beneficiaries' field and DDH were to monitor 25 *per cent*. It was, however,

noticed that the actual number of field visits carried out during 2004-05 by ADH/DDHs were much less than the target, as indicated below:

Monitoring Officer	District	Total Number of beneficiary farmers	Target for field Inspection*		Number of beneficiary farmers' fields inspected	Percentage of inspection
			Per Year	Per day		
ADH	Dharmapuri	2,476	1,238	5	660	53
	Coimbatore	2,260	1,130	5	174	15
DDH	Dharmapuri	2,476	619	2.5	150	24
	Vellore	4,525	1,131	5	160	14
	Tiruvannamalai	3,799	950	4	200	21
	Krishnagiri	7,888	1,972	8	100	5

***** with reference to 240 working days in a year

This would indicate that the targets were impracticable. Further, the Department had no system to monitor and record the survival rate of planting material supplied to the farmers. A joint inspection (April and May 2006) by Audit and departmental staff of the fields of 46 farmers to whom fruit plants were supplied during 2002-04 under IHDS and Centrally sponsored scheme disclosed that the average survival rate was 73 *per cent.* The survival rate was zero in one case, 20 *per cent* in another case and 25 *per cent* in three cases out of 46 test checked fields in four districts. Dharmapuri District (10 fields inspected) had the lowest average survival rate of 65 *per cent* and the Cuddalore District (14 fields inspected) had the highest average survival rate of 77 *per cent.* While the Department could help individual farmers to replace withered plants to the extent of 92 *per cent* in Kanniyakumari District, in Dharmapuri the Department could replace plants only to the extent of five *per cent*.

This position illustrated the need for the closer monitoring to understand the survival rate of planting material supplied by different SHFs/private nurseries and to ensure remedial action.

3.2.12 Conclusions

Non-introduction of schemes contemplated in the Tenth Five Year Plan led to non-utilisation of outlay. The department lacked a well defined policy and the declared policy on floriculture was not implemented. Targets for area expansion were not achieved due to declining budgetary provision and non-exploitation of potential. Non-supply and delayed supply of planting material coupled with failure to ensure quality resulted in non-achievement of targets. SHFs failed to multiply the hybrid seeds introduced by TNAU and production of planting material also declined over the years. SCA under HADP was not fully utilised for supply of inputs to farmers at subsidised prices. There was no norm for provision of staff and monitoring of schemes was inadequate.

3.2.13 Recommendations

- Department should ensure optimum utilisation of the Plan outlay to achieve desired results.
- A clear Horticulture policy should be formulated immediately.
- Suitable system should be evolved to ensure that the entire Special Central Assistance and State's share for HADP reaches the beneficiaries.
- Department should ensure timely supply of hybrid and high yielding seeds and pedigree planting material to improve productivity.
- SHFs should multiply hybrid seeds introduced by TNAU and increase the production of planting material.

The above points were referred to Government in August 2006; reply had not been received (December 2006).

REVENUE DEPARTMENT

3.3 Tsunami Relief, Rehabilitation and Reconstruction

Highlights

An earthquake induced tidal wave, called tsunami hit the Tamil Nadu coast on December 26, 2004, causing extensive loss of life and damage to both public and private properties. A review of tsunami relief works revealed incorrect initial assessment of funds requirement, incorrect adoption of compensation rate/norms, retention of unutilised funds, utilisation of funds from Calamity Relief Fund in violation/excess of norms specified and for activities not sanctioned. Improper selection of sites for temporary shelters resulting in unfruitful expenditure and delay in construction of permanent houses necessitating continued maintenance of temporary shelters. Besides, the Town and Country Planning Act and Building Bye-laws were not amended and demarcation of Coastal Regulation Zone was not taken up to relocate the houses.

- **The Tamil Nadu Disaster Management Agency has not been set up to assist the State Disaster Management Authority. Necessary amendments to Town and Country Planning Act, Building Bye-laws etc., in the light of various disasters were yet to be proposed.**

(Paragraphs 3.3.6.1 and 3.3.6.2)

- **State Government received Rs 820.31 crore (Rs 767.55 crore in cash and Rs 52.76 crore in kind) and out of this had spent Rs 740.41 crore (including Rs 52.76 crore in kind) towards tsunami relief, rehabilitation and reconstruction activities upto July 2006.**

(Paragraph 3.3.7.1)

- **Funds amounting to Rs 4.87 crore and Rs 23.91 crore were drawn from Calamity Relief Fund for utilisation on activities, not prescribed in the guidelines of Government of India, and, in excess of the norms specified towards provision of utensils and clothing respectively.**

(Paragraphs 3.3.7.3 and 3.3.7.4)

- **Compensation of Rs 17.33 crore was extended to 5,416 fully damaged wooden catamarans in Nagapattinam District without verification by the joint team. The basis on which relief of Rs 6.38 crore was extended for 3,330 unregistered catamarans was not verifiable.**

(Paragraphs 3.3.8.1 and 3.3.8.2)

- **Poor site selection and non occupation of shelters resulted in an unfruitful expenditure of Rs 4.34 crore.**

(Paragraphs 3.3.8.4 and 3.3.8.5)

- **Out of 54,745 houses proposed, construction of 16,236 houses were under progress and another 25,417 houses were under initial stages of construction as of September 2006.**

(Paragraph 3.3.9.4)

3.3.1 Introduction

An earthquake measuring 8.6 on the Richter scale with its epicentre off the west coast of Northern Sumatra occurred on 26 December 2004 at 06.29 hours (IST). This earthquake generated massive destructive tsunami waves and hit the four coastal States (Tamil Nadu, Pondicherry, Kerala and Andhra Pradesh) and the Andaman Nicobar Islands in the Indian Ocean.

According to the State Government, 7,993 people lost their lives and 847 people were missing. 10,78,929 people were affected and 4,87,185 people were evacuated. Details of damage caused by tsunami, as assessed by the State Government and reported to Government of India (GOI) are given in **Appendix XIX.** Of the 13 coastal districts[1] declared as affected by the Government of Tamil Nadu by tsunami, three districts of Nagapattinam, Kanniyakumari and Cuddalore were severely affected. Immediately after the disaster, the State Government initiated relief and rehabilitation measures by way of accommodating the affected people in relief centres (cyclone shelters, schools, marriage halls, etc.) and distribution of relief package consisting of rice, kerosene, saree, dhoti, bed sheets besides cash doles for purchase of condiments and repair of damaged houses.

3.3.2 Organisational set up

Secretary to the Government, Revenue Department is in charge of tsunami relief and reconstruction at Government level. Secretary, Revenue Department is assisted by Special Commissioner and Commissioner of Revenue Administration (SC&CRA), who is authorised to draw and disburse the funds sanctioned by the Government to various Heads of Departments and District Collectors to provide relief measures to the affected people. A State Level Committee (SLC) for Calamity Relief Fund (CRF) Schemes under the Chairmanship of Chief Secretary to the Government was constituted for considering and sanctioning the proposals for relief assistance. A State Disaster Management Authority, constituted earlier in July 2003, under the Chairmanship of Chief Secretary to the Government continued to guide, facilitate, coordinate and monitor various disasters including tsunami.

[1] Chennai, Cuddalore, Kancheepuram, Kanniyakumari, Nagapattinam, Pudukottai, Ramanathapuram, Thanjavur, Thoothukudi, Thiruvallur, Thiruvarur, Tirunelveli and Villupuram.

3.3.3 Audit objective

The objectives of performance audit are to determine:

- the effectiveness of the institutional mechanism set up by the State Government for disaster management,
- the adequacy of funding for relief including deficiencies in the transfer of resources at the appropriate time,
- the efficiency of post disaster relief activities like identification of beneficiaries, provision of immediate assistance, provision of temporary shelter and
- efficiency, effectiveness in undertaking of long term relief activities such as replacement and reconstruction of assets including permanent houses.

3.3.4 Audit criteria

The criteria adopted to arrive at the audit conclusion were:

- Acts and rules in force for disaster management and the policy, plans etc., adopted by the Government,
- assistance received and utilised for the scheme,
- records relating to number of persons who had lost their houses and other assets like fishing vessels and the temporary relief extended to them; the scales/norms adopted for such relief and the restoration of infrastructure facilities including construction of houses and
- the monitoring mechanism adopted for follow-up on the extension of relief.

3.3.5 Audit coverage

The performance audit was conducted during November 2005 to March 2006 in the Revenue Department of the State Secretariat, Commissionerate of Revenue Administration, Disaster Management and Mitigation, 23 Heads of Departments and Corporations and six[2] of the 13 coastal districts which were severely affected by tsunami. The audit of all the six severely affected districts were taken up. The balance seven districts were classified as moderately affected. The audit covered the District Collectorates and all the connected district and taluk level offices of other departments of these six test checked districts.

[2] Cuddalore, Kanniyakumari and Nagapattinam - very severely affected districts. Chennai, Kancheepuram and Villupuram - severely affected districts.

Audit findings

3.3.6 Disaster management

3.3.6.1 Institutional arrangement by the State Government

The State Disaster Management Authority (Authority) was constituted (July 2003) under the Chairmanship of Chief Secretary to monitor various disasters by meeting atleast once in a quarter. Consequently a District Contingency Plan was prepared and followed in all the districts. The Authority, however, had drawn up a comprehensive Disaster Management Policy for the State, which was adopted by State Government only on 28 December 2004 and was placed in the Assembly during March 2005. To assist the Authority in discharging its functions, the Government ordered (January 2005) the establishment of the Tamil Nadu Disaster Management Agency (Agency) with SC&CRA as Chairman. The Agency was not established as of April 2006 as reported by SC&CRA. Government stated (October 2006) that a request of GOI to nominate the Chief Minister as the Chairperson of the Authority is under examination.

Necessary amendments to Town and Country Planning Act, Building Bye-laws were yet to be proposed.

Also, necessary amendments to Town and Country Planning Act, Building Bye-laws etc., in the light of various disasters were yet to be proposed to the Government by the Revenue Administration, Disaster Management and Mitigation Department.

3.3.6.2 Non-notification of rules under Disaster Management Act

State Government is yet to notify rules to carry out the provisions of Disaster Management Act, applicable to the State.

The Disaster Management Act, 2005 was notified by GOI on 26 December 2005. State Governments were also required to frame and notify rules to carry out the provisions of the Act that would be applicable to them. Government stated (October 2006) that the GOI Act was sufficient and necessary rules would be framed for this purpose as suggested by GOI.

3.3.6.3 Non-demarcation of Coastal Regulation Zone

Though GOI issued orders in December 1999 for the demarcation of CRZ along the coast, work is yet to be taken up.

GOI issued (January and December 1999) orders to take up the demarcation of Coastal Regulation Zone (CRZ) by fixing stone pillars on the High Tide Line (HTL) and Low Tide Line (LTL) along the coast with the assistance of Institute of Remote Sensing, Anna University, Chennai or other authorised agencies mentioned therein. However, it was only in October 2005 after the occurrence of tsunami, that the State Government sanctioned Rs 12.50 crore for demarcation of HTL along the coast, superimposition of HTL reference points on village cadastral maps, preparation of integrated coastal zone management plan, erection of stone pillars on the HTL reference points, preparation of coastal vulnerability maps and preparation of training modules and conduct of training and awareness programmes, and released (October 2005) a sum of Rs 3.28 crore under World Bank assisted Emergency Tsunami Reconstruction Project. Government also stated (October 2006) that the work of demarcation of the HTL along the coastal areas had been entrusted to the Institute of Remote Sensing of Anna University.

3.3.7 Sources of funding and utilisation

3.3.7.1 Receipt and utilisation of funds

State Government prepared and forwarded a memorandum to the GOI on 4 January 2005 seeking assistance of Rs 4800 crore and allotment of 54,000 Metric Tonnes (MTs) of food grains to the affected families, the details of which are given in **Appendix XX**. In a supplementary to the above Memorandum, an additional sanction for Rs 5.82 crore was requested from the GOI on 15 January 2005. A Central Team visited the areas affected by tsunami in the State for assessing the extent of damage and requirement of funds for relief, rehabilitation and reconstruction. Based on the memorandum of the State Government and the report submitted by the Central Team, the GOI sanctioned (February 2005) Rs 2293.19 crore and 54,000 MTs of rice under Rajiv Gandhi Rehabilitation Package for tsunami affected areas. Of the amount sanctioned Rs 250 crore were released from National Calamity Contingency Fund (NCCF) as immediate assistance.

The details of assistance received in cash and kind (Rs 820.31 crore) as against the sanctioned amount (Rs 2347.19 crore[3]) are given below along with details of expenditure of Rs 740.41 crore (including Rs 68.30 crore paid from Chief Minister's Public Relief Fund (CMPRF)) incurred towards tsunami relief, rehabilitation and reconstruction activities as of 31 July 2006.

(Rupees in crore)

Sl No.	Component	Amount sanctioned by the GOI	Amount received from the GOI	Expenditure
	Assistance in cash			
1.	Relief and Response (CRF/NCCF)	617.20	617.20	481.60@
2.	ARWSP	8.50	8.50	4.62
3.	Fishermen subsidy (CRF/NCCF)	441.08	131.91	150.49
4.	Loan from Banks	566.47	Nil	Nil
5.	Fishing Harbour Grant (CRF/NCCF)	9.94	9.94	11.26
6.	Housing assistance	650.00	Nil	39.68
	Total Funds	**2293.19**	**767.55**	**687.65**
	Assistance in kind			
7.	Rice under Sampoorna Grameen Rozgar Yojana (SGRY)	54.00 (54,000 MTs)	52.76 (52,760 MTs)	52.76
	Grand Total	**2347.19**	**820.31**	**740.41**

@ Includes Rs 68.30 crore paid from CMPRF towards gratuitous relief.

[3] Includes cost of 54,000 MTs of rice requisitioned in kind under Sampoorna Grameen Rozgar Yojana (SGRY).

It was observed in audit that the expenditure reported (January 2006 to March 2006) by Revenue, Animal Husbandry and Fisheries Departments in four districts was not actual as it included unutilised amount of Rs 5.99 crore[4]. Further, perusal of connected records revealed that the implementing agencies in five districts and the Director of Animal Husbandry had remitted Rs 22.24 crore[5] to Government account during February 2005 to March 2006.

3.3.7.2 Unutilised assistance lying with implementing agencies

Test check of the records revealed that Rs 88.89 crore were lying unutilised with the Director of Fisheries (Rs 86.05 crore), District Collector, Kanniyakumari District (Rs 0.49 crore) and Chennai Port Trust (Rs 2.35 crore) as discussed below:

Based on the proposal submitted by Director of Fisheries (DOF), Government sanctioned Rs 469.96 crore between December 2004 and November 2005 for extending relief to the fisheries sector. The SC&CRA released Rs 257.86 crore to DOF upto November 2005. DOF in turn released Rs 171.81 crore to the implementing officers under his control upto December 2005 and the remaining amount of Rs 86.05 crore was lying idle in the Personal Deposit Account of DOF as of March 2006. The main reasons for unutilised amount were higher sanctions issued by Government due to adoption of compensation amount higher than the specified norms for various kinds of vessels, incorrect assessment of the number of damaged vessels, wrong classification of vessels for payment of compensation, etc.

Government sanctioned (March 2005) Rs 3 crore to Kanniyakumari District towards relief for 300 shore seines at the rate of Rs 1 lakh per shore seine (a fishing net). The allotment was subsequently reduced to Rs 1 crore for relief to 100 shore seines at the request of District Collector. Even against this reduced allotment, an expenditure of Rs 0.51 crore alone was incurred by the District Collector and the remaining amount of Rs 0.49 crore was still lying unutilised in his Savings Bank account. This illustrates the incorrect assessment of damaged shore seines by Government.

Out of Rs 4.31 crore given (June 2005) by GOI through CRF to the Chennai Port Trust for taking relief works in Chennai Fishing Harbours I and II, Rs 8.93 lakh alone was utilised as of March 2006. While Rs 1.87 crore only were required for works to be taken up under relief works an amount of Rs 2.35 crore over and above the amount required were retained by the Chennai Port Trust without requirement. Due to such unnecessary retention, possible utilisation of such amounts for other relief measures was prevented.

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4 Cuddalore: Rs 0.96 crore, Kanniyakumari: Rs 0.83 crore, Nagapattinam: Rs 2.31 crore and Villupuram: Rs 1.89 crore.

5 Chennai: Rs 2.30 crore, Cuddalore: Rs 5.57 crore, Kancheepuram: Rs 0.41 crore, Nagapattinam: Rs 12.73 crore, Villupuram: Rs 0.16 crore and the Director of Animal Husbandry: Rs 1.07 crore.

3.3.7.3 Irregular drawal of funds from CRF

Funds to the tune of Rs 4.87 crore were drawn from CRF for activities not prescribed in the guidelines of the Ministry.

Funds were to be drawn from CRF only for incurring expenditure on certain activities prescribed by the Ministry of Home Affairs from time to time. The Ministry had also prescribed the norms and unit cost for various purposes in their guidelines for incurring expenditure from CRF.

Perusal of records revealed that in three cases, as detailed below, funds of Rs 4.67 crore were drawn from CRF of which Rs 4.02 crore was utilised though the activities were not prescribed in the CRF guidelines of the Ministry.

(Rupees in crore)

Sl. No	Nature of payment made	Amount drawn	Amount utilised
1	Reconstruction and repair of two Memorials which were damaged by tsunami	1.10	1.10
2	Construction of temporary bridge across Pazhayar river in the place of permanent bridge which was damaged by tsunami	1.38	1.38
3	Construction of Rubble mound sea walls at six places in Kanniyakumari district to prevent intrusion of sea water	2.19	1.54
	Total	**4.67**	**4.02**

GOI sanctioned construction of 65 Anganwadis damaged in tsunami, at a cost of Rs 80 lakh, shareable between GOI and the State Government at 75:25. However, the entire State share of Rs 20 lakh was irregularly met from CRF instead of meeting it from State funds.

The SC&CRA replied (August 2006) that all items of assistance could not be covered by existing norms of CRF, as tsunami was recognised as an unprecedented calamity. No concurrence, however, was obtained from GOI for incurring expenditure on the items not specified under CRF guidelines and these amounts could have been met from the State funds.

3.3.7.4 Excess drawal of funds from CRF

Rs 23.91 crore spent from CRF in excess of specified norms towards utensils and clothing.

