

Chapter 2

Performance Audit

Food, Civil Supplies and Consumer Affairs Department

2.1 Comprehensive Computerisation Project of the Department of Food, Civil Supplies and Consumer Affairs

Executive Summary

A comprehensive computerisation project to digitise the data collected through a house-to-house survey and issue computerised ration cards to the eligible families in the State was approved by Government (August 2005) for the Department of Food, Civil Supplies and Consumer Affairs. The project sought to eliminate ineligible ration cards, besides creating an effective distribution management system to ensure availability of rationed articles, reduce leakages and provide an efficient and real-time Management Information System.

The Department selected (March 2006) a partner under the Build, Operate and Transfer (BOT) model of Public-Private-Partnership (PPP) through a bidding process to implement the project over a period of five and a half years. However, Government's decision to adopt the PPP route had not been taken after considering all alternatives. Balanced sharing of risks between the Government and private sector partner had not been ensured for enduring success of the PPP arrangement and the choice of PPP was not taken after due diligence. The selection of the private partner and the qualifying procedures were flawed, resulting in selection of the partner who did not have the capacity to deliver.

The oversight over implementation of computerisation was so defective that the partner persistently bypassed the contracted procedures and carried on with the work in a totally uncontrolled environment. This resulted in an abnormal increase in the number of ration cards including those for the families below poverty line. The Department failed to enforce various provisions in the agreement resulting in several inadmissible payments to the partner, non-remittance/delayed remittance by the partner of the user charges collected from public *etc.* Although the partner was to complete the project set-up phase by October 2006, it remained incomplete even five years after the scheduled date of completion. After receiving a payment of ₹ 54.23 crore, the partner closed the operations prematurely in November 2010 without transferring any of the assets except the database of ration cards. An evaluation of the database by a third party showed that it was incomplete in many respects, suffered from many deficiencies and was not capable of preventing duplication of ration cards.

The Department had taken upon itself the responsibility of rectifying the mistakes in the database created by the partner. As the rectification process was still in progress, the process of issue, modification and deletion of ration cards in the State had come to a standstill since November 2010. Thus, various lapses of the Department/partner defeated the very objective of providing improved services to the public and protecting their interests adequately. The PPP project ended up as an example of doubtful value for money in a crucial area of governance.

2.1.1 Introduction

During 2002-03, the Department of Food, Civil Supplies and Consumer Affairs (Department) digitised the data of 42 lakh Below Poverty Line (BPL) families and issued 40 lakh BPL ration cards. However, the digitisation failed to address the needs of the Department as there was no mechanism for updating data. Further, while many ineligible families had been issued BPL ration cards, many eligible families had been left out. The need to eliminate ineligible ration cards and cover all the eligible families under the Public Distribution System (PDS) prompted the Government to order (January 2005) a house-to-house survey which identified (March 2005) 1.27 crore families in the State including 65.79 lakh belonging to the BPL category. In August 2005, the Government set out its vision of issuing computerised ration cards to the eligible families by approving a comprehensive computerisation project. The project sought to (i) improve the targeting of benefits to the citizens by eliminating ineligible ration cards and ensuring ration cards to all the eligible families, (ii) create an effective distribution management system to ensure availability of rationed articles and reduce leakage, (iii) increase the efficiency of the Department by business process reengineering and reducing paper based processes, (iv) align with e-governance initiatives of other departments and leverage the infrastructure set up by these departments, and (v) provide efficient and real-time Management Information System to the Department *etc.* The Department selected (March 2006) a partner under the Build, Operate and Transfer (BOT) model of Public-Private-Partnership (PPP) through a bidding process to implement the project.

The partner was to develop, build, construct and commission the project within 6½ months (set-up phase) and operate and maintain it for a period of five years (operation and support phase). During the set-up phase, the partner was to digitise the survey data and supply temporary ration cards or coupons (TCs) for issue to the families. Thereafter, the photographs and finger biometrics of family members above the age of 12 years were to be captured. After validating the data collected and verifying these with other external data bases, the partner was to issue permanent ration cards to the families. The partner was also required to put in place necessary infrastructure such as hardware, software, networking, connectivity, *etc.*, and host the data on the servers of the Revenue Department available at the State and taluk levels. This would complete the set-up phase, after which the operational support activity was to remain active for a period of five years.

Against the projected expenditure of ₹ 104.52 crore, the Department had spent ₹ 54.53 crore and even the set-up phase of the project has not been completed (September 2011).

2.1.2 Organisational set-up

Secretary, Food, Civil Supplies and Consumer Affairs (Secretary) was responsible for implementing the project. He was assisted by the Commissioner of the Department, Deputy Commissioners and Deputy Directors (DDs) at the district level and Tahsildars at the taluk level.

A Project Management Committee (PMC) headed by the Secretary and consisting of Commissioner, Secretary, e-Governance and others¹ was entrusted with the responsibility of monitoring the implementation of the project and advising the Department in matters related to the project.

2.1.3 Audit objectives

The Audit was taken up with the objectives of ascertaining whether the:

- induction of the private sector agency into the project resulted in improving the value for money for the Government and served public interest;
- selection of partner was fair, transparent and competitive;
- Department had put in place a sound system to oversee the efficiency of the project implementation including infrastructure set-up, quality management and compliance with the contract conditions; and
- public resources had been responsibly and effectively utilised to achieve the intended results.

2.1.4 Audit Scope and Methodology

The audit of the comprehensive computerisation project was conducted during January to May 2011 covering the period 2005-11 on the basis of records made available by the Secretary, Commissioner, Deputy Commissioners (DCs), DDs of nine² out of 30 districts and 18 out of 177 taluk offices. The Secretary accepted the audit findings and stated (August 2011) that he had no comments to offer.

2.1.5 Audit Findings

2.1.5.1 Adoption of PPP model for the project was not justified

**PPP route
taken without
due diligence**

Under the BOT category of PPP model, the private partner is made responsible for designing, building and operating the facilities created during the contracted period and thereafter transferring back these facilities to the public sector. The private partner is to bring the finance for the project and take responsibility for creating the facilities and maintaining these. The public sector either pays a rent to the private partner for using these facilities or allows the private partner to collect revenue from the users.

Audit observed that the decision to adopt the PPP route had not been taken after considering all alternatives. The decision to take the PPP route for the computerisation project was taken (August 2005) by the Empowered

¹ (a) Senior Technical Director and State Information Officer, National Informatics Centre, Bangalore, (b) Deputy Secretary, e-Governance, Computer Research Centre, Indian Institute of Science, Bangalore, (c) Director, Bangalore One, (d) Deputy Director, Bangalore Informal Rationing Area (South), (e) Deputy Director, Food and Civil Supplies, Chickmagalur, (f) Chief Executive Officer of the partner, (g) Deputy Director, East Zone, and (h) Chief Information Officer.

² Bangalore (Rural), Bellary, Bijapur, Chamarajanagara, Gulbarga, Haveri, Mandya, Raichur and Ramnagara

Committee considering the success of the Bhoomi Computerisation Project implemented by the Revenue Department based on the PPP model. The computerisation plan envisaged that the project would be implemented without budgetary support. The Department's role was to finance the project by collecting user charges from the public for issue of ration cards. The partner, on the other hand, was to implement the project in two phases (as discussed in paragraph 2.1.1).

According to the agreement, the partner was to be paid at the agreed rates for each of the activities under the set-up phase like a construction and service contract as shown in **Appendix-2.1**. Under the operation and support phase also, the partner was to be paid every month for the services as shown in **Appendix-2.2**. The PPP model as conceived by the Department was flawed as there was reversal of roles of public sector and private partner. The partner was not required to bring in any finance and the Department undertook the responsibility of mobilising financial resources. The Department failed to analyse in this context whether it would have been possible to create the project on its own under regular contracting procedures instead of taking the PPP route. The Department also did not analyse the risks faced by the project, especially the one arising from dismal performance of the partner disrupting services to the public. While the assets for the project were created with user charges collected from the public, the control of assets remained solely with the partner during the set-up and operation and support phases and the Department did not have any control over these assets. Thus, the project characteristics and objectives did not logically call for the PPP arrangement. The Department underestimated the project complexities and perceived that development of IT system and its operation would be straightforward. The complexities were compounded by enlargement of the scope of the work in the set-up phase [as discussed in Paragraph 2.1.6.2 (i) & (iv)] resulting in additional risks, which the Department failed to manage.

Further, qualifying procedures, the selection of the partner, reporting, oversight system *etc.*, were also flawed, resulting in selection of a partner inadequately equipped to deliver and the consequent failure of the PPP. After receiving a payment of ₹ 54.23 crore, the partner closed their operations prematurely in November 2010 without transferring to the Department any of the assets except the ration card database. The progress achieved by the partner under various items on the date of closure of operations is shown in Table-2, Table-3 and Table-4 in the later part of this report. As the Department failed to consider all relevant risks at the time of embarking upon the PPP arrangement, the process of issue, modification and deletion of ration cards had come to a standstill since November 2010, as discussed in the succeeding paragraphs.

2.1.5.2 Bidding process and selection of partner

(i) Time limit prescribed for receipt of tenders not adhered to

**Time for
receipt of
tenders
reduced**

The Department invited Expressions of Interest (EOI) from companies/consortia of companies for the computerisation project on 5 October 2005, fixing 29 October 2005 as the last date for their receipt. This process was to

facilitate short-listing of the companies eligible for submitting the Request for Proposal (RFP). The Karnataka Transparency and Public Procurement Act (Act) prescribes that 60 days are to be allowed for receipt of tenders where the cost of work put to tender is more than ₹ 2 crore. Although the estimated cost of computerisation was ₹ 75 crore, the time allowed to the bidders for submission of EOI was only 25 days. Government approved (October 2005) the shortened timeframe on grounds of urgency in completing the project. However, Government's decision failed to appreciate the complexity of the project and glossed over the need to allow sufficient time to get good response to the tender in such a complex project. Besides, the Department had never raised the issue of urgency till it approached (October 2005) the Government for grant of exemption from the provisions of the Act. Even thereafter, the Department showed no urgency in completing the project which remained incomplete even as of December 2011. Thus, the rules prescribed for ensuring competitive bidding had been disregarded without adequate justification.

Out of nine EOI received, the Department shortlisted three bidders for submission of RFP. Government approved (March 2006) entrustment of the computerisation project to a partner whose financial bid was the lowest.

(ii) *The project was awarded to a partner not satisfying the eligibility criteria*

Partner was selected bypassing the eligibility criteria

The eligibility criteria prescribed at the time of inviting EOI permitted a consortium of businesses to submit the EOI. The partner, instead of forming a consortium, entered into two separate teaming agreements with companies. The scope of these two teaming agreements was to sub-contract certain portions of computerisation to these companies in the event of the partner being awarded the contract for computerisation. One teaming agreement had been entered into on 15 October 2005 with three relatively smaller businesses for subcontracting creation of beneficiary database and issue of ration cards in seven districts and providing support functions. The other was executed on 7 November 2005, after the last date fixed for submission of EOI, with a business entity subcontracting the work of setting up the infrastructure for computerisation. As one of the teaming agreements was got executed only after submission of EOI, the partner failed to meet the criteria prescribed for short-listing on the date of submission of EOI. Even otherwise, the partner with two separate teaming agreements for subcontracting certain portions of computerisation did not qualify as a consortium. The Department, nevertheless, recognised the partner as a consortium and shortlisted it for submitting RFP.

Further, after referring the offer of the partner to Government for approval, the Department issued letter of intent to the partner on 25 January 2006 without waiting for approval of Government. The Department also erred (March 2006) in executing the agreement with the partner in its individual capacity instead of its capacity as the lead partner of the consortium. While the business entity responsible for infrastructure creation did not participate in the computerisation project at all, two out of the three business entities entrusted with database creation and issue of ration cards also left (February 2007) the

partner. When the Commissioner sought (April 2007) clarification on this issue, the partner informed (May 2007) that the consortium members had withdrawn due to inordinate delay in completion of the project and it would complete the remaining activities on its own. Thus, the partner who did not meet the eligibility criteria and who did not possess the requisite resources was injudiciously entrusted with the work of implementing the computerisation project.

(iii) Terms of contract modified at the time of agreement

**Material changes
were made at the
time of agreement**

The Department issued RFP during January 2006 to three shortlisted consortia of companies and the selection of partner was based on the terms and conditions contained in the RFP, which were, therefore, not to be varied or modified when entering into agreement with the selected partner. Scrutiny, however, showed that the Commissioner materially altered the terms and conditions and nature of deliverables specified in the RFP at the time of entering into agreement with the partner as discussed below:

(a) The RFP did not envisage payment of interest for delayed payment of bills. However, the agreement with the partner required the Department to settle all the bills within a period of 15 days, failing which interest at one *per cent* per month or part thereof was to be paid on delayed payments. This unauthorised change facilitated an extra payment of ₹ 1.16 crore to the partner, out of which ₹ 73.56 lakh was not even as per the approved rate as discussed below:

- The PMC approved (September 2009) extra payment at the rate of ₹ 425 per manday for the additional mandays involved in grievance processing. The PMC also approved payment of interest for delay in payment for grievance processing. Accordingly, the Department paid interest of ₹ 91.85 lakh to the partner. It was further seen that as per the approval, interest at the rate of 8 per cent was to be paid. The approved rate together with interest translated to ₹ 459 per manday. However, the Department paid ₹ 513 per manday for 104375 additional mandays, resulting in an excess payment of interest of ₹ 56.36 lakh to the partner.
- According to the agreement, payment was to be made within 15 days from the date of receiving a claim from the partner failing which interest at the prescribed rate was payable. In respect of Bangalore Informal Rationing Area, the partner submitted a claim for ₹ 1.18 crore on 26 March 2009 and the PMC approved payment thereof only in September 2009. Though the delay of five months and 7 days attracted payment of interest at 6 *per cent*, the PMC approved interest for a period of 31 months at the rate of 8 *per cent* per annum. PMC's approval facilitated an excess payment of ₹ 17.20 lakh out of the interest of ₹ 24.28 lakh paid to the partner.