Rupees 23.91 crore were spent from CRF towards supply of utensils and clothing in excess of the norms specified as indicated below:

(Rupees in crore)

Item	Ceiling fixed per family under CRF	Expenditure incurred		Amount eligible as per ceiling	Expenditure in excess of norm
Utensils	Rs 500	29.31	(2,93,114 families @ Rs 1,000 per family for utensils)	14.66	22.57
		7.92	(1,18,397 families for stoves, boxes, stainless steel kudams)		
Clothing	Rs 500	16.00	(2,93,114 families)	14.66	1.34
Total		**53.23**		**29.32**	**23.91**

The SC&CRA replied (August 2006) that the norms/scope of expenditure under CRF needed to be relaxed in case of bigger calamity like tsunami. No orders for such relaxation had been obtained from GOI.

3.3.8 Deficiencies and delay in delivery of mid term relief activities

Fisheries sector

3.3.8.1 Extension of relief without verification

Relief of Rs 17.33 crore was extended to wooden catamarans without verification.

Government orders (February 2005), stipulated verification and certification of the claims for fully damaged wooden catamarans by a joint team consisting of officials from the Revenue and Fisheries Departments before payment. Despite this 5,416 fully damaged wooden catamarans were extended relief to the tune of Rs 17.33 crore (at Rs 32,000 each) during February 2005 in Nagapattinam District without verification by the joint team.

Subsidy for damaged nets was extended to 819 fishermen in two districts without verifying the authenticity of the claims.

Fishing net subsidy was extended to 819 fishermen in Villupuram District (488) and in Cuddalore District (331) at the rate of Rs 10,000 each on receipt of applications without verifying the authenticity of the claims. After the payment of subsidy in all these cases, one of the teams entrusted with the verification of claims in Cuddalore District had reported (March 2006) after inspection that they could not establish the existence of 210 catamarans with the beneficiaries in Sothikuppam village before the occurrence of tsunami. Thus the amount of relief of Rs 21 lakh extended to these 210 beneficiaries was irregular as without existence of catamarans, fishing nets subsidy had been released to them. For the remaining 609 claims, no records were produced to Audit for ensuring their correctness/eligibility.

3.3.8.2 Irregular expenditure

Fisheries Department assessed that 179 Fibre Reinforced Plastic (FRP) boats were lost with nets in Samanthanpettai village of Nagapattinam District and the first instalment of relief was extended to all at the rate of Rs 20,000 each. However, a joint inspection conducted by the Revenue and Fisheries Departments revealed that only 11 boats were lost. Thus relief to the tune of Rs 33.60 lakh extended to the remaining 168 boats became irregular.

According to the Tamil Nadu Marine Fishing Regulation (TMFR) Act, 1983 all fishing vessels have to be registered with the Fisheries Department and licence obtained for conducting fishing activities. The validity of licence was three years from the date of issue as per the existing rule in force from 5 January 2000. The number of catamarans registered in four districts right from the commencement of TMFR Act till November 2004 (before tsunami) were 10,209[6], whereas the number of catamarans to which relief for damages extended were 13,539[7]. This clearly indicated that relief of Rs 6.38 crore were

[6] Chennai: 1,190, Cuddalore: 5,914, Kancheepuram: 2,127 and Villupuram: 978.

[7] Chennai: 1,661, Cuddalore: 6,392, Kancheepuram: 2,778 and Villupuram: 2,708.

given to 3,330 unregistered catamarans in these four districts. The basis on which relief of Rs 6.38 crore was extended to these catamarans could not be verified in Audit since they were unregistered.

3.3.8.3 Excess/avoidable expenditure

Relief of Rs 15.61 crore was extended to 374 mechanised boats which were not insured despite the stipulation in Tamil Nadu Marine Fishing Regulation Rules, 1983 (as amended in January 2000) to the effect that all mechanised fishing vessels should be insured. The Assistant Director of Fisheries (ADF), Nagapattinam replied (April 2006) that despite issue of notices for insuring the boats, the boat owners refused to insure on the plea that the insurance premium was exorbitant.

Relief of Rs 2.35 crore was extended in excess in respect of 969 and 597 FRP catamarans[8] in Villupuram and Cuddalore Districts respectively at the rate of Rs 40,000 applicable to FRP Vallams[9] instead of Rs 25,000 applicable to FRP catamarans. The departmental officers of these two districts had also conceded that FRP vallams were not available in their districts.

Housing sector

3.3.8.4 Poor site selection for temporary shelters

Improper selection of site for construction of temporary shelters in Chennai resulted in an unfruitful expenditure.

Commissioner, Corporation of Chennai constructed (February 2005) at Kannagi Nagar in Okkium Thoraipakkam 600 temporary shelters at a cost of Rs 62.67 lakh (including provision of house lights and street lights) in addition to the 700 such shelters constructed by Non-Governmental Organisations (NGOs) to accommodate the tsunami victims of South Chennai. However 1,186 families alone occupied the houses. As the site selected was a low-lying area the entire site was waterlogged due to rain and people could not live in these shelters. Efforts made by the Collector of Chennai to construct semi-permanent shelters for these families at an alternate site did also not fructify due to litigation with regard to land. Thus, poor site selection for constructing temporary shelters had resulted in unfruitful expenditure of Rs 62.67 lakh. Also some of the shelters were destroyed in fire which broke out subsequently on 25 December 2005 and no action had been initiated to dismantle at least the remaining temporary shelters and dispose of the materials in public auction to avoid further loss.

Similarly, Rs 1.95 crore (including provision of house lights and street lights) incurred on construction of 2,142 temporary shelters at Kargil Nagar lying within Tiruvottiyur Municipal area to accommodate the tsunami victims of North Chennai also was unfruitful as these shelters were constructed in a

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[8] FRP catamarans are boats made of FRP material in a single piece with low draft and free board and of length 24 to 27 feet. The breadth, width and depth will be limited.

[9] FRP Vallams are boats made of single piece Fibre Reinforced Plastic material with two feet draft and three to four feet free board with facilities provided for fish hold and net and of length 28 to 30 feet.

low-lying area prone to waterlogging. Further, all the shelters were destroyed in two major fire accidents that occurred on 15 and 23 June 2005. Thus the selection of a wrong site resulted in unfruitful expenditure of Rs 1.95 crore.

3.3.8.5 Unfruitful expenditure on construction of temporary shelters

In Villupuram District, 2,205 shelters were not occupied rendering its cost of construction of Rs 1.76 crore unfruitful.

In Villupuram District, out of 4,721 shelters constructed (3,305 by the Government and 1,416 by NGOs), 2,205 shelters constructed by the Government and 821 by NGOs were not occupied by the victims. The expenditure of Rs 1.76 crore incurred by the Government on 2,205 shelters thus became unfruitful. These temporary shelters could not be used for alternative purposes as they had a life of only six months.

3.3.8.6 Unfruitful expenditure towards construction of temporary shelters

In Kanniyakumari District 221 temporary shelters were constructed at a cost of Rs 0.22 crore for families not affected by tsunami on the plea that water had entered and damaged their houses in July 2005 seven months after tsunami. This expenditure was not justified under tsunami rehabilitation.

Under Relief Package I, each of the 1,18,350 families was given a package of assistance [10] including Rs 2,000 for putting up a hut as a temporary measure. However, the number of houses/huts estimated by SC&CRA as damaged was only 59,803. Government reported (October 2006), that as it was not possible for two or three families to stay together in a temporary accommodation, they needed to be assisted separately. The reply was not tenable as the relief was given only for putting up a hut temporarily before accommodating them in temporary shelters followed by permanent houses. Considering the rate of relief of Rs 1,200 admissible under CRF towards severely damaged kuchha house, the relief admissible to 1,18,350 families worked out only to Rs 14.20 crore. Thus Rs 9.47 crore[11] was paid in excess in this regard. This assistance was also superfluous as temporary shelters were subsequently provided to them by either Government/NGOs.

3.3.8.7 Irregular release of subsidy to farmers - Agricultural Sector

Test check of the records of 18 Primary Agricultural Cooperative Banks in Nagapattinam District revealed that compensation of Rs 0.14 crore was paid as relief for damaged crops (May 2005) to the member farmers, who had already received compensation under the earlier flood relief by Revenue Department in May 2005. There was no possibility of raising fresh paddy crops due to continuous waterlogging in the fields since heavy rainfall occurred during September – November 2004. Expenditure under tsunami relief was therefore irregular. The SC&CRA replied (September 2006) that the District Collector,

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[10] One set consisting of one dhoti, one saree and two bed sheets, 60 kgs rice, three litre kerosene, Rs 1,000 for purchase of condiments, oils, pulses etc., Rs 1,000 for utensils and stove.

[11] Rs (2,000-1,200) x 1,18,350 = Rs 9.47 crore.

Nagapattinam had been requested to recheck the beneficiaries and recover the relief granted to those for whom the flood relief was already granted.

3.3.9 Deficiencies and delay in permanent relief works

3.3.9.1 Poor percentage of creation of Assets – wooden catamarans

Poor percentage in creation of assets even after one year.

In Cuddalore District, relief of Rs 14.88 crore was extended (May 2005) for replacement of 4,649 fully damaged catamarans and in Nagapattinam District, relief of Rs 17.33 crore was extended (February 2005) for replacement of 5,416 fully damaged catamarans. The asset creation reports, however, indicated that 282 (6 *per cent*) and 1,581 (29 *per cent*) catamarans alone were replaced in these districts respectively. As the livelihood of the fishermen was dependant on the craft for fishing and the intention of the Government was to enable the fishermen community to get back to normalcy at the earliest possible time, the poor percentage of asset creation would affect their future livelihood. The ADF, Nagapattinam stated (April 2006) that the subordinates were instructed to identify the problems and expedite.

3.3.9.2 Delay in acquisition of land for construction of houses

Tsunami Housing Reconstruction Programme announced (March 2005) by the State Government originally envisaged construction of about 1,30,000 concrete houses at an approximate cost of Rs 1.50 lakh each. The land for the houses was to be given free of cost by the Government. The construction of houses in all the affected districts, other than Chennai and Thiruvallur, was entrusted by the District Collectors to NGOs, voluntary agencies and charitable institutions. In Chennai and Thiruvallur Districts, multi-storied tenements were proposed to be built through Tamil Nadu Slum Clearance Board. Subsequently, the Principal Commissioner and Commissioner of Revenue Administration stated (October 2006) that Government had decided to construct 54,745 houses (23,010 by Government and 31,735 by NGOs).

In order to acquire lands on a war footing for the construction of these houses, the State Government empowered (February 2005) the District Level Negotiation Committee headed by the District Collector to purchase lands through private negotiations upto a maximum of 200 *per cent* of the market value or guideline value whichever was less without any monetary ceiling. However, no evidence was available in the records made available to Audit to indicate that graded negotiation had been conducted by the Committee with the land owners as ordered (February 2005) by Government. As such audit could not ensure that the value fixed by the Committee was reasonable. Land to an extent of 49.67 hectares was acquired (June 2005 to January 2006) in the four districts[12] at the cost of Rs 2.62 crore by paying 200 *per cent* of market value. Government stated (October 2006) that the Collectors had started the negotiations based on the guideline value or market value whichever is less

[12] Cuddalore: 6.42 Ha (Rs 0.30 crore); Kancheepuram: 4.05 Ha (Rs 0.60 crore); Kanniyakumari: 8.30 Ha (Rs 1.04 crore) and Nagapattinam: 30.90 Ha (Rs 0.68 crore).

and then proceeded to complete the negotiation and admitted that the various stages in negotiation were not mentioned in the minutes. As such audit could not ensure the veracity of the negotiations made, if any, through the records.

Acquisition of land for construction of houses for affected families is still in progress.

Government sanctioned (May 2005 to November 2005) Rs 45.87 crore to nine districts for the acquisition of land. The acquisition was still in progress in six districts and the expenditure incurred upto 12 June 2006 was Rs 39.67 crore leaving an unspent balance of Rs 6.20 crore with eight District Collectors. In six districts, 97.265 hectares[13] of land was yet to be acquired. While District Collector at Chennai had Rs 2 crore without any proposal, the District Collectors of Cuddalore and Thiruvallur had Rs 1.16 crore with them even after completion of acquisition of land.

3.3.9.3 Commencement of construction without approval of layout plan

Layout plans for construction of permanent houses were kept pending due to various deficiencies.

After taking note of the various regulations under the CRZ Notifications issued by the GOI, the State Government formulated a specific policy for the implementation of housing reconstruction programme for the tsunami affected families. Perusal of connected records revealed the following:

The layout plans prepared and sent by nine District Collectors of Coastal districts (except Thanjavur, Thiruvarur, Ramanathapuram and Pudukottai) for construction of permanent houses were kept pending with the Regional Deputy Directors of Town and Country Planning for various reasons such as sites falling within 500 metres of HTL, non-furnishing of approach road details, etc. Out of 14 locations for which site plans were submitted in Villupuram District, clearance was given to six site plans as of August 2006. Similarly, out of 51 layout proposals received from the Collectorates of Tirunelveli, Thoothukudi and Kanniyakumari Districts by the Regional Deputy Director of Town and Country Planning, Tirunelveli, 15 proposals of the district were subsequently approved. The remaining proposals were pending, as they had fallen under CRZ limits requiring exemption of statutory provisions. The number of houses taken up for construction included 942 houses located within 200 metres of HTL in Kanniyakumari (531) and Villupuram (411) Districts, of which 333 houses were completed (Kanniyakumari: 305 and Villupuram: 28). Taking up of construction of new houses within 200 metres of HTL was against the CRZ Notifications and hence irregular. Thus, construction of permanent houses to tsunami victims was started without approval of proper layout plans from the Town and Country Planning Department, which was irregular.

942 houses taken up for construction in two districts were within 200 metres of HTL, in violation of notifications issued under CRZ.

3.3.9.4 Delays in construction of permanent houses

Out of 54,745 houses proposed to be constructed the details regarding the number of houses taken up for construction, completed and in progress as of September 2006 were as under:

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[13] Kancheepuram: 22.250 Ha, Kanniyakumari: 1.010 Ha, Nagapattinam: 26.450 Ha, Thoothukudi: 4.415 Ha, Tirunelveli: 26.315 Ha and Villupuram: 16.825 Ha.

Sl. No.	Number of houses						
	Number of Districts	Construction done by	Taken up for construction	Constructed	Handed over (out of col.(4))	In progress[14]	Under initial stages[15]
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	7 districts	NGOs	31,735	9,190	7,243	14,480	7,587
2.	2 districts	TNSCB	23,010	3,902	3,741	1,756	17,830
			54,745	**13,092**	**10,984**	**16,236**	**25,417**

Out of 41,653 houses under progress, 16,236 were under construction and 25,417 were in the very initial stages. Officer on Special Duty (Relief and Rehabilitation) stated (September 2006) that it is expected that about 40,000 houses would be ready for occupation by December 2006 and the remaining by March 2008.

Construction of houses was entrusted to the NGOs, selected by the District Collectors, duly adhering to the guidelines prescribed by Revenue Department. A Memorandum of Understanding (MoU) was signed with the selected NGO in each case of construction, duly incorporating the time of commencement of construction, course of progress and the date of completion of works. In the event of non-completion of work by the prescribed time, the District Collector is empowered to take such action as may be deemed fit to debar and blacklist the NGO from undertaking such work in future anywhere in the country and also claiming any tax exemptions, concessions etc., under the provisions of any act in force under the State and Central Acts.

The delayed acquisition of lands and the consequent delay in construction of permanent houses had necessitated continued maintenance of temporary shelters. The amount incurred on these temporary shelters including provision of water, power and sanitary facilities in three of the test checked districts alone upto March 2006, worked out to Rs 3.17 crore[16].

3.3.10 Conclusions

Tamil Nadu Disaster Management Authority is to be reconstituted and the State Disaster Management Plan is yet to be prepared. Necessary amendments to Town and Country Planning Act and Building Bye-laws have not been proposed and Disaster Management Rules has not been notified. Demarcation of Coastal Regulation Zone along the coast is yet to start. Incorrect initial assessment of funds/infrastructure requirement resulted in release of funds in excess and consequent retention of Rs 88.89 crore without requirement by Fisheries Department, District Collector, Kanniyakumari and Chennai Port

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[14] Under construction by NGOs: Nagapattinam (10,128), Kancheepuram (1,601), Kanniyakumari (850), Villupuram (574), Tirunelveli (948) and Thoothukudi (379) Under construction by Government: Chennai (1,392), Thiruvallur (364).

[15] Under initial stages with NGOs: Nagapattinam (5,063), Kancheepuram (1,539), Kanniyakumari (110), Villupuram (433), Tirunelveli (244), Thoothukudi (198). Under initial stages with Government: Chennai (12,927), Thiruvallur (4,903).

[16] Chennai: Rs 0.59 crore, Kanniyakumari: Rs 0.70 crore and Nagapattinam: Rs 1.88 crore.

Trust. Funds amounting to Rs 28.78 crore were drawn from Calamity Relief Fund towards various activities not prescribed in Government of India guidelines or in excess of the specified norms. Improper selection of site for temporary shelters in Chennai and non occupation of constructed temporary shelters in Villupuram District had resulted in an unfruitful expenditure. Delay in construction of permanent houses necessitated the continued maintenance of temporary shelters at huge cost even after two years since the disaster.

3.3.11 Recommendations

- Activities/schemes and the norms/unit cost prescribed by Government of India in their guidelines on Calamity Relief Fund should be adhered to and the expenditure on activities not covered under the guidelines and the expenditure over and above the norms/unit cost should be met from State funds.

- The initial assessment of eligible beneficiaries or requirement of funds for relief activities should be made as accurately as possible based on the basic records available at village/taluk/district level.

- Except for payment of immediate relief, further relief assistance/provision of relief materials etc., should be made only after sufficient cross verification through fresh surveys/enumeration or joint inspection by personnel of different departments. Basic level identification at village level should be conducted by involving Panchayati Raj machinery etc., to avoid ineligible beneficiaries, duplication and overlapping.

- Necessary amendments to Town and Country Planning Act, Building Bye-laws needs to be incorporated and Disaster Management Rules notified at an early date, enabling the houses to be located in non-hazard prone areas duly adopting disaster resistant technologies.

- Construction of houses should be closely monitored and in the event of there being any delay, necessary action as envisaged in the MoU should be taken.

SCHOOL EDUCATION DEPARTMENT

3.4 Sarva Shiksha Abhiyan

Highlights

The Sarva Shiksha Abhiyan is a programme to provide elementary education for all children in the 6 to 14 age group by 2010, with the active participation of the community in the management of schools by effectively involving the Panchayati Raj institutions, school management committees, village and urban level education committees, parent-teacher associations and other grass-root level structures. Test check of records relating to Sarva Shiksha Abhiyan revealed non-receipt of Government of India share approved in their Annual Plan in full for the period 2001-06, non-achievement of the specified teacher-student ratio, non-coverage of out-of-school children and continuance of higher drop out rate at upper primary level.

- **Government of India had not released their full share as per the Annual Plan approved for the programme every year during 2001-06 and the shortfall amounted to Rs 319.32 crore. Delays ranging between one and ten months were noticed in release of State's share during 2001-06 under the programme.**

(Paragraph 3.4.7.2)

- **The State level drop-out rate as of September 2005 at primary level and upper primary school level is 3.81 *per cent* and 7.58 *per cent* respectively.**

(Paragraph 3.4.8.4)

- **As of March 2006, 1.12 lakh children of the age group 6-14 years were out-of-school, indicating that the main objective of bringing all children in schools/other centres by 2005 had not been achieved.**

(Paragraph 3.4.8.5)

- **The teacher-student ratio in primary and upper primary schools in 2005 was 1:41 and 1:54 respectively as against the specified norm of 1:40 under the programme. The ratio was not achieved in 14 districts at primary level and in 26 at upper primary level out of 30 districts.**

(Paragraph 3.4.8.6)

3.4.1 Introduction

The objectives of Sarva Shiksha Abhiyan (SSA) are to (i) have all children in schools/Education Guarantee Centres/Alternate Schools/Back-to-School Camps by 2003 (modified to 2005 in August 2005), (ii) ensure that all children complete five years of primary schooling by 2007 (modified to 2010 in August 2005), (iii) ensure that all children complete eight years of elementary schooling by 2010 (deleted in August 2005), (iv) bridge gender and social category gaps at primary stage by 2007 and at elementary education level by 2010 and (v) achieve universal retention by 2010.

3.4.2 Organisational set up

SSA is implemented by Tamil Nadu State Mission of Education for All, a Society formed in 1994-95. The affairs of the State mission are administered by an Executive Committee (EC) chaired by Secretary (School Education) and Secretary (Finance) and Secretary, Planning and Development Department as members. The State Project Director (SPD) is the Member Secretary of the Committee and also responsible for operationalising and implementing the scheme in the State. At the district level, the Chief Educational Officer designated as District Project Coordinator (DPC) implements the programme. At the block level, the Block Education Officer (Block Resource Centre (BRC)) implements the scheme. The Village Education Committee (VEC) consisting of the village panchayat president, school headmaster, head of Parent-Teacher Association (PTA) and ward member is involved in the implementation of the programme.

3.4.3 Audit objectives

The main objectives of audit were to

- evaluate and examine the efficacy of planning of various components of the programme,
- examine the adequacy of requirement of funds given for implementation and to evaluate the utilisation of funds as per the approved plan,
- assess whether major interventions were carried out as per norms fixed like the teacher-student ratio, coverage of out-of-school children, drop-out rate etc.,
- examine the adequacy of infrastructural facilities and maintenance/ repair of school buildings and
- assess the efficacy of the mechanism for periodic review and monitoring.

3.4.4 Audit criteria

The audit criteria used for assessing the performance of various components of SSA were:

- the extent of involvement of the State Implementation Agency and other connected units in planning,
- standards of output and the benchmarks of performance under various components and major interventions under SSA,
- standards of education comprising of availability of teachers, teachers' training, requirement of infrastructure in schools etc. and
- outcome of the monitoring mechanism and evaluation/follow-up of various components under SSA.

3.4.5 Audit methodology and coverage

The implementation of the programme for the period 2001-06 was reviewed during June 2005-August 2005 and April 2006-May 2006 by test check of records in School Education Department in State Secretariat, State Project Directorate and connected offices in seven districts (Chennai, Coimbatore, Madurai, Ramanathapuram, Salem, Tiruchirappalli and Thoothukudi)[1], Block Resource Centres, Education Guarantee Scheme Centres/Alternative and Innovative Education Centres in 21 Blocks and 126 schools.

Social and Rural Research Institute (SRI), a specialist unit of IMRB International was commissioned for a nationwide study of SSA to assess the extent of coverage of targeted group of children, SC/ST children, the enrolment across the genders, the reach of the programme etc. The survey covered 300 primary sampling units (urban blocks: 180 and rural villages: 120) in the entire State. A total of 37,158 households were listed out of which 12,295 were found eligible and a total of 5,834 households (urban: 3,453 and rural: 2,381) were covered for the study.

The sampling plan (Design and Estimation procedure) adopted by SRI and a summary of its findings are furnished in **Appendix XXI and XXII** respectively. Certain findings of the survey are also included in the review at the appropriate places. The audit findings with reference to the audit objectives are given in the succeeding paragraphs. The audit objectives and the audit criteria were discussed (August 2005) with the Secretary, School Education and the findings including executive summary of SRI survey were communicated to State Government in July 2006.

[1] Chennai was selected being the State Capital. The other districts were selected using the methodology of Probability, Proportional to size with Replacement.

3.4.6 Planning

3.4.6.1 Delay in submission of Annual Work Plan and Budget to Government of India

Delayed submission of Annual Work Plan and Budget during 2002-04.

The Annual Work Plan and Budget (AWPB) for a financial year should be submitted in March of the previous year. The State Implementation Society (Society), however, submitted the AWPBs to Government of India (GOI) belatedly in September 2002, May 2003 and May 2004 respectively. For 2005-06, the EC discussed and approved the AWPB on 16 March 2005 and the same was submitted to GOI on 21 April 2005. For the years 2001-03, after the Project Approval Board (PAB) of GOI approved the outlay (September 2002, May 2003), the EC discussed and approved the Plans only in November 2002 and May 2003 respectively. As the EC of the Society administers its affairs and is responsible to ensure achievement of the Society's objectives, the benefit of the discussion of AWPB for these years by EC for evaluation of the Society's achievements and its requirements was lost.

3.4.7 Financial management

3.4.7.1 Financial achievement

The expenditure under the programme was borne by GOI and State Government in the ratio of 85:15 up to 2001-02. This was revised to 75:25 during 2002-07 (Tenth Plan period).

The details of outlay approved for the State and the funds released by GOI and State Government and expenditure incurred under the programme during 2001-06 are given below:

(Rupees in crore)

Year	Outlay approved	Opening balance	Funds released by		Total funds available	Expenditure incurred	Closing balance
			GOI	State Government			
2001-02	77.71	Nil	33.03	5.83	38.86	Nil	38.86
2002-03	184.22	38.86	135.27	45.09	219.22	104.27 (47.6)	114.95
2003-04	404.93	114.95	104.48	57.08	276.51	245.37 (88.7)	31.14
2004-05	449.04	31.14	265.17	88.39	384.70	374.03 (97.2)	10.67
2005-06	487.82	10.67	353.30	117.76	481.73	479.62 (99.6)	2.11
Total	**1603.72**		**891.25**	**314.15**		**1203.29**	

Figures in brackets indicate the percentage of utilisation of the total funds available.

The expenditure of Rs 479.62 crore reported for 2005-06 includes Rs 7.61 crore given to the Tamil Nadu Text Book Corporation as advance amount for printing charges of SLM cards, Rs 63.91 lakh given to Electronic Corporation of Tamil Nadu Limited (ELCOT) for supply of computers and Rs 43.22 lakh given to various agencies towards purchase of books. As compared to the State's Annual Plan Outlay for SSA approved by the PAB of GOI, the percentage of expenditure during 2002-03 to 2005-06 were 57, 61,

83 and 98 respectively. With reference to the funds available, the percentage of such expenditure was 47.6, 88.7, 97.2 and 99.6 during these four years.

3.4.7.2 Flow of funds

GOI share earmarked in the approved annual plan was not fully received.

GOI did not release their share in full as per the annual plan, approved every year during 2001-06 and there was a shortfall in release of funds by GOI to the extent of Rs 319.32 crore during 2001-06.

Delayed release of Central share.

Under SSA, GOI has to release its share directly to the Society, in two instalments, in April and September in each year. However, in none of the four years, GOI released the funds in April and September as scheduled and during 2002-06, the assistance was released in two to six instalments.

Delayed release of State share.

Against the State Government's commitment to transfer its share to the Society within 30 days of receipt of GOI contribution, there were delays ranging from one to 10 months in releasing its share during 2001-06. For the GOI share of Rs 100 crore released on 17 November 2005 and Rs 79.23 crore released on 22 January 2006, the matching State share was released belatedly on 11 April 2006.

3.4.7.3 Financial performance of the components

Though the approved annual outlay contains component-wise break-up details, both the Central and State shares were released without indicating the component-wise details. As a result, Audit could not make a comparison of component-wise receipt vis-à-vis expenditure. However, the details of component-wise outlay and achievement during 2002-06 are given in **Appendix XXIII**. This reveals that under ten components during 2002-03, seven components during 2003-04 and one component during 2004-05, the achievement was below 60 *per cent* as compared to the plan outlay approved by the PAB. During 2005-06, the achievement under all the components was good and ranged between 92 and 100 *per cent*.

3.4.7.4 Deficiency in utilisation of maintenance grants

Non-prioritisation of maintenance grant.

In terms of GOI guidelines, an annual grant of Rs 5,000 can be given to each school for maintenance and repair of school building on specific proposal of concerned school committees involving community participation and contribution. Scrutiny revealed that DPCs released this grant every year without obtaining any specific proposal as envisaged in the guidelines issued by GOI. Rupees 71.50 crore was incurred during 2002-06 towards maintenance and repairs of school buildings. However, as per the statistical details in District Information System for Education (DISE) 2005-06, out of 3.63 lakh class rooms in the schools, 16,572 require major repair and 50,124 require minor repair. The maintenance grant should be prioritised for undertaking the major repairs of class rooms in the immediate future.

3.4.7.5 Diversion of funds

SSA funds to the tune of Rs 10.21 crore were diverted during 2002-06 in violation of the existing instructions within the components of the progamme and for purposes not contemplated in GOI frame work for SSA and AWPBs approved by PAB every year (**Appendix XXIV**).

3.4.7.6 Delay in submission of utilisation certificates

As per the GOI framework for implementation of SSA, the utilisation certificates (UCs) were required to be submitted by the Society to the GOI by 30 June. However, the Society furnished UCs with audited statement of accounts for the years 2002-03, 2003-04 and 2004-05 to GOI after a delay of nine, five and five months respectively. The delay was attributed (December 2005) by Government to delay in finalisation of accounts.

3.4.7.7 Deficiencies in the maintenance of accounts

Income and Expenditure Accounts and the Balance sheets were not prepared in 19 districts.

Manual on Financial Management and Procurement for SSA prescribed that consolidated Receipts and Payment (R&P) account, Income and Expenditure (I&E) account and Balance Sheet including the accounts of the districts shall be prepared for the State Society. For 2003-04, 19 out of 29 districts prepared only R&P account and had not prepared both I&E account and Balance Sheet. The Balance Sheet of the Society as a whole was finalised without taking into account the subsidiary balance sheet and the I&E statement from the districts. Government stated (October 2005) that in view of difficulties faced by auditors in certifying the 2002-03 accounts, some districts prepared only the R&P accounts during 2003-04. The fact remained that appropriate accounting skills are required to be strengthened in these districts so as to ensure utilisation of the provisions made for the programme.

Non-transfer of the erstwhile DPEP assets to SSA.

District Primary Education Programme (DPEP), a Centrally sponsored scheme was implemented in Tamil Nadu in seven districts[2] till 30 June 2003 and then subsumed with SSA. GOI and Government of Tamil Nadu shared the expenditure on DPEP in the ratio 85:15. The structures, programmes and experience gained in DPEP were retained for successful implementation of SSA in Tamil Nadu. Annual Accounts of DPEP, indicate that assets worth Rs 74.76 crore were available as on 30 June 2003. However, the Annual Accounts of SSA as of 31 March 2005 show the value of assets as Rs 6.56 crore only, indicating that the assets created under DPEP had not been carried over to SSA. Government stated (October 2005) that there is no agreement to take over the assets of DPEP by SSA. This reply is not tenable as DPEP was integrated with SSA and necessary action has to be taken by the Society for transfer of DPEP assets to SSA.

Though the EC decided in their meeting held on 19 May 2003, that all these class room buildings constructed under DPEP have to be handed over to local

[2] Cuddalore, Dharmapuri, Perambalur, Pudukottai, Ramanathapuram, Thiruvannamalai and Villupuram.

bodies or any other Government agency for further maintenance, the Director of Rural Development had requested the Director, SSA to provide funds for the maintenance of these buildings. However, no final decision has been taken in this matter (May 2006). As a result, 1,864 buildings reported as constructed in the seven erstwhile DPEP districts were not handed over to any agency and thus left unmaintained.

3.4.8 Implementation of Major Interventions

GOI framework for SSA envisages 21 interventions prescribing norms for each. Following discrepancies were noticed in respect of certain interventions:

3.4.8.1 Accessibility

Accessibility means availability of a primary school within one km and within three kms for an upper primary school. Though the SPD had reported that Tamil Nadu had achieved cent *per cent* access at primary and upper primary level in the year 2002-03 and 2004-05 respectively, the data compiled for preparation of Annual Working Plan for 2006-07 revealed that out of 64,846 habitations in the State, 380 habitations having 1.12 lakh school age children were still not having any primary school or Education Guarantee Scheme (EGS) centres.

3.4.8.2 Enrolment and attendance

There has been a substantial progress in enrolment and the Net Enrolment Ratio (NER) over the last four years both at primary and upper primary level is on the increasing trend as shown below:

		As of September			
		2002	**2003**	**2004**	**2005**
NER at Primary level	Boys	93	96	98.48	98.80
	Girls	92	96	98.27	98.15
	Total	**93**	**96**	**98.38**	**98.48**
NER at Upper primary level	Boys	91	95	97.22	97.89
	Girls	89	94	96.74	97.57
	Total	**90**	**94**	**96.98**	**97.73**

The attendance rate of students in primary and upper primary schools during the last four years is also on the increasing trend as indicated below:

	2002-03	**2003-04**	**2004-05**	**2005-06**
Primary schools	91	93	95	96
Upper primary schools	88	91	93	94

The key factors that are keeping the remaining children out of enrolment were attributed by SRI in their evaluation study to "Children not liking to go to school (40 *per cent*)" and "Children not good at studies (13.3 *per cent*)". The study also revealed that the main reason for children not attending school even after enrolment was affordability (29.2 *per cent*).

3.4.8.3 Completion rate and Repetition rate

The cohort study 2005 revealed that the completion rate and repetition rate during 2005-06 were as follows:

	Primary level			Upper primary level		
	Boys	**Girls**	**Total**	**Boys**	**Girls**	**Total**
Completion rate (CR)	76.04	79.35	77.66	79.67	83.97	81.77
Repetition rate (RR)	19.90	16.80	18.38	12.11	8.74	10.46

The CR at primary level ranged between 67.68 (Nagapattinam) and 86.93 (Pudukottai) and at upper primary level ranged between 73.45 (Karur) and 91.57 (Kanniyakumari). There is room for improvement in CR at primary level in 17 districts wherein it was below the State average (77.66) and ranged between 67.68 and 77.58 and at upper primary level in 15 districts wherein it ranged between 73.45 and 81.69 below the State average (81.77).

Similarly, the RR needs reduction in 15 districts at primary level wherein it ranged between 19.78 and 29.71 and 14 districts at upper primary level wherein it ranged between 11.07 and 16.71.

3.4.8.4 Higher Drop-out rate

Drop-out rate at primary and upper primary level in the State shows gradual decline.

The State level Drop-out rate (DR) during the last four years at the primary and upper primary level as compiled by SPD and included in AWPB for 2006-07 is as given below:

(in *per cent*)

As of September	All children		SC children		ST children	
	Primary level	**Upper primary level**	**Primary level**	**Upper primary level**	**Primary level**	**Upper primary level**
2002	12.00	13.00	14.00	15.00	19.00	17.00
2003	8.00	10.00	10.00	13.00	16.00	14.00
2004	5.79	8.64	6.23	9.75	11.42	11.24
2005	3.81	7.58	3.73	8.69	11.14	13.53

The above data clearly revealed the gradual decline in DR continuously, which is a positive trend.

As of September 2005 the gender-wise DR at primary school level and upper primary school level is as given below:

(in per cent)

	Boys	**Girls**	**All**
Primary level	3.85	3.77	3.81
Upper primary level	8.05	7.07	7.58

The DR at primary level in 19 districts is below the State DR while it varied between 3.94 *per cent* and 7.43 *per cent* in the remaining 11 districts[3].

At the upper primary level, the DR in 15 districts was below the State DR, while it ranged between 7.64 *per cent* and 13.17 *per cent* in the remaining 15 districts[4]. In this scenario, the aim of universal retention by 2010 after bringing all the children of age group 6 to 14 years to schools may not be achieved.

Government stated (December 2005) that drop-outs are due to various social and economic reasons and the problem is being addressed through several means including SSA, National Child Labour Programmes etc.

3.4.8.5 Out-of-school children

1.12 lakh out-of-school children of age group 6-14 years are yet to be covered as of April 2006.

One of SSA's main objectives was to ensure that all children are in school by 2005. According to State norms, formal schools are to be opened in places where the population is at least 300. To cover places where the population is less than 300 and to cater to the needs of unenrolled and dropped out children in the age group of 6-14, SSA provides support to Out-of-school children (OSC) by way of full time day schools called EGS centres in unserved habitations, Alternative and Innovative Education (AIE) Centres, bridge courses and residential camps.

The target and achievement in enrolling OSC during 2002-05 at State level and in incurring expenditure under this intervention are as given below:

Year	Physical (Number of children in lakh)		Percentage of shortfall in enrolment	Financial (Rupees in lakh)		
	Enrolment of OSC			Outlay provided in the AWPB	Expenditure incurred	Percentage of shortfall in financial achievement
	Target	Achievement				
2002-03	5.74	1.08	81	75.83	24.13	68
2003-04	4.66	2.55	45	4281.34	533.36	88
2004-05	2.79	2.01	28	3031.25	1244.09	59
2005-06	1.69	1.17[5]	31	3018.78	2605.25	14

Despite the provision of sufficient funds, the coverage was poor under this intervention.

The household survey 2005 reveals that 1,11,989 children[6] of the age group 6-14 years (21,506 children of 6-11 years age group and 90,483 children of

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3 Thiruvallur: 7.43, Namakkal: 7.25, Chennai: 6.75, Karur: 6.22, Krishnagiri: 6.03, Coimbatore: 6, Salem: 5.10, Thiruvannamalai: 5.02, Dindigul: 4.73, Erode: 4.38 and Tiruchirappalli: 3.94.

4 Dharmapuri: 13.17, Karur: 12.79, Krishnagiri: 10.98, Namakkal: 10.87, Thiruvannamalai: 10.87, Coimbatore: 10.41, Vellore: 10.05, Perambalur: 9.94, Villupuram: 8.91, Erode: 8.25, Thiruvarur: 8.17, Thiruvallur: 8.02, Thoothukudi: 7.70, Tiruchirappalli: 7.69 and Cuddalore: 7.64.