(b) As per the RFP, the partner was to initially submit a Performance Guarantee for 6.5 *per cent* of the total value of the contract. On successful completion of creation of beneficiary database, ration card issue and infrastructure creation, the partner could replace the bank guarantee initially submitted, with a guarantee for a value that would be the total cost of the

project minus the cost of the work successfully completed. However, as per the agreement, the partner was required to keep the initial performance guarantee only for a period of one year starting from 27 March 2006 irrespective of the progress achieved. This enabled the partner to reduce the guarantee amount from ₹ 6.10 crore to ₹ 1.62 crore from the second year in spite of non-completion of the activities prescribed. Though the partner stopped the work in November 2010 and there were serious deficiencies in performance, the Department failed to take any action for invoking the performance guarantee. The partner did not renew the performance guarantee even for the reduced value beyond 24 January 2011.

(c) The payment schedule for each of the milestones for the set-up phase was also substantially altered to the advantage of the partner at the time of agreement as shown in **Appendix-2.3**. The altered payment schedules particularly for (i) online photography and biometric data capture, and (ii) data consolidation, validation, issue of ration cards and printing of final assignment register extended substantial business advantage to the partner. While the RFP linked the payments with deliverables at the district level, the agreement provided for payments for deliverables at the taluk/village level. The RFP mandated the partner to collect add-on data required by other departments desiring to use the computerisation project to create their database. The partner was to collect this add-on data during photography and biometric data capture. The payment schedule as per RFP, therefore, clubbed the add-on data collection with the activity of online photography and biometric data capture. However, the payment schedule of the agreement delinked this deliverable from photography and biometric capture and listed it as a separate milestone, enabling the partner to become entitled to payment for photography and biometric capture without collection of add-on data. Further, the percentage payments as per the agreement were totally at variance with those stipulated in the RFP.

Further, according to the schedule of work in the RFP, work on the critical component of the project *viz.*, 'Infrastructure creation, ICT tools procurement and deployment, manpower training, and application/software deployment on Pilot basis' was to commence after the first month of the project set-up phase. However, the agreement pushed this important deliverable to the fifth month towards the end of the set-up phase.

(d) As the project was service oriented, the operational portion of the agreement between the Department and the partner was in the form of a service level agreement (SLA) which specified the levels of service to be provided by the partner. The SLA also prescribed the limits and metrics for lower performance besides specifying the penalties for breach of the metrics.

The RFP envisaged that the Department would reserve all rights to update/modify/change/negotiate the SLAs for better implementation of the project. However, the agreement modified this provision to the effect that the parties to the agreement might mutually agree to update/modify/change/ negotiate the SLAs for better implementation of the project. It was further seen that the penalties for breach of metrics prescribed in the RFP for some key milestones were altered in the SLA to the advantage of the partner at the time of

agreement even before commencement of work on the project as shown in **Table-2.1** below:

Table-2.1: Penalties as per RFP and SLA

Service	Penalty as per RFP	Penalty as per SLA
Online photography & biometric data capture, add-on collection and issue of bar coded coupons	Deduction of one performance point (PP) for every incomplete or incorrect record - Penalty of ₹ 10000 per record if errors were detected subsequent to approval and payment	Deduction of 1 PP for every wrong linkage beyond 0.2 <i>per cent</i> wrong linkage
Add-on data collection	Deduction of - 1 PP for every incomplete or incorrect record - Penalty of ₹ 10000 per record if errors were detected subsequent to approval and payment	Deduction of 2 PPs for each percentage point beyond the data error rate of 10 <i>per cent</i>
Data consolidation & validation	Deduction of 2 PPs for each percentage point beyond the accepted data error rate of 10 <i>per cent</i> Penalty of ₹ 10000 per record if errors were noticed after approval and payment.	Nil Nil
Issuance of ration cards	If errors in ration cards were detected, partner was to be penalised ₹ 10000 per record	Penalty of ₹ 10000 per category error noticed after approval and payment.

The issue of ration cards was the eighth milestone in the project set-up phase. The SLA with the partner envisaged that if the ration card issue at village level was completed without any penalty, any schedule related penalties levied earlier for the activities leading to issue of ration cards would be cancelled, entitling the partner to receive full payment. However, these provisions had not been part of the RFP. The provision for cancelling earlier penalties levied was uncalled for and amounted to extension of undue benefit.

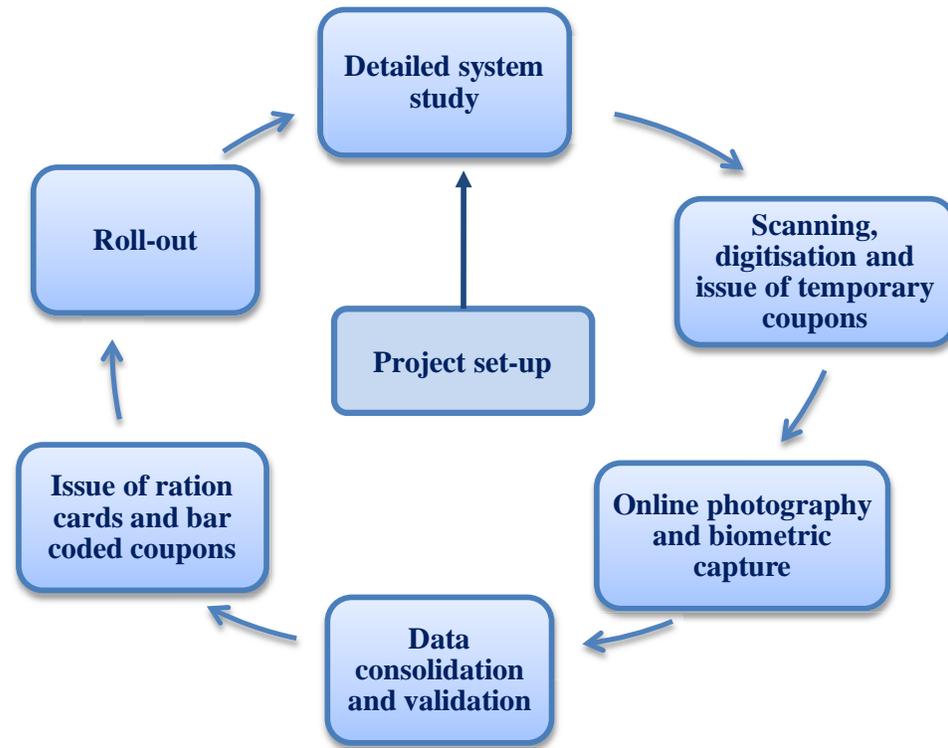
(e) The performance points to be deducted for delays in deliverables were also altered to the advantage of the partner as shown in **Appendix-2.4**. For instance, for a delay of 4 weeks in delivery of a key milestone, the performance point to be deducted as per RFP was 70 while it was only 38.50 as per the agreement.

(f) As per the RFP, the partner was required to create an infrastructure capacity of 200 transactions per hour at the district level. This was, however, modified to 100 transactions per hour to the advantage of the partner in the SLA.

2.1.6 Project implementation

According to the Agreement, the partner was to develop, build, construct and commission the project within 6.5 months (Project set-up phase) and operate and maintain it for a period of five years (Operation and support phase). The

key activities envisaged in the set-up phase as shown below and implementation of these activities is discussed in the succeeding paragraphs:



2.1.6.1 Detailed system study

(i) The partner implemented the project without testing of systems

User acceptance testing of systems not done

The RFP envisaged that the first activity to be taken up by the partner would be the detailed study of various systems and processes for achieving the project objectives. The agreement also prescribed that while the study for data digitisation to be taken up initially was to be completed within two weeks, the detailed system study was to be completed within 2.5 months from the date of award of the contract.

The system study involved a detailed analysis of the existing system, preparation and finalisation of a software development plan, software requirement specifications (SRS), design document, testing and acceptance plan, change management process, third party auditing and finalisation of a training plan *etc.* The partner ignored the system development procedures while implementing the project and carried on without finalising the SRS, design documents *etc.* As per the agreement, the Department was to undertake testing, acceptance and certification of the deliverables under the project. The Department and the partner were to first jointly prepare a comprehensive “Acceptance Test Plan”. The acceptance tests of the systems designed to meet the functionality and performance requirements were to be carried out jointly by the Department, the partner and an independent third party. The

acceptance tests would be complete only on issue of acceptance certificate by the Department to the partner. As no system test plans had been in place, the partner did not conduct user acceptance testing and obtain the approval of the Department. The Commissioner failed to invoke the agreemental provisions and restrain the partner from carrying out the computerisation without conducting user acceptance testing of the systems and did not also verify the appropriateness and adequacy of application software modules that had been used by the partner for the project. In a report submitted to the Commissioner in October 2010, the partner claimed to have developed and deployed various softwares for data validation, bulk ration card issue, ration card management, data export capability, grievance redressal, *etc.* This effectively meant that the partner continued to deploy untested and unaccepted deliverables for capture and processing of data and the Department never had any access to the database throughout the project implementation period. The Commissioner failed to ascertain and assess the procedures put in place by the partner to ensure data security, physical and logical access controls, operational continuity, data back-up and disaster recovery. Thus, the lapses of the Department in enforcing the contracted processes facilitated the implementation of the computerisation project in a totally uncontrolled environment.

2.1.6.2 Data Digitisation and issue of Temporary Coupons

(i) Grievance processing led to abnormal increase of BPL cards and delayed project implementation

BPL families increased abnormally after grievance processing

The door-to-door survey (March 2005) identified 1.27 crore families (65.79 lakh BPL and 61.05 lakh APL families). Although sufficient time had elapsed between the survey and award of the contract to the partner, the Department failed to assess the risks in digitising the survey data without updation. The risks consisted of families not covered by the survey, families splitting up during the intervening period due to various reasons, inaccuracies in the survey *etc.* The Department's decision to proceed with the digitisation without managing these risks was, therefore, flawed. The project design evolved by the Department also underestimated the complexity of issuing TCs immediately after digitisation. The success of this process depended largely on the reliability of the survey data. If TCs were to be issued based on the untested survey data, the Department would be confronted with the risk of having issued TCs to ineligible families, particularly BPL families, in the event of survey data proving to be unreliable. In such a situation, the Department would be burdened with the complicated process of cancelling the TCs already issued to ineligible families after their identification. As the project envisaged capture of photographs and finger print biometrics of the families, issue of permanent ration cards to the eligible families after data validation would have ensured that only eligible families were issued ration cards. However, issue of TCs immediately on digitisation of the untested survey data led to abnormal increase in the number of ration cards, particularly BPL cards, as discussed below:

- As per the agreement, the partner was to complete the digitisation work within 45 days. Against 1.27 crore families as per the survey, the partner supplied 1.19 crore TCs to the Department between August and October 2006. Even before the partner supplied the TCs, the DDs in the districts reported (July 2006) to the Commissioner on the possibility of several types of discrepancies in the TCs to be issued *viz.*, discrepancies in names and ages of the beneficiaries, differences between details as per survey and TCs, changes in categories of APL and BPL beneficiaries, omission of beneficiaries during survey, changes in Fair Price Depots *etc.* The Commissioner authorised (July and September 2006) the partner to receive grievances from the beneficiaries at taluk offices and process these within 15 days. This was a post-survey opportunity given to the beneficiaries to submit their grievances and get the discrepancies rectified. This initiative by the Department was belated and untimely as the exercise ought to have been done before issuing the TCs. The Commissioner directed (October 2006) the partner to grade the grievances under nine distinct categories *viz.*, G1 to G9. Grievances under G1 to G7 related to rectification of errors. While G8 related to change of category from APL to BPL, G-9 related to issue of new cards to those not covered by the survey.
- As of December 2006, the partner had received 58.72 lakh applications containing 64.22 lakh grievances including 10.39 lakh grievances relating to G1 to G7 categories. It was seen in test-checked taluks that the grievances were processed during November and December 2006 and TCs in respect of G8 and G9 grievances were supplied by the partner very belatedly between February 2007 and November 2008. Further, G1 to G7 grievances relating to errors in the database were not acted upon. Non-rectification of these errors pointed out in 10.39 lakh grievance applications resulted in wasting an opportunity to rid the database of errors.

The details of TCs supplied by the partner on the basis of digitisation of the survey data/grievances and those distributed to the beneficiaries were as shown in **Table-2.2** below:

Table-2.2: Number of TCs distributed to the beneficiaries

Digitisation	Number of TCs issued	Number of BPL TCs issued	(Numbers in lakh)
			Percentage of BPL TCs to total number of TCs
As per survey (including Bangalore Informal Rationing Area)	118.96	65.79	55
Additional TCs issued based on grievance processing	21.24	20.43	96
Total	140.20	86.22	68

(Source: Information furnished by the Commissioner)

- As of 1 January 2004, Karnataka had about 78 lakh BPL ration cards out of 1.05 crore families. The number of BPL cards was 2.5 times the estimate of 31.29 lakh BPL families estimated by the Planning

Commission. According to a subsequent sample survey done (January 2004) by the Planning Commission in the State, the exclusion error was about 22 per cent while the inclusion error was in excess of 40 per cent. According to a subsequent report sent (September 2005) by the Principal Secretary of the Department to Government of India, the departmental survey had brought down the BPL families to a much more reasonable number of 60 lakh. However, while the number of BPL ration cards increased to 86.22 lakh after acting on the grievances, the number of families shot up to 1.40 crore as per the TCs issued. As per the agreement, data validation using business rules and external database look up was to be carried out by the partner, wherever possible. However, the partner did not carry out data validation against external databases as the Department handed over these to the partner only in March 2009. Even data validation within the beneficiary database was partially carried out and the partner did not submit exception reports to the Department. The Department also failed to take sufficient steps to sort out the delay in processing of grievances and to examine the reasons for abnormal increase in number of BPL families and take corrective action.

(ii) Irregular payments for grievance processing

**PMC ignored
the lapses of
the partner**

The Commissioner issued (April 2007) a notice to the partner pointing out various lapses on its part including grievance processing and sought to know why the contract should not be terminated. The notice highlighted that more than 22 lakh grievances received were due to the mistakes of the partner such as (i) wrong names of the card holders, their age, their relationship with family members, (ii) wrong addresses, (iii) wrong printing of the APL beneficiary on BPL cards and vice-versa, (iv) large number of missing coupons, (v) printing of similar coupons up to seven times, (vi) wrong ward numbers, (vii) deployment of inexperienced data entry operators, and (viii) non-deployment of sufficient infrastructure and manpower, etc. However, the Commissioner in his report (May 2007) sent to Government recommended against termination of the contract as the project was at a critical stage and any decision to change the agency would result in inordinate delay in implementation of the project.

The partner claimed (August 2007) separate payments for processing the grievances on the ground that it was not part of the agreement and that laptops and manpower had been additionally deployed for carrying out this work. The PMC approved (January 2008 and September 2009) additional payment of ₹ 2.21 crore and ₹ 5.35 crore for the work at taluk and district levels respectively subject to the DDs of the districts certifying the additional systems and manpower claimed to have been deployed by the partner. The PMC's decision to make additional payment of ₹ 7.56 crore to the partner was irregular as it glossed over the lapses of the partner that led to receipt of grievances. It was further seen that the DDs did not maintain any records in respect of the additional systems and manpower deployed by the partner for grievance processing. The Commissioner also had failed to instruct the DDs in the districts to monitor this aspect while authorising the partner to process grievance applications. The DDs, nevertheless, certified the claims of the partner based on the information furnished by the latter without having any

record to check the veracity of the claim. Thus, DDs also facilitated the irregular payment to the partner by furnishing false certificates.

(iii) Excess payment towards printing of grievances

Excess payment for printing of grievances

The partner was to collect the grievances at the taluk office, log in the corrections manually and generate two print-outs of the grievances. While one print out was to be given to the beneficiary, the other was to be filed for further processing. The payment of ₹ 7.56 crore made to the partner included ₹ 56.99 lakh towards printing of 87.68 lakh pages of grievance applications. It was, however, seen that the partner submitted only 54.52 lakh pages of printed grievances in respect of G8 and G9 and did not print and hand over 33.16 lakh grievance application pages in respect of G1 to G7. This resulted in excess payment of ₹ 21.55 lakh to the partner.

(iv) Government ordered issue of temporary ration cards without checks and balances

Temporary ration cards issued on the basis of affidavits

As several eligible families were not covered under the PDS even after acting on the grievances, Government instructed (November 2008) the partner to receive applications from the left-out families at Nemmadi centres established by the e-Governance Department at the Hoblis. These centres provided convenient access point for citizens to avail of a number of government services. Each application was to be accompanied by an affidavit furnishing the requisite details and applicants furnishing false information were liable to face criminal action. Government, however, authorised (January 2009) the partner to issue TCs based only on the affidavits without exercising any checks and balances. The partner was to do the verification after issue of temporary coupons at the Nemmadi centres. Against 34.47 lakh applications received during January to March 2009, the partner issued 28.99 lakh TCs, including 28.44 lakh relating to the BPL category on the basis of self-declarations. Government's decision to issue TCs based on self declarations without any checks and balances was evidently flawed as it gave unlimited scope for bogus ration cards which defeated the very objective of the computerisation project. Further, with the issue of 28.44 lakh TCs relating to BPL category, the number of BPL cards in the State increased from 86.22 lakh to 114.66 lakh, while the total number of ration cards rose to 1.69 crore, which numbers were evidently suspect.

As in the case of grievance processing, PMC approved (September 2009) payment of ₹ 3.74 crore for processing self declarations received at Nemmadhi centres. Though the PMC's approval was subject to the DDs certifying the additional systems and manpower deployed for the purpose, the Commissioner paid ₹ 3.74 crore to the partner without insisting on certificates from the DDs.

2.1.6.3 On-line photography and biometric data capture

After handing over the TCs, the partner's teams were to visit each village with the requisite equipment and capture individual colour photographs and finger biometrics of family members above the age of 12. According to the

agreement, this work was to be completed by 27 August 2006. The partner was to complete online photography and biometrics for at least 70 per cent of the families at the village level and was to make multiple visits to the villages, if necessary. The remaining families were to be covered at the taluks/districts.

(i) Biometric system's capacity not demonstrated

Partner used untested biometric system

The Project proposed to use biometrics for unique identification of the beneficiaries. The process involved capturing biometric data, storing it in a central database and comparing new biometrics with what had been stored already in the database. It required installation of a biometric infrastructure system for capturing the data at the field level, establishment of a central database for holding the data already enrolled and a communication infrastructure connecting the central database and the field level biometric devices.

The capability and performance of a biometric system is determined through two quantitative measures viz., the False Rejection Rate (FRR), and the False Acceptance Rate (FAR). The FRR is the proportion of the eligible people whom the system fails to enroll after validating with biometrics. The FAR is the proportion of ineligible people whom the system permits to enroll after biometric validation. The project proposed a combination of two biometrics for validation viz., finger print and face to uniquely identify each person.

The RFP specified a FRR of 1/1000 and FAR of 1/100000 for finger print validation. The FRR and FAR of face biometrics were not specified in the RFP. The fingerprint and face biometrics combined was to ensure higher performance efficiency in terms of FRR and FAR. The Department was expected to ensure that the partner deployed a biometric infrastructure that was capable of meeting the level of FRR and FAR envisaged in the RFP.

Audit observed that the FRR and FAR of finger biometric prescribed in the RFP were omitted from the agreement entered into with the partner. The suitability of the partner's biometric infrastructure system to meet the prescribed levels of FAR and FRR was never checked as no system testing had been done and no third party audit had been conducted. Thus, the partner captured fingerprint biometrics without demonstrating the capability of the system to meet the prescribed levels of FAR and FRR.

(ii) Tardy performance in biometrics and photography capture

Capture of photographs and biometrics was incomplete

Although the agreement envisaged online photography and biometric capture, the teams deputed by the partner used individual laptops to capture the photographs and biometrics of the beneficiaries. The requisite infrastructure to carry out biometric validation either at the time of capturing photographs and biometrics of the beneficiaries at the village level or at the time of consolidation of data at the taluk level had not been in place to eliminate the ineligible families concurrently. The partner started the capture of biometrics and photographs only in February 2008 and the progress achieved as of November 2010 was as shown in **Table-2.3** below:

Table-2.3: Progress in capture of photographs and biometrics

(Numbers in lakh)

Stage	No. of temporary coupons issued	No. of families photographed and biometrics captured	Percentage of coverage
Data digitisation based on survey and processing of grievances	140.20	99.29	71
Self-declaration by beneficiaries	28.99	24.88	86
Total	169.19	124.17	74

(Source: Information furnished by the Commissioner)

According to the agreement, the partner was entitled to a payment of ₹ 22 per family on completion of capture of colour photographs of all the family members and biometrics of those above the age of 12. Even though 74 per cent progress was reported to have been achieved, it was seen that biometrics of only one member had been captured in respect of 8.40 lakh families. Records did not evidence whether there were such unusually large number of single member families or whether the partner had only partially captured the photographs and biometrics of family members in these cases. Audit could not also verify whether full payment at the agreed rates had been made in these cases.

It was further seen in Mandya and Bijapur districts that the Commissioner paid for partial photography overlooking the information regarding the partial completion furnished (December 2008 and January 2009) by the DDs in the certificates. DDs of Gulbarga, Raichur, Bellary and Ramnagaram districts had also reported (June 2010 to December 2010) that while bio-metrics had been collected from 26,270 families, photographs of the family members did not appear in the display list. DD of Raichur district additionally reported (October 2010) that photographs were captured for the second time in some cases for which the partner had additionally collected ₹ 45 from each of the families. However, the Commissioner failed to investigate these lapses and make suitable deductions from the bills of the partner.

(iii) PMC approved payments for idle labour and equipment deployed by the partner

Partner received payment for idle labour and equipment

The Commissioner instructed (January 2007) the partner to establish 68 designated photographic locations (19 in Bangalore Urban and 49 in Bangalore Informal Rationing Area) by 20 January 2007. Subsequently, the work was limited to Bangalore Informal Rationing Area and the partner was directed to keep the infrastructure ready by 24 January 2007. However, the Commissioner instructed (April 2007) the partner to stop the entire process as it had been decided to collect the applications manually without involving the partner.

The partner claimed that during the period 25 January 2007 to 7 April 2007, manpower and infrastructure deployed at 23 locations for 73 days remained idle and sought compensation. The PMC approved (September 2009) the claim and directed the Commissioner to make payments subject to the DDs certifying the manpower and infrastructure claimed to have been deployed by

the partner. Commissioner irregularly paid an amount of ₹ 1.42 crore to the partner without obtaining the certificates from the respective DDs. The irregular expenditure of ₹ 1.42 crore was indicative of lack of due diligence by the Commissioner before directing the partner to deploy manpower and infrastructure.

2.1.6.4 Data Consolidation and validation

(i) The partner did not validate the data collected

Validation of data not done

After completion of capture of photographs and biometrics, the partner was to validate the data collected and verify the data against other databases such as those of voters list, Bhoomi, LPG, Rural Development and Panchayat Raj Department and telephone list to be provided by the Department to detect ineligible beneficiaries. The comparison was to be made across all beneficiaries in a taluk. Permanent ration cards to the eligible beneficiaries were to be issued only after data consolidation and validation. The partner claimed (February 2011) to have consolidated and validated the data and identified 8.64 lakh ineligible families. However, there was no follow up action for removing these ineligible families from the database. The validation exercise done by the partner was also incomplete as capture of biometrics and photographs of beneficiaries had been only partially done. Any validation done with incomplete biometrics and photographs was not capable of identifying the ineligible families fully. Further, there was significant delay by the Department in handing over the external databases to the partner. The voters list and Bhoomi databases were handed over to the partner only by March 2009. However, the partner failed to validate the data against these external databases.

As per the agreement, the partner was to be paid ₹ 3.30 per family on completion of data validation and submission of exception reports. Although the partner had completed internal validation only partially on account of incomplete biometrics and photographs and also did not verify the data against external databases, Commissioner irregularly paid ₹ 3.05 crore to the partner for data consolidation and validation of 92.40 lakh records.

2.1.6.5 Issue of ration cards

After finalisation of the list of beneficiaries, the partner's teams were to visit the villages and issue ration cards to the beneficiaries after verification of their photographs and biometrics. On completion of the village level exercise, the database was to be updated at the taluk office and beneficiaries who had not collected ration cards at the villages were to collect these at the taluk office against biometric validation.

(i) Department did not have information on ration cards issued

Issue of ration cards not monitored

The progress in issue of ration cards as of December 2010 was poor as shown in **Table-2.4** below:

Table-2.4 : Status of issue of ration cards in the Project

(Figures in lakh)

Stage	No. of temporary coupons issued	No. of families photo-bio captured	No. of permanent ration cards printed by the partner	No. of permanent ration cards issued	Percentage of printed cards to temporary coupons issued	Percentage of permanent cards issued to families photo-bio captured	No. of permanent ration cards printed but not issued
Data digitisation based on Survey data and grievance processing	140.19	99.29	86.95	74.17	62	75	12.78
Self declaration by beneficiaries	28.99	24.88	0.29	0.29	1	1	-----
Total	169.18	124.17	87.24	74.46	52	60	12.78

(Source: Information furnished by the Commissioner)

The Commissioner stated (September 2011) that the partner had dumped about 7.77 lakh ration cards (including 1.19 lakh TCs) in various offices of the Department in the month of November 2009 and these had been lying undistributed for reasons not known to him. It was further stated that the information furnished to audit by his predecessor had been based entirely on figures submitted by the partner and the Department did not have any database to verify and validate these figures. A field enquiry would thus be necessary to verify the TCs and ration cards printed and distributed. The Secretary also reiterated (September 2011) the Commissioner's reply. The reply evidenced that the Department was not in possession of any independent information on the progress achieved by the partner from time to time against each milestone. As the oversight mechanism remained inefficient and ineffective, the project was in an unsatisfactory condition and at a significant risk of failing to deliver.

(ii) The partner did not set up infrastructure for operation and support

Infrastructure for operation and support not created

The RFP envisaged infrastructure creation and manpower training for the operation and support phase concurrently with digitisation of survey data, data consolidation and validation during the second to sixth month of the project set-up phase. However, the partner did not even commence this activity till closure of operations prematurely in November 2010 and the Department also did not enforce the contractual obligation of the partner.

2.1.7 Premature closure of operations by the partner

The partner stopped the work abruptly

Although the partner was to complete the set-up phase by October 2006 as per the agreement, the work remained incomplete even as of November 2010. The various activities undertaken by the partner till November 2010 are as shown in the **Table-2.5** below:

Table-2.5: Various activities undertaken by the partner

Activity	Duration of the activity	
	From	To
Data Digitisation based on survey	April 2006	July 2006
Issue of TCs	August 2006	September 2006
Receipt of grievances	August 2006	November 2006
Digitisation of grievances	November 2006	December 2006
Issue of TCs for G8 grievances	February 2007	September 2007
Issue of TCs for G9 grievances	February 2007	November 2008
Capture of photography and biometrics	February 2008	September 2008
Self-declarations		
Issue of TCs	January 2009	March 2009
Photographs and biometrics	August 2009	November 2009
Permanent ration cards to the beneficiaries	March 2010	November 2010

(Source: Information furnished by the DDOs)

Although the partner was way behind the agreed schedule, the Secretary/Commissioner/PMC never explored the feasibility of fixing a fresh timeframe for completion of the set-up phase and the project lacked clear lines of decision making, accountability or responsibility. The Department failed to ensure that the partner followed the approach that it had been contracted to follow in implementing the project. Ineffective performance management of the contracted process by the Department seriously undermined its ability to hold the partner accountable or pursue it for breach of contract.

The Secretary, in his report (August 2010) sent to the Chief Secretary observed that the data gathered by the partner was nothing but a huge junk and that refining it would involve great effort and time. Observing that the partner had not set up a database yet even after receiving more than ₹ 54 crore, the Secretary reported that the data gathered by the partner was beyond the reach of the Department. The Secretary assessed the loss to the State exchequer at ₹ 720 crore during 2007-08 to 2009-10 as a result of delay in completing the set-up phase, during which the illegal card holders drew rationed articles at subsidised rates.

The partner closed the operations in November 2010 without handing over any of the assets. According to the Secretary of the Department, the partner hosted only the RCMIS³ data subsequently on the State Data Centre by March 2011. However, the Department did not cancel the contract with the partner to gain time to ascertain the facts correctly and secure the data which the partner had gathered and retained. As the Department decided to rectify the mistakes in the database on its own, it procured (March 2011) 205 computers with accessories such as laser printers, biometric devices, laminating machines, scanners and UPS for deployment in taluk and range offices at a cost of ₹ 2.04 crore. This expenditure was necessitated by the failure of the Department to ensure installation of the ICT infrastructure during the set-up phase by the partner.