5 Direct enrolment in Formal schools: 4,393, Back to schools and drop-in-centres: 32,871, Bridge courses and drop-in-centres: 45,699, Residential camps including KGBV: 20,198, children enrolled in NCLP/INDUS schools: 13,757.

6 Children not enrolled during 2005-06: 52,344 and new drop-outs during 2005-06: 59,645.

11-14 years age group) were out-of-school and to be brought into the formal schooling system during 2006-07. Krishnagiri with a target of 8,667 children, Salem with 7,548 children and Namakkal with 7,405 children have a huge task ahead of them. Of the remaining districts, seven districts have a target of more than 5,000 OSC. This survey identified that there were six major reasons for children who had remained out-of-school, as indicated below:

Reason identified	Number of children
Lack of interest	5,499
Lack of access	1,299
Involved in household work	21,478
Migration	27,497
Earning compulsion	24,411
Failure	10,999
Others	20,806
	1,11,989

DPCs of sample districts attributed the shortfall to constraints in enrolling and mainstreaming of street children/working children/slum children in remote and scattered habitations. Government stated (December 2005) that the percentage of enrolment of OSC improved in 2004-05 due to involvement of NGOs in implementing AIE programmes.

It was observed in audit that an expenditure of Rs 1.68 crore had been incurred during 2003-05 in Salem District for conducting the Bridge Courses/Back to School camps. The percentage of children mainstreamed was only 23 *per cent* in 2003-04 and 39 *per cent* in 2004-05 despite incurring expenditure of Rs 29.21 lakh in the test checked blocks[7].

The evaluation study of SRI also confirmed the number of OSC as 1.16 lakh, very close to the figures (1.12 lakh) compiled by SPD from the monthly review reports. The study report of SRI further revealed that 11 out of every 1,000 children (11 out of 1,000 girls and 12 out of 1,000 boys) in the age group of 6-14 years were out-of-school and of this 13 out of 1,000 in rural areas and nine out of 1,000 in urban areas.

3.4.8.6 Teacher – Student Ratio

Non-achievement of the envisaged Teacher-Student Ratio.

As per norms, one teacher should be appointed for every 40 students in primary and upper primary levels for effective teaching. The overall teacher-student ratio (TSR) in primary schools for the State as a whole had improved from 1:41 in 2002 to 1:39 in 2003 and then to 1:36 in 2004 but had again reversed to 1:41 in 2005. A statement showing the TSR in the 30 districts of the State during the last four years is given as **Appendix XXV**. While only two districts *viz.*, Kanniyakumari and Salem had improvement in the TSR at primary level from 1:39 to 1:37 and 1:45 to 1:40 respectively, in all the remaining 28 districts, there was only deterioration at both primary and upper primary levels.

[7] 2003-04 - Edappadi, Kolathur, Yercaud, Thalaivasal, Salem (Rural) and Salem (Urban), 2004-05 - Taramangalam, Kadayampatti, Vazhappadi, Kolathur, Sankari, Mecheri, Salem (Urban), Panamarathupatti, Veerapandi and Yercaud.

At primary level, 16 districts had achieved the specified norm of 1:40 with their TSR ranging between 1:36 and 1:40 during 2005-06. The deterioration of TSR in 11 districts[8] was sizeable as compared to 2004-05 figures, though the TSR of five districts was within the specified norm. Such decline, however showed that the availability of teachers for imparting education is dwindling, which has to be set right immediately before turning to further adverse trend.

At the upper primary level, the State overall ratio after declining from 1:49 in 2002-03 to 1:42 in 2003-04, increased again to 1:46 in 2004-05 and then steeply increased to 1:54 in 2005-06 which was well above the specified norm of 1:40. Only four districts[9] had achieved the specified norm of 1:40. The TSR during 2005-06 ranged between 1:70 and 1:43 in the remaining 26 districts. In 20 districts, the ratio was above 1:50, indicating the non-availability of sufficient number of teachers, which would have a telling effect on the quality of education imparted to students. The ratio was alarmingly high (i.e.) 1:60 and more in five districts (Dharmapuri, Krishnagiri, Nagapattinam, Perambalur and Salem).

The Director replied (October 2005) that the situation is due to several factors like retirement, variation in enrolment of children and procedural delay in recruitment of new teachers etc. This reply highlights the necessity of continuous intervention for employment/redeployment of teachers.

Test check by Audit also revealed that only 28 of the test checked 127[10] schools (22 *per cent*) had the desired TSR ratio individually. The teachers were less than the norm in 66 schools (52 *per cent* of test checked sample) needing corrective action.

The figures compiled under DISE for the State AWPB for the current year 2006-07 confirmed that 3,599 schools[11] had higher TSR (above 1:40) upto 1:100. The factors leading to the prevalence of TSR above 1:60 needs to be analysed indepth and the TSR to be brought down, close to the specified norm, as the achievement of universal retention by 2010 may not be possible with such retardation under this major intervention.

Government stated (December 2005) that paras 21.4 and 21.5 of Manual of Financial Management and Procurement for SSA allow relaxation of 1:40 norm. The reply is not tenable as these two paras relate to relaxing the 1:40 norm to have more teachers in specific cases. While para 21.4 states that the number of upper primary teachers would depend on the number of upper

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8 Chennai 1:38 to 1:47, Dindigul 1:37 to 1:43, Madurai 1:33 to 1:44, Namakkal 1:36 to 1:43, Pudukottai 1:33 to 1:40, Sivagangai 1:30 to 1:39, The Nilgiris 1:31 to 1:39, Theni 1:33 to 1:39, Tirunelveli 1:33 to 1:45, Thoothukudi 1:24 to 1:41 and Virudhunagar 1:33 to 1:40.

9 Chennai (1:39), Kanniyakumari (1:37), The Nilgiris (1:40) and Thoothukudi (1:40).

10 Including one school having Tamil and Telugu Medium taken as two schools.

11 1:41 to 1:50: 722; 1:51 to 1:60: 847; 1:61 to 1:70: 717; 1:71 to 1:80: 566; 1:81 to 1:90: 372; 1:91 to 1:100: 266; Above 1:100: 109.

primary sections, para 21.5 relates to providing a minimum of two teachers even if the number of students is less than 40.

3.4.8.7 Other key indicators

A perusal of database collected school-wise under DISE, developed by the National Institute of Educational, Planning and Administration (NIEPA), also revealed that there were:

Single Teacher Schools.

1,937 schools with 1.04 lakh students out of 51,529 schools, had only a single teacher though SSA envisaged at least two teachers in each school.

Non-maintenance of the ratio of 1:2 between the primary and upper primary schools.

During 2005-06, the ratio between upper primary schools and primary schools in the State was 1:2.12[12] as against the specified norm of 1:2 under SSA. Out of the 30 districts, the ratio was within 1:2 in 11 districts while the same was between 1:3.17 and 1:2.02 in the remaining 19 districts. The ratio was highest in Sivagangai District (1:3.17) followed by Erode (1:3.07), Karur (1:2.97), Dindigul (1:2.94), Virudhunagar (1:2.75), Ramanathapuram (1:2.66), Dharmapuri (1:2.45), Thiruvannamalai (1:2.44), Thiruvarur (1:2.25), Cuddalore (1:2.24) and Pudukottai (1:2.23). The SPD had proposed to upgrade 234 primary schools into upper primary schools during 2006-07 and the ratio would only become 1:2.09 and even after this, 18 districts would have the ratio above 1:2.

In abstract terms, the details of primary and upper primary schools existing vis-à-vis required as per SSA norms during the last two years *viz.*, 2004-05 and 2005-06 with the shortfall are as given below:

(in number)

Year	Schools with primary classes	Schools with upper primary classes	Upper primary schools required as per SSA norms	Shortfall
2004-05	37,671	13,001	18,836	5,385
2005-06	37,253	13,761	18,626	4,865

Specific reasons for shortfall called for (June 2006) from the Director are awaited.

3.4.8.8 Training

Deficiencies in imparting training to teachers

To enhance teachers' professional development, SSA envisaged in-service training programmes for 20 days for all teachers, 60 days refresher course for untrained teachers and 30 days orientation course for freshers at Rs 70 per day, per teacher. Perusal of connected records revealed the following:

[12] Ratio calculated taking into account the number of Government and Private Aided schools.

In-service training for shorter duration were conducted.

The number of teacher training days proposed and achieved during the last four years was as given below:

Year	Teacher Training days (in lakh)		Percentage of achievement
	Proposed	Achieved	
2002-03	26.55	7.75	29
2003-04	31.37	15.59	50
2004-05	36.36	26.40	73
2005-06	35.05	31.84	91

During 2005-06, it was found that 18 days in-service training was planned for each teacher. The training data revealed that out of 1,22,868 and 66,879 teachers of primary and upper primary schools respectively trained during 2005-06, the continuous training of above 16 days were given to 62,216 and 29,193 teachers only.

The duration of training courses varied from one to five days to 11 to 15 days for the remaining teachers as shown below:

	Duration of training courses		
	1-5 days	6-10 days	11-15 days
Primary level	1,920	13,822	44,825
Upper primary level	2,729	9,907	24,964

A 60 day refresher course was envisaged to be given to new recruits under SSA. Though 8,686 teachers (Primary: 2,548; Upper Primary: 6,138) were appointed during 2001-06, no such refresher courses were imparted reportedly due to recruitment of trained teachers. The Secretary, School Education Department instructed (November 2004) the Director to arrange for 30 days training to these new recruits. Director stated that he had since instructed (May 2005) all the DPCs to conduct 30 day training course for newly recruited teachers. However, during 2005-06, only a 10 day special training was conducted to the newly recruited teachers apart from the regular in-service training.

3.4.9 Infrastructural facilities

3.4.9.1 Physical and Financial achievement under civil works

Civil works carried out under SSA included construction of BRCs, Cluster Resource Centres (CRCs) and class rooms besides provision of toilet and drinking water facilities. The community participation in all civil work activities is mandatory to ensure a sense of ownership. School Management Committees/VECs have to carry out all civil works; engagement of contractor is not allowed under SSA.

Funds provided in the annual plan and released towards civil works during 2002-06 is given below:

(Rupees in crore)

Year	Funds provided in the AWPB	Funds released	Percentage of release
2002-03	59.73	29.13	49
2003-04	139.76	95.56	68
2004-05	169.15	159.25	94
2005-06	158.61	155.78	98

During 2002-06 against 45,728 civil works comprising buildings for BRC, CRC, primary/upper primary schools including 2-3 class rooms and additional class rooms, besides drinking water facilities and toilet facilities taken up, 30,458 works were completed as of March 2006 and 15,270 works were pending completion.

3.4.9.2 Deficiencies in assessing the requirement at macro level

According to GOI guidelines, civil works under SSA should start with a proper assessment of infrastructure requirement for each school including repairs, toilets, drinking water, compound walls etc., in each district after compiling initially a school-wise requirement. Provision for additional class rooms is to be considered only after considering possibility of repairs and double shifts. After assessing the total requirement for the district, funding through the on-going schemes is to be ascertained and only the gap will then be proposed to be funded through SSA. Scrutiny of Annual Work Plans for 2002-03 to 2004-05 revealed that while civil works taken up under various other schemes were mentioned, no specific requirement under SSA was indicated. However, SPD, without collecting school-wise data, adopted the proposals received from the districts during 2002-04.

GOI desires that the existing infrastructure gap has to be wiped out before 2007-08. The State Project Directorate had done a massive district-wise exercise in this regard to find out the infrastructural gap and the same was reported to GOI during 2005-06. However, the figures compiled for the preparation of DISE for 2006-07 indicating the number of schools lacking the facilities of drinking water, common toilets, toilets for girls and electricity connection were at variance with the details reported to GOI (**Appendix XXVI**). In the absence of correct position, the Department could not take up phased programmes, in really meeting the required infrastructure.

As per the Evaluation study of SRI the percentage of availability of water facilities, common toilets, toilets for girls and electricity connection in primary and upper primary schools is given below:

	Primary schools	Upper primary schools	High schools with upper primary section
Common toilets	79.0	89.3	93.5
Girls toilets	50.0	71.3	73.4
Water supply facilities	92.5	93.3	90.9
Electricity connection	78.0	89.3	94.2

The study further revealed that about 1.7 *per cent* of primary schools and 0.7 *per cent* of upper primary schools were functioning in Kutcha structures which are basically not structurally stable and hence not suitable for running the institutions.

3.4.9.3 Deficiencies in test checked districts

Perusal of records in sample districts revealed the following:

Non-handing over of created assets to local bodies for maintenance.

Though SPD had instructed (August 2004) that the completed civil works be handed over by the VECs to respective panchayat/municipality for future maintenance, no such handing over was noticed in any of the seven sample districts.

Non-maintenance of asset register.

Despite GOI instructions, no consolidated asset register detailing assets created under SSA was found maintained in any of the sample districts test checked.

Non-creation of an earmarked fund.

With a view to encourage experimentation in design of school buildings, SSA Framework for implementation stipulate setting up of a Civil Works Innovation Fund of up to Rs 50 lakh from State funds or out of the allocation for Research, Evaluation & Monitoring. However, no such fund has been created by the Government. The Director stated (June 2006) that the fund is being created in 2006-07.

Deficiencies in civil works.

As per the guidelines, the participation of the community in all civil works is mandatory and engagement of contractors is not allowed. In violation of these guidelines, construction of buildings and toilets in two schools (cost: Rs 11.22 lakh) in Chennai and one school in Coimbatore (cost: Rs 4.95 lakh) were entrusted to contractors during 2003-04 and 2004-05 respectively.

In Salem district, Rs 24.17 lakh released to various VECs for civil works during 2003-05 was refunded to DPC after retaining it for two to six months due to not taking up of the proposed works, reportedly due to lack of coordination among members of VECs and school authorities.

3.4.9.4 Insufficiency of space in the constructed CRC buildings

Fifty type design CRC buildings constructed in Chennai at a cost of Rs 1 crore were not put to use.

SSA guidelines envisage a meeting every month of all subject teachers to discuss innovative methods of teaching. One class room building for CRC was to be constructed for this purpose. For the 50 clusters in Chennai, 50 type design CRC buildings were thus constructed (2002-05) at a cost of Rs 1 crore (standard cost of Rs 2 lakh each) each of which could accommodate only 40 teachers as can a class room. As there were an average of 160 teachers[13] in each cluster, the area of the buildings was inadequate. SPD stated (October 2005) that based on the strength of the teachers, training classes are conducted in other class rooms and CRCs are used as additional class rooms on working days. Test check, however, revealed that the monthly CRC meetings were generally being held in the assembly halls of a school and CRC buildings are not being put to any alternate use such as an additional class room.

[13] Total number of teachers in Chennai: 7,958.

3.4.10 Coverage of Special focus groups through innovative activities

3.4.10.1 Vocational skill development of girls

Poor coverage of girls under vocational skill development scheme.

Bridging gender gap is one of the objectives of SSA and with a view to motivating girls to enroll and complete elementary education, useful vocational skill development activities were introduced for them in upper primary level where the DR of girls is high. Training in local-specific vocational skills was imparted to girls, allotting two classes per week. During 2004-05, out of 16.90 lakh girls enrolled in 11,573 upper primary schools, only 9.12 lakh girls (54 *per cent*) were covered at a cost of Rs 280.17 lakh. The shortfall was attributed (October 2005) by SPD to lesser allotment of funds.

3.4.10.2 Early Childhood Care and Education

Out of 42,279 ICDS/TINP centres, only 19,974 centres were upgraded under ECCE.

Early Childhood Care and Education (ECCE) was one of the various measures under innovative components. Under this component, pre-school education activities under Integrated Child Development Services (ICDS) are to be strengthened by giving funds available under the head "Innovative activities" to ICDS centers. This intervention concentrates entirely on children of 3-5 years. It envisages upgradation of existing ICDS centres to pre-primary schools and opening of new ECCE centres in unserved areas besides supply of play materials to the non-upgraded centres and joint training to EC members and Anganwadi workers in upgraded centres. Of 17.49 lakh children in the age group 3 to 5 years in the State, 42,279 ICDS/Tamil Nadu Integrated Nutrition Project (TINP) centres cater to 10.91 lakh children. During 2003-06, only 19,974 centres were upgraded to pre-primary schools covering 5.29 lakh children. The remaining 22,305 centres are yet to be upgraded (March 2006).

The allotment for ECCE in AWPB for 2003-04 was Rs 435 lakh for 29 districts at Rs 15 lakh per district. Against actual expenditure of Rs 362.07 lakh, SPD reported (May 2004) to GOI an incorrect expenditure of Rs 419.49 lakh with an unspent balance of Rs 15.51 lakh.

3.4.10.3 Kasturba Gandhi Balika Vidyalaya

The financial achievement under the new scheme for coverage of girls of age group of 11-14 years during 2005-06 was poor.

GOI sanctioned a new programme Kasturba Gandhi Balika Vidyalaya (KGBV) under SSA during 2004-05 as an intervention for out-of-school girls in the age group of 11-14 years. The objective of the programme was to ensure access and quality education to the girls of disadvantageous groups of society to plug the significant gaps in the enrolment of girls at elementary/upper primary levels and to overcome the gender disparities persisted in rural areas and among disadvantaged communities. Under this scheme, 37 residential hostels were proposed to be opened specially for out-of-school girls in 28 educationally backward Blocks in 10 districts where the rural female literacy is lower and the gender gap is higher than the national average. As Rs 8.59 crore (GOI Share: Rs 6.44 crore; State share: Rs 2.15 crore) for the scheme was received only in March 2005, no expenditure was incurred under the scheme during 2004-05. As of March 2006, Rs 4.06 crore (47 *per cent*) was spent (Recurring expenditure: Rs 2.27 crore and non-

recurring expenditure: Rs 1.79 crore) under the scheme and Rs 4.53 crore is still lying unutilised under the scheme (March 2006).

3.4.11 Monitoring and evaluation

3.4.11.1 Monitoring

GOI guidelines envisaged the monitoring of SSA at three levels. While at the local community level, the qualitative impressions on the schools are to be monitored by the VECs, the State level and National level monitoring was to be more on the quantitative aspect of both the status of the implementation of the project and the progress made towards the achievement of SSA goals. Two kinds of information systems have to be developed for this purpose.

The first one was Education Management Information System (EMIS) for capturing data like enrolment, gross enrolment ratio, net enrolment ratio, retention rate, drop-out rate, completion rate etc., coupled with data available from household survey to be conducted at the beginning of the programme every year. The other one was Project Management Information System (PMIS) to record the progress made both physically and financially.

Non-commencement of proposed monitoring systems.