Government stated (August 2011 & September 2011) that after the transfer of RCMIS data to the State Data Centre in March 2011, the Department brought

³ Ration Card Management Information System

in National Informatics Centre (NIC) to control further damage and to evolve a better system of managing the ration cards. NIC was to refine the data and build a proper database by developing softwares and applications. To identify ineligible cards, the NIC was linking the electricity meter numbers of residences of beneficiaries in urban areas and the house tax assessment numbers in rural areas. The objective behind roping in NIC was not to complete the set-up phase but to (i) prevent further mis-management by the partner and deterioration of the system, (ii) take hold of the ration card data from the partner in view of the huge payments made and time spent and set-up a proper database, (iii) identify ineligible ration cards issued by the partner and eliminate them and rework the APL, BPL and AAY⁴ classification of families, and (iv) arrange for issue of ration cards to eligible families denied of the benefit. Government further stated that very good progress had been achieved and the Department had already identified 16.45 lakh ineligible ration cards in urban areas and another 26.29 lakh illegal LPG gas connections in the State.

2.1.8 The partner's database was technically evaluated

The findings on various issues included in the draft report submitted (December 2011) by the company appointed by Government for a technical evaluation of the computerisation project were as under:

Issue	Findings
Adequacy of the database vis-à-vis the promised specification or industry practices	Data in the database was not complete. Many of the significant tables were empty. There were fields for which no data was computed. "Audit Trail" was not populated for any of the 11 districts taken as sample. The table structure was not consistent across the districts. Database was not in accordance with the specification listed in the agreement.
Appropriateness of the use of database – entry, updation and validation	Due to lack of standard operating procedures (SOPs) and relevant documents, commenting on the process/procedure followed was rendered difficult.
Assessment of the integrity and completeness of the data during digitisation for both biometric and pictorial data	Establishing the integrity and completeness of data was found to be difficult due to non-production of SOPs, relevant documents, final assignment register and display lists. Biometric and pictorial data was in encrypted format and analysis of the same was not possible due to absence of any relevant supporting documents
Instances where more than one ration card was issued to household	The inconsistencies in the database made it impossible to come out with the total number of beneficiaries whose data was captured by the partner. As relevant documents were not provided, establishing instances, where more than one ration card was issued to a household, became practically impossible.
Assessment of outputs with reference to the deliverables and time schedule as per the agreement	Most of the deliverables were not delivered to the Department and no details of the same were provided either by the partner or the Department.

⁴ Annapoorna Anthyodaya Yojane

Besides, the company undertook demonstrations on the field on a sample basis to assess the adequacy of mechanism to prevent duplication of biometric data. Persons whose photographs and biometrics had been taken earlier by the partner were called to a common place in the randomly selected villages. Each person was asked to place the finger on the biometric device. Once the finger print was read, the module searched for a match in the database. This matching was categorised as 'one to many matching'. In cases where the 'one-to-many' search failed, the ration card number was entered and the data retrieved from the data base. The biometric was then verified on a 'one-to-one' basis.

The results showed that the matching percentage of 'one-to-many' was very low and the quality of biometrics was not adequate for use in de-duplication of ration cards. The matching percentage ranged from 81 to 36 *per cent*. Though one-to-one match percentage was better, it was found to be of no use in de-duplication. The draft report of the company was under the consideration of the Department/Government (January 2012).

Thus, computerisation by the partner in a totally uncontrolled environment led to creation of a database full of defects and the pictorial and biometric data collected at a cost of ₹ 27.15 crore were not capable of de-duplication of ration cards. The project ultimately ended up as an example of highly doubtful value for money.

2.1.9 Collection of user charges

2.1.9.1 Non-remittance of user charges by the partner

Partner did not remit the user charges collected from the public

The computerisation project was to be financed through collection of ₹ 65 per card as user charges from the beneficiaries. While the Department was to collect ₹ five for every TC issued, the partner was to collect ₹ 45 from each family at the time of capturing photography and biometrics and another ₹ 15 at the time of issuing permanent ration cards for bar coded coupons to be supplied to the beneficiaries. The Department also authorised the partner to collect ₹ one for each grievance application received. The partner was to remit the amounts collected to the Personal Deposit (PD) account of the Commissioner and all payments to the partner were to be made out of the accumulations in the PD account. In addition, the Department authorised the partner to collect and retain ₹ five for each application collected at the Nemmadi centres.

The partner was to remit the user charges collected within three working days to the PD account failing which interest at 0.5 *per cent* per day on the unremitted amount was to be levied by the Department. A comparison of the remittances to the PD account with the progress reported by the partner showed that ₹ 9.08 crore had been short-remitted to the PD account. On this being pointed out, the partner issued (April and May 2011) cheques for ₹ 6.47 crore which the Department credited to the PD account. The balance amount of ₹ 2.61 crore remained unremitted (October 2011). Though stipulated in the contract, the partner failed to submit daily reports to the Commissioner on the

user charges collected and the various activities accomplished. As the Department failed to enforce submission of daily reports by the partner, it was not in a position to monitor remittance of user charges collected by the partner.

As the daily reports had not been submitted by the partner, audit could not work out the delay in remittances of the user charges from time to time and the consequent interest leviable till the stoppage of work by the partner (November 2010). For the period thereafter till July 2011, the interest payable by the partner aggregated ₹ 16 crore after taking into the cheques received in April and May 2011. It was seen that the Department failed to invoke the penal provisions in the agreement for delayed remittances at any stage.

2.1.9.2 The partner collected user charges which were not authorised by Government

Unauthorised collection of user charges

Apart from the user charges authorised by the Government, the Commissioner approved (March 2010) user charges for various activities during the operation and support phase. These charges were towards issue of application (₹ 5), issue of new ration card on surrender of the old card, demographic corrections (₹ 15), member additions (₹ 50), card category change (₹ 15), deletion of family members (₹ 15), photography for members who had not turned up during the village visits (₹ 50) and issue of duplicate cards (₹ 60). It was seen that neither the agreement with the partner provided for recovery of these charges nor did the Government approve these. Scrutiny of the ration card database of five taluks provided by the Commissioner showed that the partner had collected these charges in test-checked taluks even before completing the set-up phase. The partner neither submitted the details of such fees collected nor remitted these amounts to the PD account. Audit could not assess the fees unauthorisedly collected by the partner as the complete database had not been made available for audit scrutiny.

2.1.9.3 The departmental officials misappropriated the user charges collected

Misappropriation of user charges

The departmental officials entrusted with the task of collecting ₹ five for every TC distributed failed to remit in full to the PD account the amounts collected. It was seen that against ₹ 7.98 crore collected by the departmental officials during August 2006 to November 2006, the amounts remitted to PD account aggregated only ₹ 7.49 crore, resulting in a short remittance of ₹ 0.49 crore. The Department failed to take action against the officials responsible for misappropriation of funds even as of July 2011.

2.1.10 Irregular payments

2.1.10.1 Release of payments to the partner disregarding the provisions in the agreement

Performance was not assessed before payment

As per the agreement, payments to the partner were to be regulated based on the level of service delivered by the partner. The level of service to be met by the partner and the penalty for deficiency in service *etc.*, had been specified in the SLA. At the time of submission of invoices for payments, the partner was to provide detailed supporting documents evidencing SLA compliance and also to host on the departmental web site information regarding SLA compliance, from which service level performance point was to be computed. The partner was also to provide a mobile browser-accessible website for collection of SLA performance statistics from the field.

As the Department did not have the requisite technical competence, it appointed (November 2005) a consultant for assisting in the project implementation. The consultancy was for a period of 16 months ending March 2007, whereafter the contract was not renewed. The reasons for not renewing the consultancy contract or appointing a fresh consultant after March 2007 were not forthcoming. The partner provided supporting documents for computation of service level metrics for the invoices submitted till March 2007. Against the claim of ₹ 7.71 crore made by the partner, an amount of ₹ 1.14 crore was disallowed on the basis of SLA metrics computed by the consultant. Thereafter, the partner did not provide supporting documents showing evidence of SLA compliance. The web-based system for uploading the SLA metrics had also not been set up. Although the partner did not furnish any information regarding SLA compliance, the Commissioner paid an amount of ₹ 47.66 crore to the partner without performance level metrics computation in violation of the agreement.

2.1.10.2 Non-imposition of penalty for erroneous BPL cards

Partner was not penalised for defective cards

The agreement prescribed a penalty of ₹ 10,000 per error in the category of beneficiaries attributable to the partner. As per the report sent (October 2010) by DD, Ramanagara District, the partner had issued 14,436 permanent ration cards in BPL category, although he had identified these families in four taluks as belonging to APL category and instructed the partner to issue only APL cards. Despite the advice, the partner issued permanent BPL ration cards to these 14,436 families. As the DD failed to bring this lapse to the notice of the Commissioner, penalty of ₹ 14.44 crore for error in the category of cards attributable solely to the partner had not been recovered.

2.1.10.3 Non-recovery of income tax at the prescribed rates

Income tax was not recovered from bills

As per Section 194J of the Income Tax Act, any payment made with regard to services rendered for professional or technical services would attract TDS at 10 *per cent* along with surcharge, education cess and secondary and higher education cess as applicable (the rate was 5.66 *per cent* for the financial year 2006-07 and 11.33 *per cent* from financial year 2007-08). The Commissioner

failed to deduct TDS of ₹ 71.05 lakh from the bills of the partner. However, the Department agreed (April 2011) to recover it from the partner.

2.1.11 Monitoring

2.1.11.1 State level monitoring cell was not set up

Monitoring cell not set up

As per the agreement, a State level monitoring cell, which would act as a single point of contact for all issues, was to be set up for the project. The monitoring cell was to be set up by a cross-functional project management team and the required equipment was to be installed. Within one week of award of contract, a portal was needed to be set up by the partner that would start providing online status of various activities in progress at all implementation locations. The partner was to provide five computers at various key food offices to access and update information on this portal for effective communication between the partner and the Department. The monitoring cell was to have sufficient storage facility to act as an offsite backup for the data generated during ration card issue. It was seen that no monitoring cell had been set up as envisaged in the agreement.

2.1.11.2 Project Management Committee did not meet as prescribed

PMC failed to meet at prescribed interval

The Project Management Committee (PMC) under the chairmanship of Secretary was to meet every month for considering the monthly performance reports, change control notes *etc.* The PMC met only seven times during the period May 2006 to September 2009 and did not meet thereafter. The Secretary stated (August 2011) that the PMC did not meet after April 2010 as steps had been initiated to contain the damage and payment to the partner was stopped in April 2010. Though the landslide had been arrested since April 2010, PMC's failure to meet at the prescribed interval till April 2010, the PMC rendered the project management ineffective.

2.1.11.3 The partner did not submit the reports prescribed

Department failed to obtain reports from the partner

The partner was to submit to the Commissioner daily and monthly reports of all work done besides developing a web-based project monitoring tool to enable the Department to monitor the progress of work at the taluk level. However, the partner failed to submit daily and monthly reports and did not put in place the web-based monitoring tool. The Department did not obtain from the partner reports relating to even major project components like beneficiary database creation, ration card issue, infrastructure creation *etc.*, and thus, lacked necessary inputs to monitor the implementation of the project.

2.1.12 Conclusion

This is an example of highly doubtful value for money in a crucial area of governance. The Department wasted ₹ 54.53 crore through its failure to enforce the agreed terms of implementation during the project's lifetime. The Department rushed through the project initiation, ended up with an ill-equipped partner, under-appreciated the project's complexity and risk and

mismanaged the partner's performance and delivery. The key aims of creating an effective public distribution management system remained undelivered. The Department limited the downside and undertook a cleansing process by tying up with the NIC but the successful delivery of this initiative continued to remain a serious concern as elimination of ineligible families and coverage of all eligible families under this process was not fully guaranteed.

All PPP models aim at providing improved public services by sharing risks in a balanced manner. Any PPP arrangement should, therefore, yield value for money and protect public interests adequately. The PPP arrangement for computerisation was heavily loaded in favour of the partner who was not required to bring in finance for the project and share most of the risks associated with the implementation of the project. As the project was financed fully from moneys collected from public, the partner ought to have provided value for the money paid by the public.

As there were chronic delays in issue of permanent ration cards, the Department and partner failed to deliver the expected services to the public even after collecting the charges well in advance. As of December 2010, 58.57 lakh families who had been subject to photography and biometric capture had not received permanent ration cards even after having remitted ₹ 26.36 crore for the purpose. Similarly, 68.59 lakh families who had paid ₹ 10.29 crore for bar coded coupons were yet to receive the assured services. It was seen that though the Department dropped the idea of issuing bar coded coupon, as it was not a feasible option, it continued to collect ₹ 15 per family at the time of issuing permanent ration cards. Thus, various lapses of the Department/partner defeated the very objective of providing improved services to the public and protecting their interests adequately.

2.1.13 Recommendations

- There is a compelling need to fix responsibility for various lapses in the project formulation, contract award and implementation of the project which caused huge loss to the State exchequer in the form of subsidy given to ineligible families besides frittering away ₹ 54.53 crore out of the resources collected from the public and bringing the process of issue, modification and deletion of ration cards in the State to halt since November 2010.
- The rectification of the mistakes in the database needs to be taken up on a war footing so as to remove the errors and improve the targeting of benefits to the citizens by eliminating ineligible ration cards and ensuring ration cards to the eligible families.

HOME DEPARTMENT

2.2 Fire and Emergency Services in Karnataka

Executive Summary

The Department of Karnataka State Fire and Emergency Services is responsible for fire prevention, fire safety, fire fighting/suppression besides disaster preparedness and management. The Department embarked (August 2005) upon a project *viz.* K-SAFE 2010 for establishing fire stations in all the taluks and places of high risk industries in the State besides upgradation of the existing fire stations and modernisation. K-SAFE 2010 was to be implemented by the Karnataka State Police Housing Corporation over a period of five years. The implementation period was further extended up to March 2013.

Against the total requirement of 201 fire stations in the State, only 176 had been established as of December 2011. Out of 176 fire stations that had been functional, 43 were housed in temporary and rented buildings which lacked basic infrastructure facilities. Out of 1,647 vehicles/equipment required by the fire stations, only 1,054 had been procured as of December 2011. Even the basic vehicles/equipment such as jeeps, utility vehicles, water tenders and bouzers, portable pumps, *etc.*, had not been procured to the extent required. Except for Bangalore and Hubli, other cities in the State did not have special equipment to manage fire accidents in high-rise buildings. Search and Rescue units had not been established at the metropolitan, district and taluk levels as planned. While the yearly increase in the number of fire incidents ranged from 9 to 13 *per cent* during 2006-11, the proportion of lives lost to those saved decreased from 113 *per cent* in 2007-08 to 79 *per cent* in 2010-11. The value of property lost and saved as assessed by the Department was not reliable as this was not professionally assessed. The Department failed to analyse the fire reports prepared by the fire stations and in the process, lost the opportunity of identifying the shortcomings and improving upon its preparedness.