While EMIS had not commenced in the office of SPD, the PMIS was yet to be developed and transferred to the districts for recording the physical and financial programmes. Government stated (December 2005) that NIEPA would be requested to take up monitoring.

3.4.11.2 Evaluation by outside agencies

Based on the approval of GOI, Alagappa University, Karaikudi and the Indian Institute of Management (IIM), Bangalore were earmarked (May 2003) for monitoring the SSA activities in the State. While Alagappa University was entrusted with the evaluation and monitoring of SSA in 13 districts[14], IIM, Bangalore was entrusted with 16 districts by the SPD. However, even as of March 2006, both Alagappa University and IIM, Bangalore had completed the monitoring and evaluation only in one district each *viz.*, Ramanathapuram (July - September 2004) and Salem (July 2004) respectively.

3.4.11.3 DLIC meetings

Non-conducting of DLIC meetings as envisaged under the programme.

Test check by audit in the sample districts indicated that VECs, AEEOs, staff of CRCs, BRCs and DPs, District Collectors, Directors/Joint Directors of School Education Department and the SPD had generally conducted the required periodical monitoring at their level. However, as against the envisaged monthly meetings, the District Level Implementing Authority in two sample districts (Chennai and Coimbatore) met only one to three times a year during 2002-05 and in four districts (Chennai, Coimbatore, Salem and Tiruchirappalli) two to three times during 2005-06.

[14] Dindigul, Kanniyakumari, Madurai, Nagapattinam, Pudukottai, Ramanathapuram, Sivaganga, Thanjavur, Theni, Thiruvarur, Tirunelveli, Thoothukudi and Virudhunagar.

3.4.12 Conclusions

The main objective of bringing all children to regular or alternate schools by 2005 was not achieved. Delays were noticed in releasing both Central and State share under the programme. During 2001-06, Government of India share of Rs 319.32 crore though allocated in the approved Annual Plan was not released under the programme. The Drop-out ratio at primary and upper primary level during 2005-06 were 3.81 and 7.58 *per cent* respectively. As of March 2005, 1.12 lakh children were out-of-school and to be covered either by formal or non-formal schooling. The State level Teacher-Student ratio at primary and upper primary level during 2005-06 was 1:41 and 1:54, higher than the envisaged norm of 1:40 under SSA. The newly recruited teachers were imparted only 10 days special training instead of 30 days orientation course; thus the objective to enhance the teachers' professional development was ignored. Fifty *per cent* (15,270) of the civil works comprising class rooms, drinking water and toilet facilities remained incomplete as of March 2006 affecting the efficient schooling in the State.

3.4.13 Recommendations

- All the children in the age group of 6-14 years should be enrolled in regular or alternate schools.
- The Drop-out ratio at primary and upper primary level should be further reduced so as to achieve the programme objective of all children completing five years of primary and upper primary education by 2010.
- Mainstreaming of out-of-school children should be given immediate attention.
- To even out the variation in TSR in different schools, teachers may be appointed or redeployed.
- Annual Maintenance grant of Rs 5,000 should be prioritised for carrying out the major repairs after identifying the buildings which require immediate maintenance and repair.

The above points were referred to Government in July 2006; reply had not been received (December 2006).

ENVIRONMENT AND FORESTS DEPARTMENT

3.5 Conservation of flagship species - Tiger

Highlights

Project Tiger implemented in Kalakad-Mundanthurai Tiger Reserve aimed at ensuring maintenance of a viable population of tigers. The implementation of the project was hampered by the lack of management plan, inadequate funds, delay in release of funds and diversion of funds. Encroachments and private estate inside the Reserve affected the wildlife habitat. Protection measures and promotional activities were inadequate due to lack of funds and manpower. The estimate of the tiger population in the Reserve was unrealistic as it was not cross-checked by wildlife experts and the tiger population far exceeds the number the Reserve could support. The project was also not monitored in accordance with the Government of India guidelines.

- **Failure to prepare the Management Plan coupled with delays in sending Annual Plan of Operations and in release of funds by State Government resulted in release of only Rs 3.46 crore by Government of India during 2001-06 against the requirement of Rs 50.75 crore.**

(Paragraphs 3.5.6 and 3.5.7.1)

- **Conservation activities could not be carried out effectively as there was delay in declaring the entire reserve forest and forest land as sanctuary. Encroachment and location of private property exerted biotic pressure on the Reserve.**

(Paragraphs 3.5.8.1 and 3.5.8.4)

- **Activities contemplated to control poaching and illegal trade in wildlife and plant species were not carried out. Poor maintenance of fire lines during 2001-06 resulted in 130 incidences of forest fire damaging 3,317 acres of forest land.**

(Paragraph 3.5.8.5)

- **The annual estimate of tiger population was made without complying with the guidelines issued by Government of India and hence was not realistic and scientific.**

(Paragraph 3.5.8.7)

- **Schemes for providing assistance to people who are dependent on forests were not successful as 21,350 out of 21,400 people continued their dependence on forests.**

(Paragraph 3.5.8.8)

- **Shortage of staff at field level and lack of training in wildlife affected the implementation of conservation activities.**

(Paragraph 3.5.9)

3.5.1 Introduction

Recognising the need to protect tigers, Government of India (GOI) initiated several measures aimed at conservation and protection of the species. Significant among them were Project Tiger (PT), a Centrally Sponsored Scheme, implemented in all Tiger Reserves and the India Eco-Development Project (IEDP) funded by external agencies in five selected Tiger Reserves.

The main thrust of PT was to protect and mitigate deleterious biotic impacts with a view to comprehensively revive the natural eco-system in the reserve for fostering a viable population of tiger, co-predators and herbivores. The objective of 'IEDP' was to conserve the bio-diversity and increase opportunities for local population in management activities and decision making thereby reducing the negative impact of local people on Protected Areas and vice versa.

Kalakad-Mundanthurai Tiger Reserve (KMTR), located at the southern end of the western ghats in the districts of Tirunelveli and Kanniyakumari, is one of the 28 tiger reserves covered under the PT. Though IEDP was not implemented in this reserve, the eco-development activities were undertaken as a component of PT from 2002-03 onwards.

3.5.2 Organisational set up

Overall administrative control over the PT vests with the Secretary to Government – Environment and Forests Department (Department). At the State level, the Wildlife Wing of the Department is headed by the Chief Wildlife Warden (CWLW), who functions under the Principal Chief Conservator of Forests. The CWLW is assisted by a Field Director and Conservator of Forests (FD) who is mainly responsible for implementation of the PT, one Deputy Director (DD) at divisional level and seven Rangers and other supporting staff.

3.5.3 Audit objectives

The objectives of audit were to assess whether:

- PT was implemented based on proper planning,
- funds management was effective and funds were spent economically and efficiently,
- conservation, protection and promotional measures were adequate and effective,
- manpower deployment was effective and efficient, and
- system for monitoring was in place and was effective.

3.5.4 Audit criteria

The extent of achievement of the audit objectives was assessed by studying the following documents and applying the requisite criteria:

- Management Plan (MP) and Annual Plan of Operations (APOs),
- Annual budget, orders for sanction of funds and Tamil Nadu Financial Code,
- National Wildlife Action Plan 2002-2016 and Wildlife Protection Act, 1972,
- GOI guidelines on PT and recommendations of the Wildlife Institute of India,
- Guidelines issued by Government of Tamil Nadu on Joint Forest Management for eco-development and
- Government of Tamil Nadu norms for employment of personnel in Forest Department.

3.5.5 Audit methodology

An entry conference was held with the Secretary to Government on 21 November 2005 and field visits were undertaken by the audit team to have a first hand knowledge of the KMTR. The effectiveness of the financial management, compliance and regulatory inputs used in the Project was examined through test check of records relating to the period 2001-06 in the Secretariat of Environment and Forests Department, offices of the Principal Chief Conservator of Forests and the CWLW at Chennai, the FD at Tirunelveli and the DD at Ambasamudhram. The salient audit findings were discussed with the FD on 10 March 2006. The reply received from Government in August 2006 has been considered.

Audit findings

3.5.6 Deficiencies in Project formulation

PT envisages the preparation of MP to ensure policy based action for managing resources within the Tiger Reserve (TR). According to the guidelines issued (1995) by the Wildlife Institute of India, the MP was to be prepared by the Principal Chief Conservator of Forests for a period of 10 years containing detailed information about the TR, the brief description of all existing programmes and their effectiveness and details of new programmes required to achieve the objective and the anticipated expenditure. The MP was to be got approved by GOI. Based on the approved MP, the APOs, indicating the proposed activities to be undertaken and funds required therefor during the year, was to be prepared by Principal Chief Conservator of Forests and sent to GOI for release of funds.

Management Plan was prepared with delay.

The FD prepared the MP for 2001-2011, only in May 2006. In the absence of the MP, the conservation and protection activities essential for managing the TR were not identified and prioritised during 2001-06.

The funds projected in the APOs and actually sanctioned by the GOI during 2001-06 and the share of GOI and State Government are indicated in **Appendix XXVII**. It would be seen, therefrom, that against Rs 50.75 crore sought for in the APOs for both recurring (Rs 9.86 crore) and non-recurring expenditure (Rs 40.89 crore) for the years 2001-06, the GOI sanctioned only Rs 9.29 crore[1] (recurring : Rs 4.94 crore; non-recurring : Rs 4.35 crore). It was observed in audit that GOI had not sanctioned any of the new activities included in the APOs which were not contemplated in previous APOs. GOI also repeatedly gave directions to CWLW to prepare the MP for sanction of funds. Thus, failure to prepare the MP resulted in huge shortfall in providing of funds by the GOI and non-taking up of new activities envisaged in the APOs.

Delay in submission of APOs resulted in non-implementation of activities during the year as envisaged.

According to the PT guidelines, the APO was to be submitted to the GOI for approval and release of funds well before the commencement of the ensuing financial year. CWLW, however, prepared the APOs only after the commencement of the financial year. APOs were sent by the State Government to the GOI with a delay ranging from one to three months during 2001-06. Consequently, the GOI sanctioned funds only during July to September. The delay contributed to the non-implementation of activities envisaged in the APO during the year. Government accepted that the APOs were prepared only after the commencement of the financial year.

3.5.7 Financial Management

Project Tiger envisages non-recurring activities[2] financed fully by the GOI and recurring activities[3] funded by the GOI and the State Governments equally. The establishment expenditure is being met by the State Government. The deficiencies in release of funds for the PT and utilisation of funds thereagainst by the FD are discussed below:

3.5.7.1 Release of funds

GOI released funds in instalments based on progress of work. Funds received and the unspent balance of previous year were allocated between recurring and non-recurring expenditure by the State Government and necessary provision of funds made in the revised estimates along with the State share for recurring expenditure. State Government also issued administrative sanction for the allocated amount and the funds were released through Letter of Credit (LOC).

The details of the funds released by the GOI and the State Government and actually spent during the five years were as follows:

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1 GOI share : Rs 6.82 crore.
State Government share : Rs 2.47 crore.

2 Construction of building, purchase of vehicle and equipment, eco-tourism, relocation of villagers living inside the tiger reserve and eco-development works.

3 Habitat improvement, fire control, protection measures, publicity and education and annual maintenance of the tiger reserve.

(Rupees in crore)

Year	GOI share as per sanction	Amount released by GOI	Expendi-ture on GOI share	Unspent balance	State share as per sanction	Expendi-ture on State share	Date of		
							Release of GOI share	Issue of sanction by State Government	LOC
2001-02	0.80	*0.45	0.32	0.13	0.54	0.20	7.9.2001	15.3.2002	18.3.2002
2002-03	1.95	1.25	1.03	0.35	0.22	--	26.9.2002 and 30.12.2002	10.3.2003 and 21.3.2003	18.3.2003 and 26.3.2003
2003-04	0.70	0.35	0.63	0.07	0.38	0.04	7.7.2003	13.10.2003	7.11.2003 and 9.3.2004
2004-05	1.88	0.80	0.87	--	0.71	0.23	20.8.2004	15.2.2005	25.2.2005
2005-06	1.49	0.90	0.90	--	0.62	--	15.9.2005	13.12.2005	28.12.2005 and 30.3.2006
Total	**6.82**	***3.75**	**3.75**		**2.47**	**0.47**			

* includes unspent balance of Rs 0.29 crore relating to 2000-01

Against the total Central assistance of Rs 6.82 crore sanctioned, the GOI released only Rs 3.46 crore. Due to availability of unutilised amounts with the State Government at the end of the year and non-receipt of utilisation certificates for the funds released during the year, GOI had not released its share in full. Consequently, the State Government also provided only Rs 0.47 crore for the Project against their share of Rs 2.47 crore.

Administrative sanction for incurring expenditure was issued by the State Government only between December and March and LOCs were issued mainly during December and March each year. The delay by the Government in providing the funds for the PT resulted in poor utilisation of funds released by the GOI.

Thus, the non-receipt of entire funds sanctioned by the GOI for the PT and the poor utilisation by the State Government due to belated sanction and release of funds by the State Government resulted in non-execution of activities listed in the **Appendix XXVIII** affecting the implementation of the PT. Government accepted that the funds were released belatedly resulting in non-utilisation of funds provided in the budget which contributed to the denial of balance share from GOI.

3.5.7.2 Avoidable excess expenditure

Along with the PT, two more Centrally sponsored schemes viz., Project Elephant (PE) and Integrated Forest Protection (IFP) are implemented in KMTR. Till 2003-04, the DD adopted the Forest Schedule of Rate (FSR) for the payment to anti-poach watchers and fire watchers and for maintenance of

fire lines[4] under the PE, IFP and PT. During 2004-05, the FD proposed separate unit rate for these activities under the PE and the IFP which was approved by the GOI. Though this rate was lesser than the FSR, the DD adopted FSR for these works under the PT. As the nature of work was same in all the three schemes, only the rate approved by GOI for the other two schemes should have been adopted. This failure resulted in excess expenditure of Rs 15.82 lakh[5]. Government contended that rates as approved by GOI were adopted in the other two schemes. This contention was not acceptable as Principal Chief Conservator of Forests should have issued orders to adopt GOI rates for the similar works executed under PT.

3.5.7.3 Payment of wages without muster rolls

Tamil Nadu Financial Code stipulated payment of wages through muster roll to persons who were engaged departmentally as daily labourers for execution of works. Such works are to be taken up after the preparation of maintenance estimates. However, the DD, on receipt of funds at the end of year, prepared an estimate for the entire year and made payment for work of anti-poaching, fire watching, check of illegal mining, kanja cultivation and timber smuggling through hand receipt during March every year. The expenditure of Rs 63.54 lakh incurred during the period 2001-06 on payment through hand receipt without the basic records of muster roll is not susceptible of verification and is therefore, doubtful. Similar payments of Rs 6.32 lakh were also made in other schemes such as PE and IFP during 2001-06.

Government contended that the muster rolls could not be maintained due to practical difficulties. Besides if muster rolls are maintained, payment had to be made every month which was not possible. The payments were made in March as the work done by the labourers were supervised by Rangers, Foresters, Forest guards and Forest watchers. This contention is not tenable as there was no record indicating engagement of labourers every month.

3.5.8 Conservation, Protection and Promotional measures

3.5.8.1 Management of Tiger Reserve

Entire area not declared as sanctuary.

KMTR includes two Reserve Forests declared as sanctuary in 1962 (338 sq.km) and 1976 (223 sq.km), six Reserve Forests (104 sq.km) and a Reserve Land of 230 sq.km which were yet to be declared as sanctuary. Besides, a forest village of 0.6 sq.km and nine private estates (23 sq.km) were also situated inside the Reserve Forest areas. The action initiated (July 2003) by the DD to declare four Reserve Forest areas (27 sq.km) out of six as sanctuary, was pending with the District Collector, Tirunelveli who had issued instructions to the Revenue Divisional Officer to conduct site inspection only

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4 Fire line inside the forest is created by clearing weeds and thorny bushes for a required width and keeping the area free of all inflammable materials to prevent spreading of fire across the forest or to keep the fire localised.

5 Excess payment of Rs 1.49 lakh was made to anti-poaching during 2004-05, Rs 5.87 lakh to fire watchers during 2004-06 and Rs 8.46 lakh for fire line maintenance during 2004-06.

in November 2005. The records relating to the remaining two Reserve Forest areas (77 sq.km) which were included in the KMTR in June 1996 were not transferred to the FD (April 2006) by the District Forest Officer (Nagercoil) for initiating action to declare them as sanctuary.

As to the Reserve Land (230 sq.km), no proposal for declaring it as Reserve Forest area could be initiated as a portion of the land, occupied by a private company on 99 year lease, was under litigation. The High Court had directed (November 1999) the Forest Settlement Officer (FSO) of the Revenue Department to decide on the compensation payable to the company and pass orders within six months. However, the FSO allowed adjournments sought for by the company on several occasions and did not pass any order as of February 2006 even after many reminders by the FD to the FSO and District Collector. Regarding the acquisition of private land located inside the forest area, action could not be taken to acquire the land as the proposal (Rs 10 crore) included in the APO during 2002-03 was not considered by the GOI.

Thus, the entire area covered under the KMTR was not declared as sanctuary and consequently the boundaries of the protected areas could not be demarcated clearly and conservation activities could not be carried out effectively. Government stated that necessary steps are being taken to send proposals for declaring the newly added Reserve Forest areas as sanctuary. The reply was silent about the action taken to declare the Reserve land and private land as sanctuary.

3.5.8.2 Illegal grazing

No action was taken to prevent Illegal grazing.

Though the PT prohibited grazing of domestic cattle in the core zone of the sanctuary, the FD formed a Committee only in March 2004 to suggest measures to eradicate grazing. The Committee observed that about 400 to 500 animals were freely grazing in the forest and recommended (June 2004) activities like digging trenches at entry points of cattle, deployment of labourers to drive away the cattle and revival of cattle pounds. No follow-up action was taken on these recommendations. Field inspection note of the FD (September 2005) indicated continuance of illegal grazing by the cattle. Continued grazing by cattle would deplete the grass by about 1,478 Metric Tonne *per annum* thereby creating scarcity of food to prey animals. Though section 33 A (1) of the Wildlife (Protection) Act, 1972 stipulated that livestock kept within five kilometre of a sanctuary should be immunised against communicable diseases, 39,660 out of 43,939 cattles in 177 villages at the border of Reserve Forest were not vaccinated as of March 2006. As most of the cattle in the villages around KMTR were not vaccinated, the possibility of spreading of diseases to wild animals during the movement of cattle to the forest for grazing was not ruled out besides trampling of new seedlings of grass and other vegetations by the cattle.

3.5.8.3 Restoration of degraded habitats

Non-implementation of recommendations of Wildlife Institute of India.

Wildlife Institute of India in their report on 'Revision and upgradation of the MP - KMTR' identified (December 2001) three habitats inside KMTR as degraded and suggested remedial measures like (i) extensive regular cool burning in the months of December and January, (ii) acquisition of six estates within the KMTR and promoting the natural regeneration of surroundings, (iii) shifting of 73 Electricity Board households to Lower Dam and (iv) providing extra protection to minimise damage due to flash floods. Due to delay in preparation of MP for 2001-2011, FD did not implement these suggestions. Government stated that these activities were included in the MP now prepared.

Non-eradication of exotic weeds.

Presence of exotic vegetation deprives prey base of fodder and hence had to be eradicated to restore indigenous vegetation. Though Rs 20 lakh were sanctioned by the GOI during 2001-05, no amount was spent for this purpose under PT and Rs 1.49 lakh was spent during 2005-06 under State funds. Government stated that this problem would be addressed in future.

3.5.8.4 Land use and management

Continuance of biotic pressure on the TR due to encroachment and location of private property in the TR are discussed in the succeeding paragraphs:

Encroachment by a private company.

Under Madras Estate Act, 1948, Government took over (February 1952) 8,373.57 acres of land in the Reserve Forest which was leased out to a private company in 1929 for a period of 99 years and allowed the lease to continue for cultivation of coffee, tea and other commercial plantations, except timber, subject to the condition that the company would not clear any catchment area of Kusangaliar River measuring 970 acre. The lease was liable to be terminated in the event of violation of this condition. The land lies in the core area of KMTR. Though the Department identified that the company had cleared an extent of 249 acres of catchment area of Kusangaliar River in November 1987 itself, no effective and concerted action was taken to cancel the lease agreement and evict the company. During 2001-02, the GOI sanctioned Rs 6.88 lakh to survey and verify the boundaries of all big and small enclosures inside the KMTR which included this company. Though the FD sent proposal (January 2001) to the Principal Chief Conservator of Forests for sanction of posts for the survey team, the posts were not got sanctioned by the Government as of March 2006. Non-conducting of the survey had resulted in continuance of the encroachment of the watershed area by the company. A remote sensing image taken (March 2004) by the Department revealed that the company had unauthorisedly occupied natural watershed area and cultivated tea, coffee and other plantations and an enquiry was ordered (December 2005) by the Commissioner of Land Administration, Chennai. Non-clearance of encroachment for over 25 years resulted in degradation of forest land. Government stated that the company has obtained stay order from the High Court and action was being taken to vacate the stay.

Delay in notification of land provided for compensatory afforestation.

Poromboke land (39.48 acres) transferred by the Public Works Department (PWD) in 2000 in lieu of transfer of land in the KMTR by the Forest Department for Kodumudiyar Reservoir Project was not declared (February 2006) as Reserve Forest by the Revenue Department. Consequently, afforestation works could not be taken up by the Forest Department, though Rs 13.85 lakh were deposited (March 1999) by the PWD for this purpose. Government stated that effective action was being taken to declare the land as Reserve Forest and compensatory afforestation would be taken up during 2006-07.

Non-acquisition of private property.

Rupees 63 lakh were released (1991) by the GOI to State Government for relocation of people in two villages and acquisition of a private property inside the KMTR. Out of Rs 63 lakh, Rs 55 lakh were deposited (March 1992) and continue to remain (March 2006) in the Personal Deposit account of the District Collector, Tirunelveli for this purpose. Though alternate sites were allotted (September 2004) to the people of the villages, they were not relocated as of March 2006. As Rs 10 crore required for acquisition of lands in the core area had not been sanctioned by GOI in the absence of MP, the private property was also continued to be allowed inside the TR. Government stated that efforts are being taken to relocate the people and action was being taken to acquire the land.

3.5.8.5 Protection Measures

The measures taken to prevent poaching, illegal trade in wildlife and plant and fire were found inadequate as discussed in the following paragraphs:

To prevent destruction of natural forest, the Supreme Court of India banned felling of trees. Consequently, the State Government issued (August 1997) an order stipulating, among other things, that all existing and new saw mills should be registered with the respective District Forest Officer concerned to identify purchase of illicit timbers by them. However, 21 saw mills situated around the KMTR were not registered with the DD. Incidentally, there were 428 instances of illegal felling of trees during the audit period and cases against the offenders were filed and fine imposed by the Department. On being pointed out by audit, 18 mills were registered in June 2006. Government stated that instructions were issued to the DD to register the remaining saw mills.

Inadequate fire control measures.

There were fire lines for a length of 420 km up to 2002-03 which was increased to 513.70 km during 2003-04. However, the DD maintained only 288 km during 2002-03 and 319 km during 2003-04. Poor maintenance of fire lines resulted in the occurrence of 130 fires damaging 3,317 acres of forest land during 2001-06. Further, non-maintenance of fire lines during 2001-02 resulted in occurrence of a major fire in August 2002 damaging 381 hectare of land. Incidentally, it was seen that maintenance of the entire fire lines during 2004-05 had prevented the fire accidents during the year. Government stated that fire lines were maintained depending on the availability of funds. The reply was not tenable since maintenance of fire line was important to control fire and sufficient funds should have been provided for this purpose.

The Committee constituted (August 2002) by the FD to find out the cause of fire occurred in August 2002 and to suggest fire control measures to be undertaken, recommended (October 2002) (a) creation of an Emergency Fund, (b) construction of watchtower at eight new places, (c) survey and demarcation of area on the ground, (d) training to staff on fire fighting and use of wireless set and (e) provision of Walkie Talkie (WT) up to Watcher level. Though Rs 71.56 lakh were sought for during 2003-06 for these activities (except creation of Emergency Fund), the GOI sanctioned only Rs 21.99 lakh for purchase of wireless sets during 2003-06. Even the allotted amount was not utilised for that purpose. In the absence of communication equipment, occurrences of fire/poaching activities noticed inside the reserve cannot be prevented immediately. Government stated that proposals have been sent for construction of watchtower.

3.5.8.6 Absence of tourist management plan

The National Wildlife Action Plan (2002-2016) emphasised the need to develop a tourism management plan which was to include areas open to tourism, tourist carrying capacity, code of conduct for tourists, participation of local people, training programmes to guides, waste disposal system, mechanism to counter negative impacts of tourism, etc. The plan also stipulates that tourism management plan for KMTR should be prepared by the end of 2004, determine the carrying capacity of tourists by 2005 and Eco-tourism Advisory Board was to be set up by 2005 to regulate tourism activities.

Three temples, three water falls and two dams, located inside the KMTR attracts tourists/pilgrims. The FD had not (a) prepared the tourism management plan, (b) fixed any ceiling on number of tourists and (c) set up Eco-tourism Advisory Board. Besides, the pilgrims visiting temples were also exempted (September 2004) from payment of entry fees which increased the number of visitors thereby creating biotic pressure on the TR. Government has not given specific reply.

3.5.8.7 Census of tigers

According to the guidelines issued by the GOI for tiger estimation, data on observation of pug marks, kills, camera trappings, DNA analysis of scats, marks on the trees, sighting of tigers, and cubs and radio telemetry were to be compiled on a day to day basis by the Forest Guards. These data were to be cross checked and tabulated by the Rangers and spatial distribution maps prepared. Further, annual estimation of wildlife population including tiger were to be undertaken. These data were not compiled by the DD. Instead, only annual census were conducted and the estimation of tigers was done by counting pug marks which is not considered a fool proof methodology by experts.

The annual census was not conducted during the year 2003. Even the census of other years except 2005 did not contain vital information regarding male, female and cub population as detailed below:

Year	Estimated population of tiger	Male	Female	Cub	Un-identified	Increase	Decrease
2000	20	---	---	---	---	---	---
2001	18	---	---	---	---		2
2002	27	---	---	---	---	9	---
2003	No Census	---	---	---	---	---	---
2004	28	---	---	---	---	1	---
2005	29	13	7	2	7	1	---

Absence of sex ratio of all tigers and age analysis indicates that specialised training in carrying out estimate had not been imparted to the staff.

Tiger census unrealistic.

Records revealed that the tiger population in the sanctuary vary widely. The population which was 22 in 1989, declined to 17 and 16 during 1993 and 1995 and increased to 28 in 1997. In 2000, it again declined to 20. The variation noticed during 2000-05 also clearly indicates that the estimation of tiger population was not realistic and scientific, especially as these were not cross checked by wildlife experts.

Estimation of the population of co-predators, prey species and other animals was not conducted during 2003 and 2005. During 2002 and 2004, population of prey species was estimated over a limited area and the population for the entire area of KMTR was arrived at proportionately, which indicated a moderate increase in the population of prey animals. Such a kind of estimation would not reflect a true picture of population of prey species. Thus, the FD did not correctly arrive at the prey-predator ratio to know about viable population of tigers. Further, as per Wildlife Institute of India report (March 2001), the KMTR can support a maximum of 15 adult tigers only as it is not ecologically suitable to support a higher density of ungulates, which is prey base for tiger.

Thus, omission in complying with the directions of the GOI rendered tiger estimate unreliable. Consequently, the impact of the programme sustaining a viable population of tigers and prey animals could not be assessed. Government stated that the abnormal increase in number of tigers in subsequent years was not analysed and investigated and the census for the current year was being taken under the guidance of Wildlife Institute of India. Government also admitted that the study conducted by a private agency revealed shrinkage of prey base.

3.5.8.8 Deficiencies in implementation of Eco-development project

In order to reduce the dependence of the people living in 145 hamlets situated along the eastern boundary of the KMTR, on forest for livelihood, 132 Village Forest Committees (VFCs), to assist the villagers for undertaking alternate income generation activities, were formed during 1997-2002 under World Bank assisted Forestry Research Education and Extension Project (FREEP).

Thereafter, the activities were carried out under the PT. During 2002-03, 50 new VFCs were formed and Rs 20 lakh were provided to four VFCs towards providing alternate livelihood to the people. During 2004-05, Rs 57.60 lakh were paid to 180 VFCs as revolving fund for the same purpose. The impact of these activities for eco-development are discussed in the following paragraphs:

People continued to depend on forests due to non-extension of assistance.

At the end of the FREEP, 21,400 people living in the eastern boundary of KMTR were fully (200) and partially (21,200) dependent on forest for livelihood. However, only 50 people fully dependent on forest were provided with assistance during 2002-06. The remaining 21,350 people continued to depend on forest and large number of cases (423) booked for illegal felling of trees during 2002-06 indicate that the objective was not achieved. Government stated that the process of dependency on forests by the people would be reduced in a phased manner only. The reply was not tenable since the number of cases of illegal felling increased from 102 in 2003-04 to 136 in 2004-05.

Activities in Micro Plan for eco-development not carried out.

The approved micro plan for the 50 newly formed (2002-03) VFCs provides for cash loan for income generation activities, supply of bio-mass and cooker to people who use fuel wood, imparting training to people in driving, tailoring, etc., raising fruit bearing trees and training to Self Help Group, etc. However, except cash loan none of the other activities were taken up. Consequently, the people continued to depend on forests for their livelihood. Government stated that action has already been initiated to raise fruit bearing trees and other activities would be taken up in a phased manner.

3.5.8.9 Non-implementation of the recommendation of Consultant/WII

Research and Development initiatives not carried out.

FD engaged Wildlife Institute of India to conduct a study on "revision and up-gradation of MP for the KMTR". The report submitted by the Wildlife Institute of India in 2001 suggested various measures to be taken for control of fire, poaching, illegal mining and grazing, eviction of encroachers, research activities, etc. The suggestions of Wildlife Institute of India were not implemented for want of sanction of sufficient funds by the GOI and the State Government. Similarly, the recommendation of a consultant, who conducted (1998) a study on the "enclaves in the KMTR" were not implemented. Further, research laboratory/facility for long term/short term research on Flora and Fauna was not set up in the KMTR.

Government stated that the suggestions of Wildlife Institute of India and the recommendations of the consultant were included in the MP prepared in May 2006 and on receipt of approval for MP, these would be implemented.

3.5.9 Deficiencies in manpower management

Shortage of staff at field level and lack of training in wildlife impacted implementation of conservation activities.

Shortage of man power.

- Against the norm of 89 Forest Guards and 30 Foresters for the KMTR there were only 30 Forest Guards and seven Foresters. As forest inspection involved considerable leg work, the existing strength of the Forest Guards and Foresters was grossly inadequate in view of the unmanageable area of each beat.

- Out of 14 wireless operator posts sanctioned by the GOI, only three posts were filled up and remaining were kept vacant since 1988. Even these three posts were not filled up after the retirement of the incumbents during 2002-03 (2) and 2004-05 (1). Consequently, the wireless sets were operated by untrained staff and anti-poaching watchers. Effective use of communication equipment was, therefore, not ensured.

Non-sanction of posts for veterinary wing.

- Though the GOI sanctioned Rs 4.26 lakh during 2001-02 for four posts[6] for the veterinary wing, the posts were not filled up for want of sanction of the State Government.

- The service of labourers engaged for anti-poaching were utilised for driving 11 vehicles, for want of drivers.

Government stated that action was being taken to fill up the vacant posts.

Delay in formation of division.

According to the norms fixed by the State Government in 1991, there should be a division for every five ranges. As the KMTR comprises seven ranges, proposals for the creation of one more division were submitted to the Principal Chief Conservator of Forests in 1997. Though the GOI accorded sanction for the reimbursement of salary for the formation of another division and sanctioned Rs 11.83 lakh for the year 2000-01, the division was not sanctioned by the State Government. The delay in formation may lead to deficiency in effective supervision of conservation activities in the reserve. Government stated that the matter was being pursued. The reply was silent about specific action taken by Government to form the Division.

Lack of training in wildlife to staff.

None of the officers/staff attached to the offices of the FD and the DD were trained in wildlife during 2001-06. Government stated that necessary fundamental training was imparted to officers and staff. The reply was silent about the training given in wildlife for the staff attached to the offices of FD and DD.

3.5.10 Monitoring and Evaluation

According to Wildlife (Protection) Act, 1972, a State Board for Wildlife should meet at least twice a year and formulate policy for protection and conservation of the wildlife and specified plants. However, the Board was constituted only during September 2003 and no meeting was convened till

[6] Veterinary Officer, Veterinary Assistant, Veterinary Lab Assistant and Office Assistant.

February 2006. Consequently, the expert advice of the Board was not available to the Department.

According to an affidavit filed (August 2000) by the Secretary, Ministry of Environment and Forests (MOEF) before the Supreme Court of India, each State should establish a Tiger Conservation Cell. However, no Tiger Conservation Cell was established in Tamil Nadu (February 2006).

As per directives and guidelines of the MOEF, a monitoring and evaluation committee should be constituted at the level of the State Government. However, no such committee was constituted (February 2006) resulting in non-evaluation of the Project.

3.5.11 Conclusions

Conservation and protection activity continued on an adhoc basis due to delay in preparation of Management Plan. Sanction for recurring expenditure as also LOC were issued with considerable delay during the five year resulting in poor utilisation of funds released by GOI. On account of unutilised amount of the previous years the GOI share was also not received in full. The failure to declare the entire Reserve as sanctuary and in regulating the tourism activities and continued dependence of the villagers on forest for their livelihood indicated inaction of the FD towards mitigating the deleterious biotic impacts on the eco-system. The census of the tigers was not carried out in accordance with the GOI guidelines resulting in the figures being unreliable. Initiative for reduction of dependence of people on forest did not achieve its objectives as large number of people continued with dependence on forest and increased number of cases of illegal felling was noticed. The system for monitoring was largely ineffective as no meetings of the State level Board were conducted.

3.5.12 Recommendations

- The Annual Plan of Operations should be prepared in advance so as to ensure receipt of funds from GOI in time and therefore their utilisation in the year.
- Effective action should be taken for controlling illegal grazing in the core zone of sanctuary as also for immunisation of the cattle within the vicinity of the sanctuary.
- Adequate funds should be made available for maintenance of firelines and action should be taken for construction of watchtowers for control of fires.
- Comprehensive tourist management plan should be prepared on priority basis outlining the code of conduct for tourist, areas open for tourism and tourist carrying capacity.
- The census of the tigers should be carried out strictly in compliance to the guidelines issued by the GOI and estimation of the population of co-predators, prey species and other animals should be carried out on regular basis.

PUBLIC WORKS DEPARTMENT

3.6 Implementation of the Well Census Project

Highlights

The Well Census Project was conceived to create a consolidated database of all the existing wells in the State to cater to the Tamil Nadu Ground Water (Development and Management) Act, 2003 for protection of the ground water resources in the State. However, the time for proper planning, conducting feasibility study, ensuring the correctness and completeness of the software for data capture, etc. was inadequate. The application software developed was devoid of controls to ensure completeness and correctness of data. This critically impaired the attainment of the objective of Well Census Project.

- **The project could not be completed in the initially allotted period of four and half months and the extension allowed for the project also could not be beneficially utilised.**

(Paragraph 3.6.5)

- **Creation of a geo-data base could not be taken up due to lack of data and shortage of Global Positioning Systems. Expenditure of Rs 28.80 lakh spent on purchase of related equipment and software thus was rendered infructuous.**

(Paragraph 3.6.6)

- **Internet server was lying idle and the envisaged website was yet to be created.**

(Paragraph 3.6.7)

- **Absence of validation controls in the software that was developed coupled with non-observance of input controls resulted in compilation of incorrect data.**

(Paragraph 3.6.10)

- **Data in respect of wells in 846 out of the total of 17,014 villages in the State was not collected/compiled.**

(Paragraph 3.6.13)

3.6.1 Introduction

The Tamil Nadu Ground Water (Development and Management) Act, 2003 was enacted in March 2003 to protect the ground water resources in the State from its indiscriminate exploitation and for its systematic management. The date from which this Act will come into force is still to be notified (July 2006).

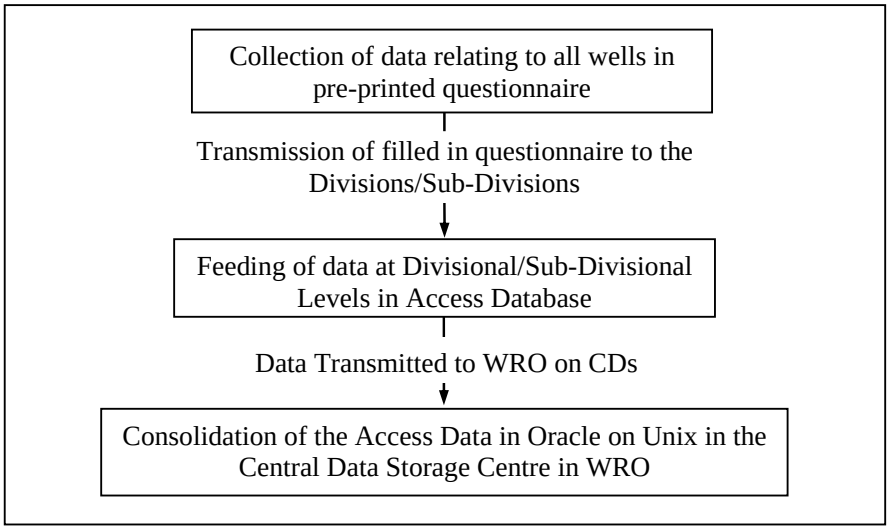
As an essential pre-requisite for the implementation of the Act, a Well Census Project (Project) was taken up to create a consolidated database of all the existing wells in the State. The Project was approved under the Tamil Nadu Water Resources Consolidation Project (WRCP) implemented by the Water Resources Organisation (WRO) in Public Works Department (PWD) with assistance from the World Bank.