Hazmat vans required for dealing with industrial disasters had also not been procured. The Department lacked facilities and staff for undertaking major repairs of vehicles at the Central Workshop in Bangalore, which catered to only routine maintenance of vehicles predominantly from Bangalore. Routine and major repairs to vehicles in other places were carried out at private workshops without adequate checks and balances to ensure that these had been executed economically and efficiently.

Vacancies in the post of operating staff aggregated 2,521 (40 *per cent*) and the Department had not initiated the recruitment process despite Government's approval in December 2009, due to non-finalisation of cadre and recruitment rules. Training of personnel was ineffective as there was huge shortage of trainers in the Training Academy.

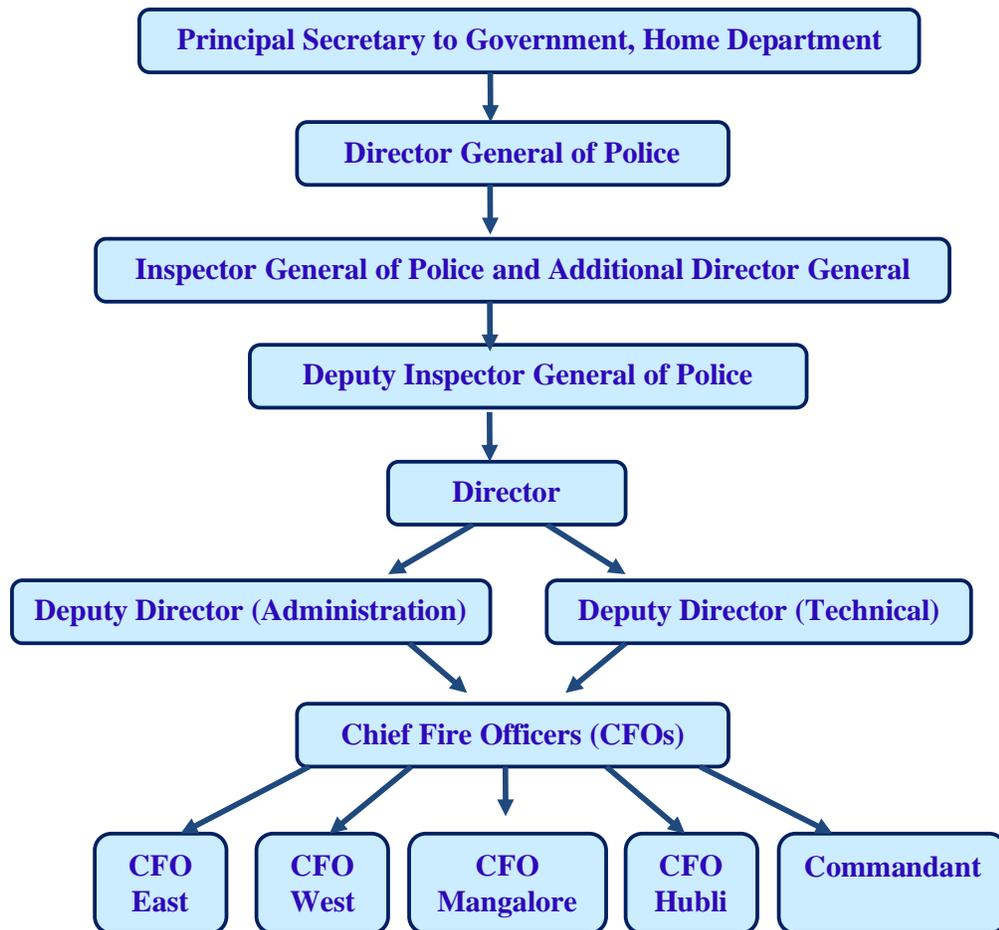
The Department did not have a well-functioning communication system to communicate effectively with the fire companies at the accident spots. While obsolete wireless sets had not been replaced, repeater facilities had not been established in 18 out of 30 districts. Ten out of 11 posts sanctioned for the communication wing remained vacant. The modernisation of the Department had not progressed as envisaged in K-SAFE 2010. The Department's role in fire-safety education was also limited. The enforcement of fire code was ineffective due to absence of adequate enforcement provisions in the Fire Services Act, 1964.

2.2.1 Introduction

The Karnataka State Fire Service was constituted under the Karnataka State Fire Services Act 1964 which came into effect from 15 May 1971. The Fire Force Department which was an integral part of the Police Department till 5 November 1965 started functioning as a separate department thereafter. The overall control of the Department vested with the Home Department. With its increased responsibilities to cover all kinds of hazards, the Department was re-designated as Karnataka State Fire and Emergency Services in 2004. The Department which started with 11 fire stations in 1971 had grown over the years and had established 113 fire stations by 2005. The number of fire stations in the State had increased to 176 as of December 2011.

2.2.2 Organisational set-up

The Department of Fire and Emergency Services (Department) is headed by Principal Secretary, Home Department. At the organisational level, the Department is headed by a Director General of Police (DGP) who is assisted by an Inspector General of Police & Additional Director General, a Deputy Inspector General of Police Services, a Director and other officers as shown in the chart below:



The CFOs are assisted by Regional Fire Officers, District Fire Officers and Fire Station Officers.

2.2.3 Audit Objectives

The audit was conducted with a view to assess the preparedness of the Department in fire prevention/suppression and disaster management. The main objectives of the performance audit were to ascertain whether:

- the Department had adequate institutional mechanism, competent manpower and deployment of equipment to protect citizens' life and property against the dangers of fire and other emergencies that might occur in the response area;
- the Department assessed risks, developed long term plans and maintained a response capability that was safe and effective; and
- the enforcement of fire and life safety codes for the prevention and control of structure fires was efficient and effective.

2.2.4 Audit Scope and Methodology

The audit of the Department covered the transactions for the period 2006-11. The audit sample covered the Directorate, four Chief Fire Officers (CFOs), Commandant, Training Academy, Central Workshop, Search and Rescue Unit, Emergency Paramedical Services Wing, seven Regional Fire Officers (RFOs), twelve District Fire Officers (DFOs) and sixty fire stations (**Appendix-2.5**) in fourteen districts. These sixty fire stations were also jointly inspected by audit with the officers nominated by the Department.

The audit commenced with an entry conference with the Secretary, Home Department (Fire and Emergency Services) on 18 April 2011 wherein the audit methodology, scope, objectives and criteria were explained. Field audit of records of the selected CFOs, RFOs, DFOs and the fire stations was conducted between 14 February 2011 to 11 July 2011. The audit comprised scrutiny of records, discussion with the Departmental officials and field visits. An exit conference was held with the Principal Secretary on 28 September 2011 to discuss the audit findings. The replies of the Department have been incorporated at appropriate places in this report.

2.2.5 Perspective Plan

A long-range perspective plan provides an organisation with a framework to develop goals and programmes, strategies and work plans for implementing programmes and deploying resources and setting performance indicators for quality assurance and measurement of the Department's progress towards its goals.

During 2004, the Fire Services Department was re-designated as Fire and Emergency Services responsible for (a) fire prevention/safety, fire fighting/suppression, and (b) disaster preparedness and management. To firm

**K-SAFE 2010
was taken up
based on
Perspective
Plan**

up the strategies for achieving the modified goals, the Department prepared a Perspective Plan through a consultant in February 2005. The Plan provided for a project viz., K-SAFE 2010 which would establish fire stations in all the taluks of the State, besides up-gradation of the existing fire stations and modernisation of the Department. The Plan assessed the institutional strengthening and capacity building requirements, prepared the road map for establishment of a network of fire stations in the State, worked out the up-gradation requirements of the existing fire stations, highlighted the manpower and training requirements etc.

Based on the recommendations made in the Perspective Plan, Government accorded (August 2005) sanction for implementation of K-SAFE 2010. The project was to be implemented during 2005-10 with an estimated investment of ₹ 323.30 crore. The main objectives of the Project were to:

- establish 80 fire stations in taluks and seven additional fire stations in Bangalore and one fire station at Dharwad district headquarters;
- up-grade 96 existing fire stations;
- establish Search and Rescue Services and Emergency Paramedical Services; and
- up-grade the Training Academy, computerise the Department and install wireless communication system.

The project was to be funded by different sources as shown in **Appendix-2.6** The Empowered Committee constituted for implementation of the project nominated (August 2005) the Karnataka State Police Housing Corporation (KSPHC) as the implementation agency for the project.

2.2.6 Budget and expenditure

Shortfall in provision of funds for K-SAFE 2010

The details of budget provision under Plan and Non-Plan for the regular activities of the Department and the expenditure incurred thereagainst during 2006-11 were as shown in **Table-2.6** below:

Table-2.6 Budget provision and expenditure during 2006-11

(Rupees in lakh)

Year	Budget Provision		Expenditure		Percentage of savings	
	Plan	Non-plan	Plan	Non-plan	Plan	Non-plan
2006-07	100.00	936.12	98.79	911.99	1	3
2007-08	500.00	1001.95	500.00	943.66	-	6
2008-09	100.00	981.93	100.00	1,023.48	-	-
2009-10	100.00	1,155.57	94.84	806.19	5	30
2010-11	1,100.00	1,235.05	1,095.25	1052.73	-	15

(Source: Information furnished by the Directorate)

While the savings under Plan was very meagre, those under Non-plan were higher during 2009-10 mainly due to non-filling up of vacancies. In addition to these funds, ₹ 241.95 crore⁵ had been released by various agencies to

⁵ ₹ 147.40 crore by Finance Department, ₹ 31.40 crore from North Karnataka Urban Infrastructure Development Project, ₹ 33.75 crore by Urban Development Department and ₹ 29.40 crore by the Revenue Department

KSPHC for K-SAFE 2010 as of December 2011. Against this, expenditure of ₹ 246.37 crore⁶ had been reported by KSPHC. K-SAFE 2010 could not be completed by 2010 mainly due to non-receipt of funds from the targeted sources. The releases to KSPHC upto December 2011 accounted for only 75 per cent of the project cost of ₹ 323.30 crore. Though K-SAFE 2010 expected to generate ₹ 120 crore from NABARD, Government of India and XII Finance Commission, it did not materialise. As a result, the Finance Department supplemented (December 2006 to December 2011) the resources with additional funds of ₹ 94.90 crore. As there was still shortfall in receipt of funds by KSPHC, the implementation period of K-SAFE 2010 was extended by the Empowered Committee up to March 2013.

2.2.7 Infrastructure creation

2.2.7.1 Fire stations

(i) Targeted number of fire stations not established

Delay in establishing 25 fire stations

The norms laid down by the national level Standing Fire Advisory Council (SFAC) prescribed setting up of at least one fire station in a 10 sq km radius for urban areas and 50 sq km radius for rural areas. As per these norms, 4,130 fire stations were to be established in the State. However, the State gave priority to establishing fire stations at every district and taluk headquarters and places of high risk industries as the SFAC norms had been considered unrealistic. Based on the State's priority, the Perspective Plan assessed the requirement of fire stations at 201 against 113 already existing as of February 2005. K-SAFE 2010 was to establish the remaining 88 fire stations. As of December 2011, only 176 fire stations had been established. Of the remaining 25 fire stations not set up in the taluks, 16 belonged to the medium risk category and 9 to the low risk category. Out of 60 civil works taken up exclusively for upgrading the existing fire stations including staff quarters, only 31 had been completed. As the State's prioritisation of establishing one fire station in each taluk had been founded on the basic need to respond to emergencies threatening lives, property, economy and businesses, delay in establishment of 25 fire stations in the taluks even as of December 2011 resulted in continued neglect of these places with varying degrees of risk potential.

(ii) Fire stations functioning in rented and temporary buildings

Fire stations did not have their own buildings

The Perspective Plan highlighted that space in fire stations housed in rented buildings was generally inadequate to accommodate all firemen and officers, resulting in overcrowding. It further observed that vehicles in fire stations housed in temporary buildings were exposed to the weather and, therefore, to frequent wear and tear, leading to increased running cost. It was observed that out of 176 fire stations established, 133 had been housed in own buildings, 31

⁶ ₹ 147.40 crore against Finance Department, ₹ 31.43 crore against North Karnataka Urban Infrastructure Development Project, ₹ 51.63 crore against Urban Development Department and ₹ 15.91 crore against Revenue Department

in temporary buildings and 12 in rented buildings as of December 2011. It was further seen during the joint inspection that fire stations functioning in the temporary and rented buildings lacked basic infrastructure like separate rooms for office, store, rest, record *etc.*, as per SFAC norms.

(iii) Non-availability of water in fire stations

Fire stations did not have adequate water storage facility

SFAC norms stipulate the availability of continuous water supply as a pre-requisite for the functioning of a fire station. The Perspective Plan identified water scarcity as a problem which most fire stations had been continuously struggling with. As dedicated water hydrants were not available across the State, there was a compelling need for each of the fire stations to have water tanks with adequate storage capacity to tide over the water scarcity problem. It was, however, seen that while the newly constructed fire stations were provided with storage tanks of 1.50 lakh litres capacity, the existing fire stations had no storage tanks or tanks with only limited storage capacity.

The Director stated (September 2011) that while fire stations with permanent infrastructure had underground static water tanks, other fire stations having space constraints arranged water supply through water lorries and water bouzers. It was further stated that all the vehicles and pumps available with Department were designed to draw water from any open source or static tanks in and around the incident area. Though audit did not notice any problem faced by the Department while responding to fire calls due to non-availability of dependable sources of water, the fire stations having no storage facility were exposed to the risk of inadequate water availability during emergencies.

2.2.7.2 Equipment

(i) Shortage of vehicles/equipment

Huge shortfall in procurement of vehicles/equipment

As per SFAC norms, each fire station is to be equipped with one pumping unit, one water tanker (water lorry) and one ambulance van. Further, in urban areas, depending on the population within the jurisdiction of each fire station, the number of pumping units is to be increased at the rate of one unit for every 50,000 persons. Fire stations serving a population greater than 3 lakh should have one rescue van (RV) per 3,00,000 persons and an additional RV for every 10 lakh persons. These norms have been prescribed to ensure improved operational efficiency.