Government of Tamil Nadu sanctioned (November 2003) Rs 5 crore for the implementation of the Project. The sanction required that a Pilot Study be taken up in 15 selected blocks and later extended to all other blocks. Data relating to all categories of wells (domestic, agricultural, industrial and commercial) was to be collected to create a database by 31 March 2004 to synchronize with the closure of the WRCP. Consequent on the extension of WRCP period to 30 September 2004 by the World Bank, the Project also got a corresponding extension.

3.6.2 Scope of the Project

The Project involved collection and consolidation of information on an estimated 37 lakh wells (July 2006) from approximately 17,000 villages, scattered across the State, using the services of around 2,000 field staff temporarily recruited for the purpose. The data was then to be captured in the Divisions/Sub-Divisions using temporary data entry operators recruited for the purpose. Information on 34 parameters was to be collected in respect of each well and captured in 71 fields in a data table. The data was then to be got vetted by the competent revenue officials and got approved by the 'Grama Sabha' concerned and sent to WRO for consolidation. The Well Census data was then to be linked with map data obtained from the Tamil Nadu Water Supply and Drainage (TWAD) Board using the Geographic Information System (GIS) software and a Geo-database was to be created. Outputs from the Project included information required by the districts/blocks in text and graphical formats for implementation of the Act.

A flow chart indicating various steps involved in the implementation of the Project is given below:



The task of collecting and capturing of data was declared completed by September 2004. The Well Census data contained details of 36.91 lakh wells spread across 16,447 villages in the State with the related database being of the order of 2 GB[1].

During the period between December 2003 and March 2005, an expenditure of Rs 3.61 crore was incurred on the Project as tabulated below:

Sl.No.	Item of Expenditure	Amount (Rupees in lakh)
1	50 Hand Held GPS Systems	10.23
2	Application Software	1.31
3	Three Server class computers	14.07
4	Colour Laser printer	3.40
5	Printing of Forms, Data Collection and Data feeding	314.73
6	GIS Software	16.48
7	Training	1.08
	Total	**361.30**

3.6.3 Audit objectives and methodology

The main Audit objectives were to assess:

- effectiveness of planning undertaken for this project and for the implementation of the objectives of the project and
- whether software that was developed contained validation and input controls and integrity, completeness and correctness of data that was collected was ensured.

An examination of the records, the application program used for the capture of data and the interrogation of the compiled data using Computer Aided Audit Techniques were carried out during March 2005 and the report updated in July 2006. Deficiencies noticed are discussed in succeeding paragraphs.

3.6.4 Deficiencies in Project planning and implementation

Due to critical time constraints the well census project could neither be planned properly nor fully implemented as contemplated, as brought out in the following paragraphs.

[1] Giga Byte.

3.6.5 Incompleteness of data capture

A database of 37 lakh wells was planned to be completed in just four and a half months. The planned pilot study could not be completed before taking up the project proper.

The project, approved by the Empowered Committee and the World Bank in July 2003, was sanctioned by Government in November 2003. As the WRCP was originally to conclude in March 2004, the Project was also to conclude by that date. The scope of the Project and the area to be covered were too large to be completed in the initially planned period of four and a half months available before the closure of the scheme. A pilot study, essential in such projects, though planned, could not be done due to time constraint. Even though the Project period was extended by six months, the extended period could not be effectively utilised as the order for extension was communicated to WRO and PWD, only on the last working day of the original period. As such, the Department initially tried to rush through the Project, so as to complete it within the short period available. As per the original estimate, data was to be collected in respect of an estimated 33 lakh wells in 17,014 villages. However, data in respect of 36.91 lakh wells has been collected in 16,168 villages, though 846 villages were yet to be covered (July 2006). Further, the quality and completeness of the data collected left a lot to be desired.

3.6.6 Non-preparation of a Geo-database – infructuous expenditure

Geo-database not prepared for want of data. Proposal since shelved. Purchase of hardware and software at Rs 28.80 lakh for this was thus rendered infructuous.

The Project included the creation of a geo-database (GIS^2) with the objective of generating outputs in a graphical form. For this, 50 hand-held Global Positioning Systems (GPS), a HP Server and GIS Software were procured at a cost of Rs 28.80 lakh. The Geo-database was to be created by plotting the position of wells using its latitude and longitude in the shape data, furnishing the outline of the villages obtained from TWAD Board. Since the hand-held GPS system could be operated only by the technical staff of the Department and only 50 such systems were available, the latitude and longitude positions were recorded and captured only in respect of 39,049 wells which is only 1.06 *per cent* of total number of wells surveyed (36,91,265). The creation of the geo-database has since been shelved rendering the expenditure incurred thereon, infructuous.

3.6.7 Unjustified Procurement of HP Internet Server

Internet server purchased was lying idle and the envisaged Internet website was yet to be created.

A server class computer costing Rs 3.76 lakh was procured (September 2004) for the sole purpose of sharing the well data with users on the web. However, even after the lapse of over 20 months, it had not been put into active use, as the well census data was not corrected/completed and made fit to be published on the net. Further, no time bound proposals were underway to create the necessary infrastructure to host an Internet website and bring the server to use. In the circumstances, the Internet Server was lying idle and there was no scope for making an Internet site operational in the immediate future.

[2] GIS – Geographical Information System.

The Department acknowledged (May 2005) that the Internet server could not be effectively utilised in the present scenario and only after completion of the validation and the consolidation of the data, the same could be hosted on the web.

3.6.8 Defective collection of data

Deficiency in collection of information at the field.

Data in respect of 36.91 lakh wells were gathered by temporary field organisers (casual workers) with very little technical background within a limited time. There was inadequate input and validation control on the data captured into the system. This resulted in the data collected having several deficiencies as elucidated in this report. Such deficiencies make the database undependable and unfit for deriving any meaningful conclusions.

3.6.9 Absence of check on completeness and correctness of data

The data collected was grossly deficient and incomplete on account of the following reasons.

Incapacity of the well owner combined with that of the data collector, resulted in erroneous and defective data collection.

- Most well owners could not provide information like depth of the bore well, sub-soil details, etc.
- Ambiguity of the information called for, like quality of water judged by one's individual opinion, date and cost of digging of an ancestral well, area of wet crops and dry crops covered by the well, which is a continually varying factor, etc.
- The data collectors appeared to be rather confused over the unit of measurement to be adopted in respect of various categories of numeric data.

The data collected in the face of these shortcomings, contained information like one km deep wells, hundreds of 19th century bore wells etc. The Department acknowledged (May 2005) that the incapacity of the well owners in furnishing information and that of the data collectors in gathering the information has been reflected in the database. However, there was no check by the Department either on the completeness or on the correctness of the data collected at the field level.

3.6.10 Absence of Input/validation Control

Software lacked validation controls.

Information collected at the field was captured in the computer system at the Sub-Divisional and Divisional levels. For this purpose, an application software was developed with Visual Basic (VB) as front-end-tool and MS Access as back end database, at a cost of Rs 1.30 lakh in January 2004. The software was accepted without proper testing for availability of necessary controls to ensure correctness and completeness of data. A detailed examination revealed that due to lack of input/validation controls the resultant database was incomplete/erroneous as detailed below. The Department agreed (May 2005) that it should not have accepted the software devoid of such essential controls.

Sl.No.	Information Captured	Type of error	Number of records
1.	Type of Well	Blank	17,263
2.	Status of use	Blank	28,527
3.	Purpose of well	Blank	1,18,656
4.	Water quality	Blank	1,12,479
5.	Depth of Wells	Blank	10,26,031
		Depth less than 2 metres*	8,04,684
		Depth more than 500 metres	1,077
6.	Level of water in the well	Zero	36,64,806
		Negative	5,121
7.	Area irrigated by each well	Blank	4,20,032
8.	Soil Type	Blank	23,791
		Meaningless information	75,105
9.	Mode of lifting water	Blank	1,11,494
		Manual lifting of water from tube wells	3,76,834
		Regular pumping of water from wells not in use	42,648
		Lifting of water by manual or by bullocks reported in spite of availability of mechanical or electrical pump	1,16,570
		Electricity Board Connection number left blank	23,98,200
		Power of motor not furnished	4,38,724
10.	Cost of construction	Blank	2,28,231
		In excess of Rs 10 lakh@	1,471
11.	Cost of maintenance	Blank	7,14,754
		In excess of Rs 10 lakh@	42

* The Department replied that the abnormal values were due to an error in the software that swapped the data relating to diameter and depth in respect of circular wells. An examination of the data disclosed that error is not consistent and there were 9 lakh instances of correct data as well.

@ The Department instead of ascertaining the actual values in respect of these parameters resorted to reducing such values to zero. Such types of corrections are neither complete nor sustainable and are not good database are not recommended practise for maintenance of good database.

3.6.11 Defects in codification of wells

Data was captured from serially numbered formats called "Well Census Forms" with separate serials for each village. The wells were thus to be uniquely identified by a combination of the District, Taluk, Village and the serial number. However for want of an input control for ensuring unique identity of a well, there were several duplications in the allotment of such codes. A total number of 5,20,801 wells shared only 1,81,650 serial numbers as the same serial numbers were assigned to more than one well in the same village. As a result, identification of individual wells was not possible in the database. The Department replied (September 2005) that they were planning to introduce unique identification numbers for each well but the exercise has not been taken up till date (July 2006).

3.6.12 Deficiency in storing the field identities of wells

Names and addresses of the owners of many domestic wells and the survey number in respect of many irrigation wells not furnished.

While, in the database, a well is identified by its code, the physical identity of a domestic well is established by the name and address of its owner and that of irrigation well by the survey number where it is located. Without these identities, the data cannot be physically linked to a well. However, it was observed that out of 13,58,569 domestic wells, the names of the owners of wells were not furnished in respect of 14,311 wells and the address of the owner remained blank for 2,58,003 wells. Similarly, out of 19,70,760 irrigation wells, the survey number remained blank or contained irrelevant information in 3,50,034 wells.

Thus in absence of codification of the wells and absence of various details the identification of the wells was not possible.

3.6.13 Incomplete coverage of the Well Census

Data on wells in Chennai city yet to be incorporated.

The well census was to cover all the wells in the State. Data in respect of Chennai City was proposed to be obtained from Chennai Metropolitan Water Supply and Sewerage Board and incorporated in the well census data. Even after the lapse of a year and 10 months after the completion of the Project, this data is yet to be obtained/incorporated (July 2006).

Information in respect of wells in 846 villages yet to be collected/compiled in well census.

The compiled data after completion of census revealed that the exercise was incomplete to the extent of five *per cent* of villages (846 out of 17,014 villages) as listed in **Appendix XXIX**. Despite this shortfall, the Department has already intimated the State Government/World Bank (October 2004) that the collection and storage of data was complete. There was also no system to ensure that the well census covered all the wells within a village since the Revenue officials and the Gram Sabha certified only the correctness of the collected data. In the circumstances, audit could not ensure the extent of coverage of all the wells in each village. The Department accepted (May 2005) that the process of validating and consolidating the well census database was still incomplete.

3.6.14 Conclusions

A database estimated to cover about 33 lakh wells in the State was to be created under the Project by obtaining information from the remote corners of the State, in just over four months. The time for proper planning, conducting feasibility study, ensuring the correctness and completeness of the software for data capture, etc., was inadequate. An extension of six months was allowed. However, the same was also not gainfully utilised. The application software developed was devoid of controls to ensure completeness and correctness of data. Data in respect of five *per cent* of the villages was yet to be compiled. The geo-database (GIS) with the objective of generating outputs in a graphical form also was not created. The incomplete/erroneous database critically impaired the attainment of the objective of Well Census.

Thus even after incurring an expenditure of Rs 3.61 crore on the Well Census Project, the resultant database created was still unusable.

3.6.15 Recommendations

- Existing database must be checked for correctness in order to make it useful.
- Efforts should be made to complete the database by acquiring information in respect of left over wells.
- Suitable input controls should be incorporated in the Data Capture Program to guard against capture of erroneous data.

HOME DEPARTMENT

3.7 Ineffective Computerisation in Police Department

Highlights

To achieve its objectives of control, investigation and prevention of crime, the Department decided to computerise its functions. A centrally sponsored scheme of "Crime and Criminal Information System" was introduced in 1996 by the National Crime Records Bureau, New Delhi. The objective of this scheme was storage of crime and criminal related data and easy retrieval of information in support of crime detection. In addition, in the year 2001, another scheme "Crime Analysis and Automated Record Updating System" was introduced, to computerise all manual records of police stations. However, deficient planning and implementation led to duplication data entry resulting in wastage of manpower as well as errors The database of Crime and Criminal Information System was incomplete and contained incorrect data due to lack of input and validation controls leading to the database being unreliable and thus not useful. Thus the expenditure of Rs 4.40 crore has not achieved the desired results even after a decade of its functioning.

- **Crime and Criminal Information System has not been implemented in full, though it has been functioning for a decade. Planning Crime Analysis and Automated Record Updating System without considering the existing Crime and Criminal Information System scheme resulted in duplication of data capture and wastage of manpower.**

(Paragraphs 3.7.6.1 and 3.7.6.2)

- **Networking between District Crime Records Bureaus and State Crime Records Bureau had not been achieved even 10 years after the introduction of Crime and Criminal Information System resulting in delayed transmission of data to State Crime Records Bureau.**

(Paragraph 3.7.6.3)

- **The software supplied by National Crime Records Bureau could not be corrected or supplemented by State Crime Records Bureau or District Crime Records Bureaus resulting in several deficiencies/errors remaining uncorrected for years.**

(Paragraph 3.7.7.4)

- **Incorrect/incomplete master tables resulted in capture of incorrect codes for Acts/Sections for crimes and for investigating Police**

Officers in the transaction tables. 9.16 lakh records contained incorrect Sections under Section 41 of the Criminal Procedure Code alone. 1,638 codes were provided against the existing 29 ranks of Police Officers.

(Paragraphs 3.7.8.3 and 3.7.8.4)

- **Capture of data from which Crime and Criminal Information System could generate reports in support of crime detection, remained at 8.84 *per cent* even after an expenditure of Rs 4.40 crore.**

(Paragraph 3.7.9.1)

- **Capture of the value of properties involved in crimes was erroneous.**

(Paragraph 3.7.9.3)

- **While Crime and Criminal Information System contemplated complete details of all persons involved in crimes, the related data table did not even store the names of the individuals in respect of seven lakh cases.**

(Paragraph 3.7.9.6)

3.7.1 Introduction

To achieve its objectives of control, investigation and prevention of crime, the Department decided to computerise its functions. A centrally sponsored scheme of "Crime and Criminal Information System (CCIS)" was introduced in 1996 by the National Crime Records Bureau (NCRB), New Delhi. The objective of this scheme was storage of crime and criminal related data and easy retrieval of information in support of crime detection. In addition, in the year 2001, another scheme "Crime Analysis and Automated Record Updating System (CAARUS)" was introduced, to computerise all manual records of police stations. An Information Technology Review of these two schemes was taken up in March-May 2006.

All the 37 District Crime Records Bureaus (DCRBs) in the State were provided with computers for capture of data relating to CCIS. Data were to be collected in seven different Forms called Integrated Investigation Forms (IIFs) by police stations and sent to DCRBs for capture in the computer system, using a software supplied by NCRB on SQL Server and Visual Basic. The data was then to be consolidated at the State Crime Records Bureau (SCRB) at Chennai and transmitted to the NCRB for final consolidation. The data was to be used in the detection of inter district crimes by the SCRB and inter state crimes by the NCRB.

CAARUS was conceived to computerise all manual records of police stations. For this purpose, all the 1,413 police stations in the State were supplied with one computer each. Data relating to administrative and crime related activities

of a police station were to be captured in CAARUS and all periodical returns generated therefrom. The CAARUS data was localised to each police station and was to be consolidated further.

3.7.2 Scope of audit

All information pertaining to CCIS were to be analysed for correctness and completeness. Since the source documents had to flow from each of the 1,413 police stations in the State, ensuring their completeness was crucial. Thus, CCIS information at all the Police Stations, DCRBs and SCRB along with the application software and the implementation was within the scope of this audit.

3.7.3 Audit objectives

The main audit objectives were to study whether

- the information compiled was credible and complete,
- there were sufficient controls existed from input to the output levels,
- the information was made available to all the intended users in time and
- the information available was utilised by intended users.

3.7.4 Audit criteria

The audit criteria adopted are to check the data with

- manual returns and figures therein, which is still in vogue,
- Criminal Procedure Code (Cr.PC), Indian Penal Code (IPC) etc.,
- scheme of codification and master data[1] in the system,
- Police Station records and manuals,
- original source documents and
- general information available.

3.7.5 Audit methodology and coverage

The entire CCIS data (from January 1996 to January 2006) was downloaded and examined in Audit. The application software was examined for its completeness and adequacy of controls. The outputs generated and their utilities were also examined. The systems followed in the DCRBs for data capture and the constraints faced were ascertained through a questionnaire and cross-checked in four DCRBs. The implementation of CAARUS was not examined as it was still at an initial stage of implementation.

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[1] Master data sets are synchronized copies of core business entities used in traditional or analytical applications across the organization.

As the Department had classified their data as confidential, the entire examination was carried out in the premises of SCRB. Important points noticed during the review are discussed in the succeeding paragraphs.

3.7.6 Planning and implementation

Schemes with overlapping functions were introduced in the Department without any timeframe for their implementation, the implications of which are discussed in the succeeding paragraphs.

3.7.6.1 CCIS not yet fully functional

Absence of time limit for making the system functional resulted in continuance of parallel manual function for the last 10 years.

Though Crime Records Bureaus at the District, State and National levels were formed in the year 1985 and computerisation of various records through CCIS was taken up in 1996, no limit was fixed by which time these were to become fully functional. As capture of data remained grossly incomplete, all the manual functions have continued in parallel with the computer system for more than a decade and the CCIS scheme has yet not become fully functional.