Based on these norms, the Perspective Plan had assessed that 4,017 units each of Water Tender, Water Lorry and Ambulance were to be provided against the availability of 192, 40 and 23 respectively as shown in **Appendix-2.7**. As the SFAC norms were too stiff to achieve and vehicles on such a large scale were not really required, the Perspective Plan reworked the requirement of various vehicles/equipment based on the norms fixed by the State Government. The Perspective Plan also highlighted that the State norms were practicable and achievable by March 2010. However, there was huge shortfall in procurement of vehicles/equipment even as per the State norms as of December 2011 as shown in **Table-2.7** below:

Table-2.7: Procurement of vehicles/equipment

Sl. No.	Type of equipment	Vehicles /Equipment available before the Project commenced	Vehicles/Equipmen t required as per State norms	Vehicle/ Equipment available	Shortfall	Percentage of shortfall
1.	Hazmat van	0	4	0	4	100
2.	Advance Rescue tender	0	23	12	11	48
3.	Rescue tender	3	19	11	8	42
4.	Sky lift	1	7	3	4	57
5.	Control Post van	1	5	1	4	80
6.	Foam tender	1	6	2	4	67
7.	Jeep/utility vehicle - Varuna	7	176	6	170	97
8.	Flood Rescue van	0	6	0	6	100
9.	Rapid response team	0	176	4	172	98
10.	Water Tender	195	412	362	50	12
11.	Water Bouzer	1	39	12	27	69
12.	Portable pumps	144	406	328	78	19
13.	Trailor pump	34	34	34	0	0
14.	Towing tender	48	48	55	-7	0
15.	Water lorry	40	40	40	0	0
16.	Ambulance	23	43	21	22	51
17.	Generator	16	202	162	40	20
18.	TTL	1	1	1	0	0
	TOTAL	515	1,647	1,054	593	

(Source: Information furnished by the Directorate)

Only four vehicles/equipment were available as per State Government norms and the shortfall in availability of the remaining vehicles/equipment ranged from 12 to one hundred *per cent*. Even the basic equipment such as jeep/utility vehicles, rapid response team, water tenders/water bouzers, portable pumps, generators *etc.*, had not been procured to the extent required. Sophisticated equipment like Hazmat van to deal with oil and electrical fires in high risk areas, sky lifts in urban areas having multi-storied buildings, flood rescue vans for flood prone and coastal areas, control post van in major towns had also not been procured as planned due to delay in receipt of funds by KSPHC (as discussed in Paragraph-2.2.6). It was further seen that there were delays ranging from 73 to 371 days in the allotment of new vehicles/equipment to the fire stations after procurement in respect of eight advance rescue vans, one sky lift (52 mtrs), three medium rescue tenders and two bouzers, 34 water tenders and seven utility vehicles. Delays ranging from 370 to 690 days were also noticed in the allotment of portable pumps to 14 fire stations. The RFO, Central Workshop attributed (April 2011) the delays to late commissioning of these by the suppliers, rectification of defects noticed during inspections and other formalities like training, insurance *etc.* The reply was not acceptable as the Department took only 5 to 15 days to complete the formality in respect of 15 vehicles and abnormally delayed these in respect of other vehicles. Abnormal delay in allotment of these vehicles/equipment after procurement would defeat the very objective of their procurement.

The impact of the non-availability of vehicles/ equipment is discussed below:

- ***Non-existence of Rapid Response Teams and Jeep/Utility Vehicle in most fire stations***

170 fire stations did not have vehicles for rapid response

The Perspective Plan prescribed a minimum of two water tenders for every fire station. Further, the plan envisaged deployment of rapid response team with a motor cycle and a jeep/utility vehicle in all the fire stations. These vehicles were to be fitted with modern firefighting equipment and latest communication gadgets. It was, however, seen that 17 out of 60 fire stations jointly inspected had only one water tender. Rapid response vehicles and jeep/utility vehicles had not been supplied to 170 fire stations across the State even five years after commencement of K-SAFE 2010.

The Director stated (July 2011) that vehicles for rapid response were not readily available and were to be got fabricated against orders. It was further, stated that this process was time consuming and depended on the availability of budget. The reply was not acceptable as the Department had not even firmed up proposals for procurement of these vehicles by KSPHC. Non-availability of these vehicles affected the preparedness of the Department to respond timely and adequately to emergencies.

- ***Advance rescue vans in short supply***

11 districts did not have rescue vans for emergencies

It was seen that only 19 districts had been provided with the rescue vans for emergencies. However, the fire personnel in these districts had not been trained on rescue activities including swimming and diving, resulting in non-utilisation of the diving sets available in the advance rescue vans and the rescue vans. The remaining 11 districts did not have the wherewithal to handle rescue activities during emergencies.

- ***Special equipment for high rise buildings***

The Department was not equipped to manage fire accidents in high rise buildings

Special equipment are required in cities with high rise buildings like Bangalore, Belgaum, Hubli, Mangalore, Mysore *etc.* As of December 2011, the Department had in its possession one turn table ladder (TTL), one hydraulic platform (Snorkel) and two newly procured sky lifts for the entire State. However, except for one vehicle stationed at Hubli, the others had been retained in Bangalore. Thus, all major cities in the State except Bangalore and Hubli were ill-equipped to manage fire incidents in high rise buildings.

- ***Non-procurement of Hazmat van and flood rescue vehicles***

Lack of capacity building for industrial accidents and floods

The Perspective Plan had recommended procurement of four Hazmat vans for deployment in places having hazardous industrial companies. Deployment of Hazmat van in Mangalore city was to be accorded priority as the city and its neighbourhood had 12 most hazardous industrial companies. The Plan had also recommended deployment of six flood rescue vans in flood prone districts. The Department had not procured these vehicles as of December 2011. The Director stated (January 2012) that the Department had examined

the quality of Hazmat vans procured by the States of Andhra Pradesh, Delhi and Tamil Nadu and decided not to procure this vehicle immediately as the design was defective and not suited to handle nuclear, biological and chemical disasters. It was further stated that the Department was designing a new vehicle to cater to these disasters. The fact, however, remains that the Department did not possess the wherewithal to deal with industrial accidents and hazards caused by floods.

- ***Generators lying idle***

Generators in fire stations not put to use

The Perspective Plan had envisaged procurement of 202 generators. As of December 2011, 162 generators had been procured and distributed to various fire stations. A joint inspection of the 60 stations showed that while generators had not been supplied to 11 fire stations, 16 fire stations had not put these to use for want of kerosene though the warranty period had expired in all these cases. Director stated (July 2011) that the unit officers had been instructed to purchase kerosene from available sources and maintain reserve stock. It was further stated that the places where generators had remained idle would be examined and the problem would be sorted out. Thus, generators, though available, did not serve the intended purpose of uninterrupted power supply in times of need.

- ***Delay in fabrication of 18 mini water tenders***

Fabrication of 18 mini water tenders delayed

The Department had purchased (August 2010) 18 chassis at a cost of ₹ 1.86 crore from a company having rate contract with Director General of Supplies and Disposals. The Department invited (September 2010) tenders for fabrication of these chassis into medium size water tenders under the two bids system. The Department was to open and evaluate the financial bids of only those tenderers whose technical bids had been scrutinised and accepted. Out of 13 tenders received, the Department cleared the technical bids of eleven as these had satisfied the prescribed criteria like past performance, experience, capability in terms of manpower and equipment, *etc.* After evaluation of these eleven financial bids, the Department accepted (January 2011) the lowest offer of a company amounting to ₹ 12 lakh per vehicle. However, while communicating the acceptance, the Department intimated the company that the acceptance was subject to inspection of its premises for assessing the availability of the infrastructure and capability to execute the work as per the specifications within the time schedule. It was, however, seen that inspection of the premises of the company did not form part of the tender conditions. The inspection report (January 2011) highlighted that the company had adequate infrastructure, manpower, testing facilities and had also carried out similar fabrication works. The report, however, highlighted that the company had not fabricated vehicles as per the requirements specified in the tender. Based on this report, the Department cancelled (February 2011) the award of the work to the company. However, the firm challenged the decision before the High Court of Karnataka which quashed (August 2011) the cancellation on the ground that the power of rejection had been exercised in an arbitrary manner. The High Court directed the Department to finalise the bid from the stage it was prior to cancellation. Consequently, the Department entrusted

(October 2011) the fabrication of 18 chassis to the company which was to deliver the fabricated water tenders by February 2012.

Thus, incorrect cancellation of the lowest tender delayed the fabrication of 18 chassis and deprived the needy fire stations of water tenders.

- ***Breathing apparatus not replaced***

Breathing apparatus not replaced after normal life period

Breathing apparatus is one of the important components carried in water tender and rescue vehicle for use in non-breathable condition. The SFAC norms prescribe a normal life of four years for breathing apparatus. The joint inspection of 60 fire stations, however, showed that while two fire stations did not have breathing apparatus, the apparatus in another 37 fire stations were 4 to 33 years old.

The Director stated (July 2011) that replacement of the breathing apparatus on completion of four years was not mandatory and the damaged components like face mask, gauges, *etc.*, were replaced and the apparatus was reconditioned periodically. As this equipment is a basic requirement for fire fighting, its non-availability or over-reliance on reconditioning the available apparatus irrespective of its normal life has the potential of affecting the preparedness of the Department for combating emergencies.

- ***Inadequate stock of foam compound***

Stock of foam compound inadequate in fire stations

The requirement as per SFAC norms is that each fire station is to maintain a minimum stock of 500 litres of foam compound to combat chemical fires. The joint inspection of 60 fire stations showed that while the one at Peenya, Bangalore had no foam compound in stock for eight months, forty six others had less quantity of foam ranging from 40 litres to 480 litres. Of these, seven stations had less than 100 litres of foam compound in stock and therefore, were ill-equipped to combat chemical fires.

- ***Old vehicles not replaced***

53 per cent of the vehicles were more than 15 years old

Though vehicles are to be replaced after 10 years as per SFAC norms, 281 (53 *per cent*) out of 528 vehicles in the Department were more than 15 years old, the earliest being a water tender procured in 1975. These included 218 special vehicles, 10 ambulances, 41 towing tenders and 12 utility vehicles. The Department had not prepared any plan for replacement of these old vehicles.

(ii) ***Functioning of the Central Workshop at Bangalore***

Running of the workshop became non-viable

To provide all-round maintenance assistance to vehicles and undertake repairs of special equipment, the Department had established during 1967 a central workshop in Bangalore which functioned under the control of a RFO. It was, however, seen that while one post of Fitter, one post of Welder and one post of Electrician had remained vacant since March 1980 to October 1998, 45 *per cent* of the posts of Driver Mechanics remained unfilled since 1982.

In the absence of the requisite technical manpower, the central workshop attended to only routine repairs and the major repairs were outsourced to private workshops. The details of repairs undertaken at the central workshop during the last five years were as shown in **Table-2.8** below:

Table-2.8: Repairs undertaken by the Central workshop

Year	No. of repairs under taken	No. of vehicles repaired	No. of vehicles from Bangalore repaired	Percentage of vehicles from Bangalore	No. of vehicles from other districts repaired	Percentage
2006	163	153	151	99	2	1
2007	112	103	101	98	2	2
2008	142	133	119	89	14	11
2009	165	156	150	96	6	4
2010	151	131	124	95	7	5
Total	733	676	645	97	31	

(Source: Information furnished by the RFO, Central Workshop)

Only 31 vehicles from other districts had been repaired during 2006-10 at the central workshop which catered predominantly to the needs of vehicles in Bangalore. Further, as per the provisions in the Departmental Manual, the officer-in-charge of the central workshop was to conduct inspections of the fire stations to ensure that the vehicles were in good condition and were provided routine maintenance. However, no such inspections had been conducted during the period covered by audit. No standard operating procedure had been framed for maintenance and circulated to the fire stations for compliance. Thus, the role of the central workshop was limited to undertaking routine repair works of vehicles predominantly from Bangalore and the objective of establishing the central workshop was, therefore, not achieved.

As per SFAC norms, each of the district fire stations is to be provided with a mobile workshop to ensure continuous maintenance of vehicles, besides spare vehicles in case of vehicle break-downs. It was, however, seen that neither the mobile workshops nor spare vehicles had been provided in the district fire stations.

The repairs to vehicles in districts other than Bangalore and major repairs to vehicles in Bangalore were carried out at private workshops. It was seen that the Department had not shortlisted the private workshops based on any criteria such as infrastructure and technical manpower to handle special equipment. On the other hand, whenever repairs were found necessary, the fire station officer obtained three quotations from local workshops and sent these for Director's approval of the lowest through DFO and RFO. After approval, repair works were got done at the local workshops. This centralised system of according sanctions for undertaking repairs in private workshops has the potential of affecting the timely upkeep of the vehicles. Records of 60 fire stations showed that 44 vehicles in 16 fire stations were off the road during 2006-11 for periods ranging from 13 days to 11 months. With no spare

vehicles at their disposal, the fire stations were not adequately equipped to handle emergencies during the long periods of break-down of vehicles. Further, the reasonableness of the amounts quoted by the workshops was not verifiable by the Department as it did not have the requisite technical expertise to scrutinise the quotations. Thus, adequate checks and balances did not exist to ensure that the repair works at the private workshops were executed economically and efficiently.

2.2.7.3 Search and rescue

Search and rescue units not set up at districts and taluks

K-SAFE 2010 envisaged establishment of Search and Rescue (SAR) wings in all fire stations across the State. Vehicles and equipment required for the SAR were to be procured out of Calamity Relief Fund released by the Revenue Department.

It was, however, seen that only one SAR wing headed by a RFO and assisted by two fire station officers and six leading fireman had been established at Bangalore and this wing had not conducted any rescue operation as of December 2011. Director stated (December 2011) that the task of the SAR Wing created was to impart training to the staff on SAR operations and not to carry out rescue operations. It was, however, seen that apart from creation of a SAR training centre, K-SAFE 2010 envisaged establishment of a state level specialised SAR team besides SAR units at the metropolitan, district and taluk levels. However, the state level SAR team and SAR units at other levels had not been created (December 2011). The standard operating procedure (SOP) of the Department also did not cover SAR operation in the pre-incident plan for disaster management. The Deputy Director (Administration) stated (September 2011) that a standing order with respect to SAR was being finalised. Thus, due to non-establishment of SAR units as planned, the Department did not have the wherewithal to respond to all kinds of emergencies.