3.7.6.2 Faulty planning of CAARUS

Planning for new scheme without taking into account the existing CCIS scheme, resulted in duplication of data capture.

CAARUS was introduced in 2001 five years after implementation of CCIS without taking cognizance of the ongoing Scheme. CAARUS encompassed all the information captured in CCIS resulting in duplication. Details of all First Information Reports (FIRs) filed and all related information were to be captured once in the Police Stations for CAARUS and again in DCRBs for CCIS. No interface was established between the schemes to share information captured for one scheme with the other. Keying in vast data, twice, resulted in appreciable wastage of manpower and also increased the probability for data inconsistency.

3.7.6.3 Failure to provide the planned networking

The contemplated network of connecting the computers in the DCRBs and SCRB have not been established even after a lapse of 10 years.

As per the Memorandum of Understanding between the State Government and the Government of India, all DCRBs and the SCRB were to be connected via a network. However, even after 10 years, data is still transferred through tape media resulting in a delay of upto 30 days in transfer of crucial information. Failure in this regard has reduced the usefulness of CCIS.

3.7.6.4 Non-existence of provision for storage of vital information on criminals

No provision for storage of photograph and/or fingerprints of criminals in the CCIS data.

CCIS has provision to store identity of all criminals such as their build, height, complexion, identification marks, deformities/peculiarities, teeth, hair, eyes, habit, etc. But, no provision is made for storage of their photographs or fingerprints, which are more precise identities, though such information is available in most cases with the Police Stations.

3.7.7 System design

The software was developed by NCRB, New Delhi and the State Police did not have the design documents. Thus the same could not be studied in audit.

3.7.7.1 Deficiencies in the software

SCRB, as a user of the software for over a decade had the responsibility to highlight and get the deficiencies, if any, in the software rectified. However, the following deficiencies were observed to be still persisting in the software.

3.7.7.2 Non-availability of provision for the filing a second charge sheet for the same FIR

No provision for inclusion of data relating to second FIR.

If in a case, a set of persons were charge sheeted on one occasion, and the remaining persons charge sheeted later, the software does not allow entry of data relating to the later charge sheet. The deficiency left the data incomplete where more than one charge sheet was filed in a case.

3.7.7.3 Deficiency in capture of vehicle related crimes

Capture of data for one vehicle only available.

In cases involving vehicles, the engine number, chassis number, make, model, colour, cost, etc., are to be captured. But the system provides for capture of details in respect of only one vehicle for each crime resulting in capture of incomplete information when more than one vehicle have been involved in a case.

3.7.7.4 Absence of provision to alter the Section under which a case is booked

No provision for altering the Section originally fed.

As per procedures, the Sections of an Act under which a case is initially filed can be altered subsequently. But in CCIS, once an FIR is filed under a particular Section, the same cannot be altered. As a result, in all FIRs that have suffered a change of Section, the relevant data cannot be altered in CCIS.

Any modification to the application or the master data could be made by NCRB only. Thus any deficiency observed by the DCRB or SCRB, the users of the CCIS, was to be brought to the notice of NCRB for rectification. However, the software still contained the above deficiencies/errors which remain uncorrected despite being in use for 10 years.

3.7.8 Errors and deficiencies in Data

3.7.8.1 Deficient codification procedures and incorrect data storage

Various 'Penal Code Sections', types of crimes, methods adopted by criminals, nature of properties involved, etc., were codified in CCIS for maintaining uniformity in data capture and to facilitate querying. However, an analysis disclosed incorrect codification and deficient procedure for their updation as discussed below:

3.7.8.2 Incorrect pattern adopted for codification of FIRs

Due to assignment of code numbers to districts and police stations separately, the transfer of a police station to another district warrants change in both places.

In CCIS, each FIR is assigned a unique 13 digit numeric code, consisting of details of FIR, the police district, the police station, year and the serial number of the FIR. The code did not provide flexibility in case of changes in the jurisdiction of Police Stations from one district to another. If a police station was transferred from the control of one district to another, codes of all related FIRs, are to be suitably changed in the records at the DCRBs, SCRB and NCRB failing which the related FIRs lose their identity. For example Pothanur Police Station and Kuniyamuthur out post were transferred from Coimbatore District (Code No. 585) to Coimbatore City (Code No.586). However, the corresponding changes in the codes were not incorporated in all the earlier records. In the circumstances the earlier records lose their linkage with any existing Police Station.

3.7.8.3 Incorrect codification of Acts and Sections

Deficiencies in codification.

FIRs and charge sheets are filed based on one or more Sections of the several penal codes like the IPC, Cr.PC etc., in force. Such information instrumental in classification of crimes were codified in CCIS. Analysis revealed incorrect storage of Acts/Sections against crimes as shown below:

In 20 Records, there was duplication in codification of Acts and FIRs could be filed against both the codes.

Same Section of an Act was codified in many different ways. For example, while Section 41 under Cr.PC has only 10 different sub-sections, 150 different sub-sections were codified under it. This resulted in 9.16 lakh FIRs containing incorrect Sections under the above Section alone constituting a 17 *per cent* error level.

3.7.8.4 Non-codification of investigating Police Officers

Deficiencies in the maintenance of master table for codification of police officers.

To identify an Investigating Officer, codes were provided. Codes were also provided to their ranks in the Police Department. An examination of data disclosed the following.

- No definite pattern was adopted for codification of the Investigating Officers. The codes were numeric in some cases and alpha numeric in others.
- The codification of the officials was not complete. As such, Codes were allotted only for 5,654 officials as against the actual strength of the Department, which is around 88,000, yet codes were entered for the remaining officers in an arbitrary manner, as codes other than these 5,654 allotted codes were noticed in 87,063 FIRs.
- Out of the 52.95 lakh FIRs captured, the identity of the Investigating Officer was not captured in respect of 20.19 lakh FIRs forming a 38 *per cent* omission. Similarly the identity of the supervising official was not captured in the FIR table in 42.18 lakh cases forming an 80 *per cent* omission.

- Codification of ranks did not follow a definite pattern, in terms of hierarchy. For example the code of an Inspector was 28 while the code of a Sub-Inspector was 20 and that of a Deputy Superintendent was 11.
- A total of 1,638 different codes were allotted against existing 29 ranks in the Department.
- There were 26 Records where Additional Superintendents of Police were supposed to be investigating cases under the control of Assistant Sub-Inspectors as per the database.

With such incomplete and inaccurate data, various reports produced by CCIS were unreliable. The Department in their reply (June 2006) stated that efforts were on to make the system perfect.

3.7.8.5 Deficiency in codification of Police Stations

Duplicate codes were allotted to 11 police stations in the state. Out of these, FIRs were registered under both the codes in five such police stations.

3.7.9 Other data deficiencies

Data capture in CCIS was deficient and the captured data contained errors on a large scale. Such level of errors virtually rendered the database unreliable and the outputs therefrom were thus unreliable and misleading.

3.7.9.1 Incomplete data capture under CCIS Scheme

Seven IIF Forms[2] have been prescribed for transmission of information from police stations to the DCRBs for capture of data under CCIS. The information furnished in each of the IIF is listed below:

Form	Name of Form	Purpose of Form
I	First Information Report	Preliminary information on a crime as recorded in the first instance
II	Crime Details Form	Details of the crime as recorded by the investigating officer after visit to the scene of the crime
III	Arrest/Court Surrender Form	Details of the criminal on his arrest or after he has surrendered
IV	Property Search and Seizure Form	Details of property lost, seized or recovered
V	Final Form/Report	Details of charge sheet filed against the accused
VI	Court Disposal Form	Disposal of the case by a court of law
VII	Result of Appeal Form	Further appeals filed in the court by the state, accused or complainant

Form I provides only preliminary information and Forms II, III and IV provide specific information on the Crime, the Criminal and the Property

[2] Integrated Investigation Forms.

involved respectively. Forms V, VI and VII indicate follow up action and final disposal. Thus to produce any meaningful output, data was to be captured completely under each Form. While capture of data from Form I was 99.17 *per cent* complete (February 2006), capture of details from Forms II to VII was only 8.84 *per cent* complete. As capture of the critical data remained incomplete, the prospect of CCIS achieving its objectives appears difficult. The department did not insist upon the submission of Forms I to VII by Police Stations. The Department accepted the projected shortfall in capture of data. Thus, even after an expenditure of Rs 4.40 crore, capture of data from which CCIS could generate reports, in support of crime detection remained at 8.84 *per cent*.

3.7.9.2 Misclassification of property

Misclassification of the types of properties in the data.

The properties involved in crimes are classified[3] into main-codes and sub-codes and are also assigned a property-type in the database. An examination of the data disclosed the following:

- In 1,492 records, properties were classified under incorrect property types.
- There were 26 records where the classification of sub-codes was incompatible with the existing main-codes. For example, Musical Instruments were classified under the main-code 'Agricultural Products'.
- The main-code remained blank in 25 records.

The above indicated lack of input controls. The department accepted the observation (June 2006) and attributed the same to lack of controls and inexperience of data entry operators.

3.7.9.3 Incorrect quantification of Properties

Incorrect provision of value to the properties while capturing the data.

The quantification and valuation of the property involved, based on the assessment of the Investigating Officer are instrumental in determining the gravity of a case. Despite the criticality of the information, the data had several deficiencies as discussed hereunder:

- The value of the property was not captured in respect of 14,648 cases, despite availability of quantity and unit measurement in 13,707 cases.
- A manual check disclosed incorrect valuation of properties in 65 cases. For example, 70 grams of gold was valued at Rs 20 lakh. Similarly, there were errors in the capture of data relating to quantity involved. For example, 15,000 buffalos were reported lost in a single case.

[3] For example, for a gold chain, the main-code is 'Jewellery' (3733), the sub-code is 'gold neck chain' (1315) and the property-type is 'Un-numbered Property' (2).

- The unit of measurement in several records had no relevance to the actual commodity. For example jewellery was quantified in "bags, bundles, centimeters, dozens, hectares, kilometers, litres, meters, numbers, packets, pairs, quintals, sheets and tonnes". Similarly cash was quantified in terms of litres, tonnes, bags, kilometers, bottle, pairs, bundles, meters, grams, sheets, dozens and packets. The unit of measurement remained blank in 20,994 (12 *per cent* cases) out of 1.74 lakh cases.

- The owner of the property and the identification of the nature of property in terms of belonging to the Victim or Accused or as Abandoned/Unclaimed/Government was not captured in 55,501 records.

The Department in their reply accepted the observations and instructed their district offices to guard against such errors in future.

3.7.9.4 Inconsistent data relating to Automobiles

Capture of inconsistent data regarding automobiles.

Capture of information like type of automobile, registration number, make, chassis number, engine number and status of vehicles involved in crimes was made mandatory. An examination, however, disclosed several deficiencies as discussed hereunder:

- Out of 67,672 records, the engine number was blank in 12,914 cases and had irrelevant information in 4,485 cases. Similarly, the chassis number was blank in 7,288 cases and had irrelevant information in 8,292 records. The registration numbers were blank in 1,461 cases and had unrelated information in 1,071 cases. There were also 1,434 cases where all these three crucial items of information were either blank or contained irrelevant information.

- Certain inconsistent information like, a bicycle valued at Rs 91,943, a moped valued at over Rs 90 lakh and a motor cycle valued at Rs 11.10 lakh were also noticed.

- There was also a case where an FIR was filed on the loss of a Boeing 747 (Jumbo) aircraft black in colour valued at Rs 1,600 in the Kallikudi police station of Madurai district.

Such erroneous/incomplete and irrelevant data would be useless in crime detection and did not justify the capital investment and recurring expenditure on such data capture. Department in their reply (June 2006) attributed the state of affairs to the huge volume of work and the cumbersome processes involved and stated that steps were initiated to make necessary corrections.

3.7.9.5 Deficiencies in the storage of FIRs

An examination disclosed several deficiencies as discussed hereunder:

- The information relating to Penal code Sections in respect of each FIR were stored separately. It was observed that for 99,945 FIRs, such information were not available.

- In 115 cases, the FIRs were shown as filed even before the dates on which the crime was committed.

- 1,496 FIRs were shown as filed even before the receipt of such information. In respect of 5,467 FIRs[4], there was abnormal delay in the filing of FIRs ranging between five days to more than 365 days after the receipt of information.

- In 18,352 cases, incorrect 'days' were stored.

- The details of action taken remained blank in 10,04,277 cases and contained irrelevant information in another 46,713 cases.

- Out of 3,18,390 property related cases, the value was not captured in 2,28,192 cases.

- There were 133 FIRs registered as emanating from non-existent police stations.

- For recording certain crimes like riot etc., duration of the crime is also to be captured. The duration of crime had abnormal values in respect of 16,685 FIRs[5], with the maximum period recorded as 90,560 days.

The above deficiencies and inaccuracies indicated absence of proper input and validation controls. The Department stated (June 2006) that all the DCRBs in the State have been instructed to guard against such inaccurate recording of data.

3.7.9.6 Incorrect and incomplete details of arrest and surrender

CCIS provides for capturing information relating to persons involved in case and for the capture of additional information in respect of persons surrendered/arrested. However, the information was deficient as listed below:

Incomplete details of arrests and surrenders.

- Out of 7,72,423 arrested persons, additional information such as date of arrest, place of arrest etc., were not captured in 8,760 cases.

- In respect of 39,258 cases, basic information such as name, date of birth, build, height etc., were not captured even though additional information have been captured.

- The status of the arrested person like, kept in 'police custody', 'judicial custody', etc., was not indicated in 3,824 records.

Further, an analysis of 19,95,151 records containing details of persons arrested, surrendered or suspected disclosed the following.

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[4] 5 to 10 days : 1,084 cases, 11 to 30 days : 1,055 cases, 31 to 90 days : 1,071 cases, 91 to 180 days : 858 cases, 181 to 365 days : 839 cases and more than 365 days : 560 cases.

[5] 100 to 1,000 days: 13,320 cases, 1,001 to 5,000 days: 3,262 cases, 5,001 to 10,000 days: 124 cases and more than 10,000 days: 79 cases.

Incomplete information on the identity of persons arrested/surrendered /suspected.

Sl. No.	Item	Discrepancy	Number of cases
1.	Name	Blank or meaningless information	7,00,381
2.	Initial	Initials were at the beginning	68,349
3.	Name of related persons	Blank or meaningless information	13,74,425
4.	Nationality	Blank	15,02,424
5.	Religion	Blank	16,31,213
6.	Date of Birth	Blank	6,64,876
7.	Build	Blank	14,57,071
8.	Height	Blank	13,56,781
9.	Complexion	Blank	17,05,228
10.	Teeth	Blank	18,24,729
11.	Hair	Blank	18,24,259
12.	Eye	Blank	18,45,983
13.	Dress Habit	Blank	18,03,404
14.	Language	Blank	16,30,367

Such discrepancies were as a result of non-existence of input controls and data validation procedures, thus rendering the entire data unreliable. In the absence of these details, generation of name based reports provided for in the software was not possible.

It was noticed that not even a single person was identified as 'Convicted' out of 21 lakh records containing details of persons involved in FIRs indicating incomplete capture of information.

Such incorrect/incomplete data in the CCIS would not help the identification of criminals. The department attributed (June 2006) most of the above errors to the prevailing cumbersome procedures in data capture and massive nature of data backlog.

3.7.10 Deficiencies in the classification of crimes

The Modus Operandi (MO) adopted by a criminal is one of the key factors based on which detection of a crime is to be attempted through CCIS. For this purpose, crimes are classified into Major Heads, Minor Heads and Methods[6], a combination of which helps in determining the exact MO relating to a particular case. However, the storage of these factors in the data tables was poor, to play any sustainable role in crime detection through CCIS.

3.7.11 Non-assignment of Major Heads

Classification of crime headings not assigned in all cases.

The major head is based on the Section under which a case is filed and it is to be automatically assigned by the system. It was seen that for 2,63,741 out of

[6] **Major Heads**: Murder, Robbery, Dacoity etc.; **Minor Heads**: adultery, running train, urban, rural; **Methods**: firearms, bomb throwing, snatching.

14,80,873 cases, major heads were not assigned. The Department in their reply (June 2006) attributed the omissions to the deficient earlier version of the software and has promised rectificatory action. However, it was noticed that such omissions are found to exist right from 1996 to till date.

3.7.12 Non-assignment of Methods in respect of FIRs booked

Data on Methods of crime captured only in 13.88 *per cent* of cases.

The 'Method' relating to a crime is the *defacto* MO, based on which investigation is proceeded with.

While it was possible to capture 'Methods' of all crimes for which Major Heads were available, it was done only in respect of 1,71,199 out of 12,33,012 records. The Department replied (June 2006) that the deficiency in software had been brought to the notice of NCRB for necessary correction.

3.7.13 Utilisation of CCIS Data

Exclusive utilisation of data for crime detection is yet to commence.

In CCIS, efforts are still on only to complete the capture of data and no targets have been set to bring it to its functional use. Though functioning for the past 10 years, attempts are being made merely to complete the capture of data with correctness and completeness and utility given secondary importance. Monitoring mechanisms watched only the quantity of data captured and not its quality, through monthly returns. No performance indicators for measuring the utility value of CCIS were prescribed. All the manual systems that helped in crime detection in the pre-computerised days were still operational. There is no count of the number of crimes that were detected using the assistance of CCIS. It is thus assessed in audit that utilisation of CCIS data for crime detection is yet to commence.

The fact that the SCRB was not generating reports provided for in CCIS in support of crime detection, was accepted by the Department in their reply (June 2006). The system of periodic assessment of the CCIS claimed to be in position by them was ineffective.

3.7.14 Conclusions

Computerisation in the Police Department centered around two schemes the CCIS and CAARUS. The CCIS is yet to become fully functional even after 10 years of its inception. Non provision of the linkage between the CAARUS and CCIS for data porting from CAARUS to CCIS has led to duplication data entry resulting in wastage of manpower as well as errors. Even after 10 years of implementation, the DCRBs and the SCRB are yet to be connected in a network, resulting in abnormal delay in the transmission of data from districts to the state headquarters. The critical data required for generating reports from CCIS is still largely incomplete. The application deficiencies have led to the database being incomplete and also incorrect, making it unreliable and thus not useful. No tangible benefits have thus accrued so far from this computerisation.

3.7.15 Recommendations

In order to make CCIS functional and to achieve the desired objectives, the following recommendations are suggested.

- Suitable interface between CCIS and CAARUS has to be established to avoid repetition in data capture and consequent loss of manpower.
- The capture of data should be made complete and up-to-date.
- The capture of data with regard to all the IIF Forms should be considered for assessing completeness.
- The correctness of data has to be ensured through suitable controls.