It was further seen that 28 ambulances available with the Department were neither staffed with professionally trained personnel nor equipped for medical emergency. These ambulances were provided only with stretchers and were used mainly to carry departmental staff to hospitals. During the joint inspection of 60 fire stations, it was seen that the medicines stored in the first-aid boxes of fire tenders and other utility vehicles of these fire stations were not replaced periodically and the shelf-life of the medicines stocked had also expired, rendering these useless. DGP stated (June 2011) that action had been taken to replace the expired medicines in the first-aid boxes. As the fire fighters are prone to injuries, the availability of potent medicines at all times assumes a lot of significance.

2.2.8 On-scene response

2.2.8.1 Response to fire calls

Fire reports not analysed

The details of fire incidents reported and attended to by the Department, human lives lost, property lost and property saved during 2006-11 were as shown in **Table-2.9** below:

Table-2.9 : Fire calls statistics

Year	No. of fire incidents reported and attended	Percentage of increase in fire accidents	Human lives lost	Human lives saved	Property lost	Property saved	Percentage of property lost against property saved	Percentage of lives lost to lives saved
					₹ in crore)			
2006-07	9,854	-	239	248	47	183	26	96
2007-08	10,766	9	465	412	64	223	29	113
2008-09	10,344	-	323	372	136	337	40	87
2009-10	11,638	13	557	780	140	437	32	71
2010-11	12,866	11	681	863	117	836	14	79

(Source: Information furnished by the Directorate)

Even though fire incidents reported and attended to by the Department had increased by 9 to 13 *per cent* during 2007-08 to 2010-11, the proportion of lives lost to those saved decreased from 113 *per cent* in 2007-08 to 79 *per cent* in 2010-11. Further, the proportion of property saved to property lost also showed improvement. It was, however, seen that the value of property lost and saved was based on assessments made by the fire station officers without any professional inputs. Thus, value of property lost or saved as assessed by the Department was not reliable.

To determine how effectively the resources are utilised, the Department should periodically assess its own performance. This would mean evaluating how well the Department provides each service from fire prevention to fire suppression. By identifying strengths and weaknesses in performance, the Department can determine training, equipment, and personnel needs; modify and improve its programmes and plans; reallocate resources as needed; and make informed strategic decisions about the types and levels of service it should provide. It was, however, seen that the fire reports prepared by the fire stations were not analysed by the Directorate. Thus, the Department has been losing the opportunity of evaluating its performance and identifying the shortcomings to improve upon its preparedness to deal with similar situations in future. Some of the major fire accidents where the response of the Department had been inadequate are as follows:

(i) *Carlton Towers, Bangalore*

The Department's preparedness was weak in a fire accident

In one of the major fire accidents in high-rise buildings, 9 people lost their lives and 57 others were injured at Carlton Towers, Bangalore on 23 February 2010. Though fire broke out reportedly at 3.00 PM, the fire call was received in the control room only at 4.30 PM and vehicles were deployed immediately. However, the special vehicle stationed on Bannerghatta Road for rescue from high rise buildings was summoned only at 4.45 PM as evidenced by the entries in the log book of the vehicle. The vehicle did not reach the accident spot as it

developed technical problems. Deputy Director (Administration) stated (September 2011) that a TTL unit stationed at the Hebbal fire station was deployed and it reached the spot late due to heavy traffic. Scrutiny of records, however, showed that no TTL was available at Hebbal and no fire call was recorded at Hebbal fire station for this fire incident. A departmental investigation (March 2010) into the fire accident found that the exit doors had been locked and the common passage between the staircases had been modified and blocked with additional constructions/alterations. The report, *inter alia*, recommended for (i) revamping the existing training system for skill development in specialised areas of fire and rescue (ii) procurement of more specialised vehicles suitable for high-rise structures, and (iii) upgradation of control room with state of art communication and monitoring facilities. The Department had not fully acted upon these recommendations so far (September 2011).

(ii) Mangalore Air crash

Standard operating procedure for air crash accidents not prepared

An Air India Express carrier from Dubai crashed at Mangalore on 22 May 2010 and 158 people including the crew members lost their lives. Since the accident occurred outside Mangalore's Bajpe Airport, the Department was the first responder to the air crash. Even though human lives could not be saved, the Department was successful in dousing the flames and recovering the baggages and bodies of the dead. Even one year after the crash, the Department had neither finalised a standing operating procedure for air crash accidents nor conceived specialised training for search and rescue operations in such situations. The Director stated (September 2011) that a separate training would be arranged, if needed.

2.2.8.2 Standard operating procedures

The Department had only one standard operating procedure

For successful operations at emergency incidents, the Department should develop and use standard operating guidelines for all functions and activities. Standard guidelines provide a structure for conducting operations in a systematic, organised manner, and enhance the Departments' capabilities for effective and reliable fire suppression, rescue or other emergency responses. Standard guidelines applied consistently also enhance safety for fire personnel. With such guidelines, members can coordinate and prioritise tasks on the basis of a common understanding of standard approaches and strategies, regardless of the scale of the incident.

As the Department was identified during 2004 as the 'first responder' for all emergencies, it needed to function as a multi-hazard response unit. It was seen that the Department had been following only a common standard operating procedure (SOP) for all kinds of emergencies. As the nature of response required was different for different emergencies, like fires in high-rise buildings, floods, earthquakes, landslides, air crash, *etc.*, separate SOPs were to be designed to ensure a quick and appropriate response to the type of emergency. This was, however, not done, handicapping the Department in providing the appropriate response during emergencies.

2.2.9 Manpower management

40 per cent of the posts of operating staff remained vacant

The details of men in position as of December 2011 were as shown in **Table-2.10** below:

Table-2.10: Men in position

Sl. No.	Category of staff	Sanctioned	Men-in-position	Vacancies	Percentage of vacancies
1.	Senior Officers	25	24	1	4
2.	Operating staff	6,354	3,833	2521	40
3.	Office/ clerical staff	69	45	24	35
	Total	6,448	3,902	2,546	

(Source: Information furnished by the Directorate)

Cadre-wise details of vacancies were as given in **Appendix-2.8**. While there were hundred *per cent* vacancies in 6 cadres, the vacancy position in other cadres ranged from 3 *per cent* to 72 *per cent*. While the highest number of vacancies was noticed in Mangalore region (41 *per cent*), the lowest was in Hubli region (16 *per cent*) (**Appendix-2.9**).

Thus, audit observed less than optimum manpower deployment to meet local service demands. Besides, the Department had not taken any action to recruit additional personnel required for operating three shifts in twelve fire stations, including four fire stations functioning since 1996. Further, permanent staff numbering 1,158 for 48 newly established fire stations had not been recruited though Government approval had been given in December 2009. These fire stations were being managed with deficit staff or by drawing staff on deputation basis from the other stations already facing staff deficit. The Department had sent a proposal to the Government in October 2009 for filling up 1,854 vacant posts in the four cadres of fire station officer, firemen, firemen driver and driver mechanics. Although Government approved (December 2009) the proposal, the Department had not initiated the recruitment process even 24 months after Government's approval due to non-finalisation of cadre and recruitment rules.

Besides, 35 *per cent* of the ministerial posts remained vacant as of December 2011. Deputy Director (Administration) stated (June 2011) that proposal for amending the cadre and recruitment rules had been sent to Government during May 2011 and Government's approval was awaited. The reply was not acceptable as the Department initiated the process of revising the cadre and recruitment rules only after Government approved the recruitment process in December 2009. Delay in finalising the cadre and recruitment rules delayed the recruitment process which had the potential of affecting the preparedness of the Department in responding to emergencies due to huge shortage of manpower.

SFAC norms prescribe that for each fire station, which functions as an independent unit having its own cash and store, one clerk is to be provided. However, test-check of 60 fire stations and the Directorate showed that the fire men on duty were assigned clerical work as no ministerial post had been sanctioned.

2.2.9.1 Training

Lack of trainers and facilities in the Training Academy

To support safe and effective operations in emergencies, the Department should have a well-trained workforce for efficient and effective operations to reduce the risk of injury to fire fighters. In order to meet the in-house training needs of the Department and spreading awareness about the fire fighting and fire fighting techniques, a training institute had been established in Bangalore during 1970 which was later upgraded to an Academy headed by a Commandant of the rank of CFO.

It was seen that 17 *per cent* of the posts of Fire Station Officers (Training) and 53 *per cent* of posts of fire men remained vacant in the Academy as of December 2011. The Academy trained in-service personnel as well as general public on fire fighting, fire prevention and rescue operations. Although several officers belonging to different cadres, including four CFOs who were trained abroad, had undergone special training on a variety of subjects, the services of these officers were not utilised for training the other in-service personnel. The Academy lacked basic infrastructure facilities like library, vehicles, equipment *etc.* There was no system of obtaining feedback from those receiving training to gauge the effectiveness of the training imparted. Although modernisation of the Academy had been approved under K-SAFE 2010, it had not been taken up (December 2011).

The Commandant, Training Academy stated (April 2011) that the procedure of obtaining feedback was implemented immediately as per the audit observations and it would be continued in future also. Deputy Director (Administration) accepted (September 2011) the lack of training staff and facilities in the Academy. It was further stated that a draft modernisation plan was being prepared to modernise the Academy.

2.2.9.2 Protective clothing and equipment to fire fighters

Protective clothing not given to firemen

Given the adverse environmental conditions that fire fighters face, the Department should provide each member with the protective clothing and equipment necessary to shield them from health hazards likely to be encountered during emergency operations. Protective clothing and equipment, such as thermal coats and trousers, gloves, goggles, boots, and self-contained breathing apparatus, reduce the occurrence of heat stress, burns, abrasions and punctures, and exposure to blood-borne pathogens. SFAC norms and the Perspective Plan also envisaged supply of these to the firemen.

It was, however, seen that the Department had provided only uniforms, gumboots and helmets for emergency operations. No protective clothing and equipment had been supplied to the firemen.

2.2.9.3 Lack of staff quarters and dormitory facility

48 per cent of staff lacked facility of staff quarters

The SFAC norms prescribe allotment of quarters to all the fire personnel in the premises of fire stations to ensure their availability at all times. It was seen that while 1,121 quarters had been allotted to staff across the State, another 906 were under construction as of December 2011. This is only 52 *per cent* of

the requirement. Similarly, SFAC norms prescribe provision of dormitory in fire stations. It was, however, seen that dormitory facilities were available only in two⁷ out of 60 fire stations test-checked. Even in the new fire stations constructed under K-SAFE 2010, dormitory facilities had not been provided.

2.2.10 Communication

Weak communication system

The Department has to necessarily rely heavily on good communication to do its work. Communications hardware and protocols, and fire fighters' familiarity with them, are the underpinnings of successful emergency management. Without a well-functioning communications system, the Department cannot work effectively with fire companies on the scene, track the fire fighters' whereabouts *etc.*

The Department used both landlines and wireless for communication within and outside. The existing communication network consisted mainly of VHF conventional wireless equipment which operated on two frequencies. It had a limited range of 12 kms and required installation of repeater facilities. It was seen that the Department had established repeater facilities only in 12 districts⁸. Although wireless sets had been supplied to the remaining 18 districts, the network was not accessible due to the limited range. Further, the Department had not replaced 321 obsolete wireless sets. Against 11 posts sanctioned for the communication wing established at Bangalore, only one personnel (Police Inspector, Wireless) was working as of December 2011. Thus, lack of repeater facilities in all the districts and huge shortage of manpower in the communication wing had the potential of making communication during emergencies ineffective.

2.2.11 Modernisation

Department did not undertake modernisation

The Perspective Plan scripted a modernisation plan for the Department which included full computerisation of the Department with intranet facilities, creation of an Intelligence Management Information System, installation and training on Geographical Information System/ Global Positioning system, *etc.* Even five years after the commencement of K-SAFE 2010, no progress had been made in this regard. As the ultimate goal of modernisation was to improve operational efficiency, lack of initiative for modernisation resulted in non-rectification of the shortcomings highlighted by the Perspective Plan and consequent non-improvement of the operational efficiency of the Department.

2.2.12 Public awareness of fire safety

2.2.12.1 Mock drills

Limited fire-safety education

To develop public awareness of fire risks, help prevent fires, and control the severity of fires and possible injuries, fire-safety education programmes are necessary. SFAC norms also prescribe conduct of mock drills at regular intervals by the fire stations. Through a typical public education programme,

⁷ Electronic City- Bangalore and Hebbal-Mysore Fire Station

⁸ Bangalore (Urban), Bangalore (Rural), Belgaum, Bellary, Chickmagalur, Davanagere, Gulbarga, Hubli, Mangalore, Mysore, Raichur and Shimoga

citizens learn about specific hazards, the need for exit drills and fire escape plans. Although certain basic information is useful in all communities, it is important that the Fire Department identifies the most important local fire risks in its service area and tailor its public education programme accordingly.

The target and achievements of mock drills conducted across the State during 2006-11 were as shown in **Table-2.11** below:

Table-2.11: Mock drills conducted in the State

(Figures in number)

Year	Target	Achievement
2006-07	Minimum of 150	186
2007-08	Minimum of 200	295
2008-09	Minimum of 500	609
2009-10	Minimum of 700	776
2010-11	Minimum of 1000	1,275

Deputy Director (Administration) stated (September 2011) that mock drills had been conducted in schools, colleges, NCC camps, lion clubs, villages, Government officers, apartments, *etc.* It was further stated that 5,370 lectures were organised during 2006-11 to educate the public. It was, however, seen in 60 test-checked fire stations that 64 per cent of the mock drills had been conducted in schools during 2006-11 as shown in **Table-2.12** below:

Table-2.12 : Mock drills statistics

Year	Total mock drills	Mock drills in Schools			
		Schools	Industries	Offices	Public
2006-07	16	8	3	3	2
2007-08	81	37	15	26	3
2008-09	290	196	18	44	32
2009-10	424	271	25	71	57
2010-11	739	476	39	133	91
Total	1,550	988	100	277	185

(Source: Information furnished by the Directorate)

The mock drills in industries, offices and public accounted for only 36 per cent of the total mock drills. Further, the proportion of the mock drills conducted during 2008-11 by the 60 test-checked fire stations ranged between 48 to 58 per cent of the total mock drills. Considering that the State had 176 fire stations, the contribution of the remaining 116 fire stations was evidently limited. Further, as industries had been ranked high in the risk assessment, the Department's priority of conducting a majority of the mock drills in schools was flawed as industries, offices and general public did not receive the same attention. It was further seen that 12 out of 37 rural fire stations had not conducted mock drills in the last five years.

The benefits of fire-safety education lie in the potential to prevent fires. Besides avoiding the direct costs of fire suppression, prevention efforts help avoid the personal losses and tragedies resulting from fires. In addition, the indirect costs of fires, such as reduced property values, lost business income,

unemployment, the destruction of natural habitat, represent a substantial savings when fires are prevented. However, the Department's role in fire-safety education was limited.

2.2.13 Enforcement of fire code

Lack of legal framework to enforce fire safety

The Karnataka Fire Services Act, 1964 (Act) provides the legal framework for enforcement of fire code. The Perspective Plan highlighted that the provisions in the Act did not reflect the Department's roles and responsibilities and recommended for including the following provisions which did not exist in the Act:

- Penalty provisions for wilful contravention of the Act
- Provisions for revision of penalty from time to time
- Clear provisions specifying that buildings above 15 metres in height were to obtain a No Objection Certificate (NOC) from the Department
- Provisions relating to citizens' right to appeal against notices issued by the Department
- Provisions relating to powers to seal buildings/premises posing a threat to property or life

A proposal for amendment of the Act on these lines was under consideration of the Government (December 2011). Director stated (January 2012) that Government had directed the Department to modify the sections relating to the penal provisions and punishments for violations. It was further stated that redrafting was in the final stages and the modified details would be resubmitted to Government by January 2012.

The primary benefit of fire code enforcement and building-plan reviews lies in the potential to prevent fires. The National Building Code requires all the buildings classified as high rise to obtain fire safety clearance by way of NOC from the Fire Department. It was seen that there was no mechanism in the Department to ensure that bodies/authorities empowered to sanction building plans sanctioned these only after obtaining NOC from the Department, wherever necessary. There were no inter-departmental linkages to ensure consultation with or participation of the Department in the plan sanction processes or issue of occupancy certificates for buildings.

Further, there was no uniformity in the regulations followed by the bodies/authorities for sanction of building plans. For instance, while the building regulations of Bruhat Bangalore Mahanagara Palike (BBMP) recognised all buildings above 15 metres height as high-rise buildings, those of Bangalore Development Authority (BDA) considered buildings of height 24 metres and above as high rise buildings. The Act did not contain provisions for obtaining NOC from the Department and periodical inspections for high-rise buildings. The Department processed only those applications for NOC which had been received, without being aware of the number of high-rise buildings in the State. During 2006-11, the Department had issued 1063 NOC for buildings constructed across the State. It was seen in Bangalore that out of 368 building plans sanctioned by BDA during 2006-11, the height of the 58 buildings was between 15 and 24 metres. These 58 buildings did not

obtain NOC from the Department as the regulations of BDA exempted these buildings from obtaining NOC.

It was further seen that as a result of insufficient legal framework for enforcement of fire code, even the following prominent buildings had not obtained NOC from the Department.

- Vikasa Soudha- Karnataka Government Secretariat
- City Centre Mangalore
- Central jail, Parappana Agrahara
- Sagar Hospital, Jayanagar, Bangalore
- Mother Dairy, Bangalore.
- Pai Vista Hotels, Mysore
- Rajeev Education Trust, Mysore and
- KPTCL Building, Hassan

The Government issued (July 2011) a notification mandating the BBMP or local Municipal Authority to obtain NOC from the Department before sanctioning building plans/licenses. Additional safeguards like grant of occupancy certificate only on the basis of a certificate issued by the Department, periodical renewal of fire safety certificates, surprise inspection of high rise buildings at least once in two years, disconnection of electricity in cases of non-compliance with the measures prescribed by the Department for fire safety *etc.*, were also envisaged in the notification. The Director stated (January 2012) that the teams created for inspection of buildings had already started their work and their inspection reports were being scrutinised for initiating further action.

2.2.13.1 Enforcement of fire safety measures in schools.

**Schools
disregarded
Supreme Court's
directive on fire
safety**

The Hon'ble Supreme Court had directed (April 2009) the State Governments and Union Territories to grant recognition or affiliation to schools only after ensuring, *inter alia*, that the schools complied with the safety norms prescribed in the National Building Code, installed fire extinguishers within six months and imparted training to the staff in extinguishing fire.

It was seen that against 58,295 lower and higher primary schools and 12,453 high schools in the State, only 95 schools across the State had approached the Department for NOC as of December 2011. Of these, while applications of three schools had been rejected, 18 cases were pending. The Director stated (July 2011) that the response of the Education Department was very poor. The reply was not acceptable as, though it was the responsibility of Education Department to comply with the Supreme Court direction, the Department was also equally responsible for enforcing the implementation of the directive. In case of poor response from the Education Department, the Department should have taken up the matter with higher authorities.

2.2.14 Monitoring

Deficient monitoring

The Department's monitoring of various activities was weak. Although the Memorandum of Understanding with KSPHC permitted the Department to request for third party inspection and joint inspection of the works executed by KSPHC, the Department did not conduct any inspection to ensure quality. As per the standing order (May 2008) of the Department, the supervisory officers were to inspect the offices and report the findings with respect to discipline in personnel, condition of vehicles, infrastructure and equipment usage, requirement of equipment, administrative issues, *etc.* However, no such inspections had been carried out. Thus, the Department lacked necessary inputs to identify deficiencies in performance and take necessary rectificatory measures.

2.2.15 Conclusion

Non-establishment of the requisite number of fire stations, non-procurement of vehicles/equipment as per the Perspective Plan, shortage of manpower and inefficient communication system had the potential of adversely affecting the preparedness of the Department in dealing with emergencies and undermining Department's mandate of protecting citizens' life and property against the dangers of fire and other emergencies. The inadequate legal framework also hampered the efforts of the Department in enforcing fire safety.

2.2.16 Recommendations

- The Department needs to increase its capabilities particularly in the areas of infrastructure to the levels envisaged in K-SAFE 2010 for effective fire suppression, rescue and other emergency responses.
- The Department should periodically assess its performance so as to be in a position to determine training, equipment and personnel needs, modify and improve the programmes and make informed strategic decisions about the level and type of service it should provide.

The matter was referred to Government in August 2011; reply had not been received (December 2011).

KANNADA AND CULTURE DEPARTMENT

2.3 Preservation and conservation of heritage in Karnataka

Executive Summary

The protection and conservation of heritage monuments in the State other than those under the control of Archaeological Survey of India vest with the Commissioner of Archaeology, Museums and Heritage, Bangalore and Director of Archaeology and Museums, Mysore.

There was no coordinated strategic approach to heritage management, resulting in ad hoc approach to decision making, resource allocation and conservation practice. The Commissioner/Director did not focus on identification and inventorisation of the heritage monuments and consequently, a large number of ancient monuments remained unidentified in the State.

Resource allocation by the Government for heritage conservation during 2006-10 was very meagre and was not based on need analysis. There was also no funding base for cyclical maintenance of heritage monuments. Twenty three technical posts (40 per cent) remained vacant in the Directorate for periods ranging from one to 21 years. Most of the technical staff responsible for heritage conservation lacked heritage management competencies and had also not been trained.

Land adjoining the monuments had not been declared as protected despite orders issued by Government in March 1998. Only 31 out of 763 protected monuments had protective fencing. Watch and ward engaged for the monuments was also very meagre. Nineteen out of 47 monuments jointly inspected had either been encroached upon or had buildings constructed adjacent to them. Annual maintenance of the monuments had not been undertaken and the Commissioner/Director failed to project the requirement of funds to Government for maintenance.

The action plans for conservation were ad hoc and not based on an assessment of relative significance of the monuments. There was no prioritisation of the meagre resources allocated for conservation which was also taken up in bits and pieces without a holistic approach. There was also no effort to present the heritage monuments to public and most of the monuments jointly inspected did not even have a sign board or a display board. Monitoring of the heritage monuments was very limited and no targets had been fixed for their periodical inspection.

2.3.1 Introduction

Karnataka has a rich and varied heritage. Various ruling dynasties have left behind their indelible impression on the cultural legacy of this State and several monuments in the State stand testimony to this rich heritage. The State has the second highest number of protected monuments in the country (518 protected by the Archaeological Survey of India (ASI) and another 763 by the State Government). The protection and preservation of this invaluable heritage is, therefore, of utmost importance. The Directorate of Archaeology and Museums, Mysore and the Commissionerate of Archaeology, Museums and Heritage, Bangalore, established during 1885 and 2005 respectively, are entrusted with the responsibility of protecting and preserving 763 monuments under the control of the State Government. In addition, the Directorate maintains 14 museums and one art gallery.

2.3.2 Organisational set-up

The protection and conservation of heritage in the State is under the overall control of Secretary, Kannada, Culture and Information Department (Secretary) who is assisted by Commissioner of Archaeology, Museums and Heritage, Bangalore (Commissioner) and Director of Archaeology and Museums, Mysore (Director). While the Commissioner is assisted by a Deputy Director (DD) at Mysore, the Director is assisted by four DDs of four divisions at Bangalore, Belgaum, Gulbarga and Mysore. DDs are assisted by Archaeological Conservation Engineers (ACEs), Archaeological Conservation Assistants (ACAs) and Archaeological Assistants (AAs) in preservation and conservation of heritage monuments and by Assistant Directors and Curators in maintenance of 14 museums and one art gallery.

2.3.3 Audit Objectives

Audit was taken up with the objectives of ascertaining as to whether:

- the institutional mechanism and the current practices were designed to discover, inventorise and preserve heritage monuments in all their manifestations;
- sufficient financial resource was provided in the State Budget and financial discipline maintained while preserving and conserving heritage assets; and
- the actual performance and impact of the legal, financial and human resources employed in pursuit of preservation and development of heritage monuments had yielded the desired results.

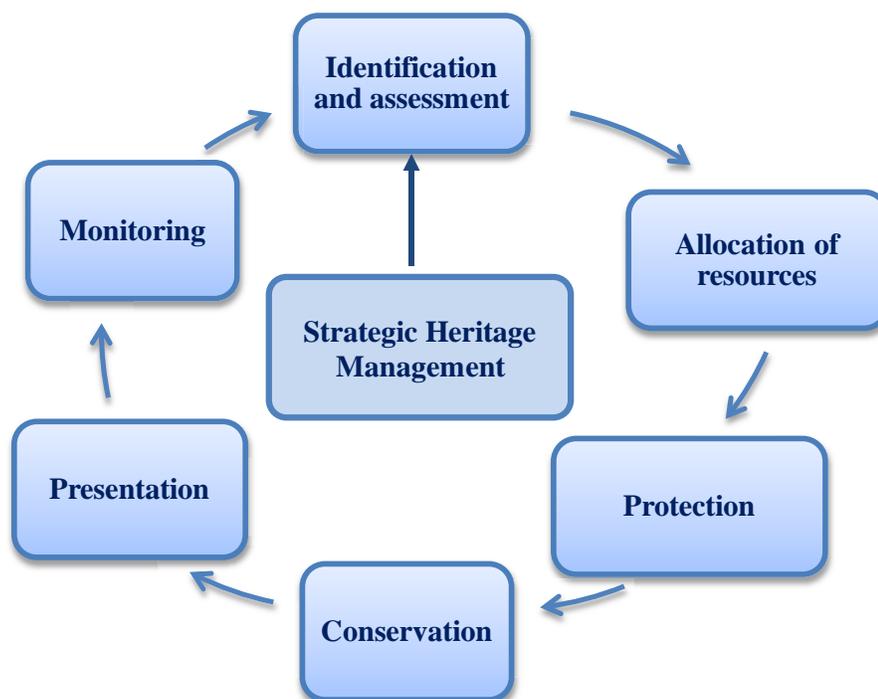
2.3.4 Audit Scope and Methodology

The Performance Audit started with an entry conference held on 14 March 2011 with the Secretary, Kannada, Culture and Information Department in which audit scope and methodology were explained. The audit was conducted during March to June 2011 covering the period 2006-07 to 2010-11 through a test check of records of the Commissioner, Director, four DDs and eight out of

14 museums and one art gallery. Audit was confined to scrutiny of records relating to protection and conservation of heritage monuments under the control of only the State Government. A joint inspection of 47 out of 127 monuments conserved by the Director was conducted by audit during March to May 2011 with the representatives nominated by the Director. The Report takes into account the replies furnished by the Government/Commissioner/Director in response to the audit observations communicated to them and the joint inspection notes confirmed by the nominated representatives. The audit findings were discussed with the Secretary in the exit conference held on 23 September 2011.

2.3.5 Audit Findings

The key processes involved in protection and conservation of heritage monuments and the results of audit of these processes in the Commissionerate /Directorate are discussed below:



2.3.6 Strategic Heritage Management

Strategic Heritage Management (HM) requires that systems and processes drive the organisation towards the strategic goals. An overall strategy incorporating planning, budget setting capability to focus on priorities, standard operating procedures like cyclical and catch-up maintenance plans, opportunities to share information and resources to further strategic management goals *etc.*, must be visible at all levels of management and across all functional areas. It was, however, seen that there was no coordinated

strategic approach to cultural HM, resulting in ad hoc approach to decision making, resource allocation and conservation practice. The Commissionerate/Directorate lacked the resources or support to implement standard HM methodologies across the land it managed.

2.3.7 Identification and assessment

Identification and inventorisation of heritage monuments not undertaken

Identification and assessment cover the processes used to identify heritage places, create inventories and assess comparative significance. It includes research, recording, investigation and assessment. Inventory is always a key management tool in the area of identification and assessment. Key heritage sites are to be identified either by a thematic analysis or by a survey of land for key places. Each designated land area is to be analysed for relevant themes and the identified heritage places ranked within that theme. Thus, the aim of an identification and assessment process is to not only identify places, but also establish a hierarchy of significant places under a thematic system.

Although the Department had identified 763 monuments as of March 2011 and declared these to be protected, a large number of ancient monuments remained unidentified in the State. Government approved (October 2003) the proposal of the Director to identify such monuments and prepare an inventory of monuments. Although Government released ₹ 10 lakh for this purpose during March 2004, the Director did not undertake this work. Even in respect of 763 already identified monuments, the Commissionerate/Directorate did not maintain a proper inventory of heritage monuments incorporating details such as location of site, description of site, theme represented by the site, assessment of the significance of the site, management recommendation *viz.*, benign neglect, restoration, stabilisation *etc.*, and the conservation works undertaken from time to time. Thus, the Commissionerate/Directorate did not focus on identification and inventorisation of the heritage monuments either on the basis of geographic areas or themes and a potential threat, therefore, existed to unrecorded sites. In the absence of any assessment criteria or process, distribution of resources for preservation and conservation of heritage monuments was not based on comparative merits and was not guided by relative significance of the assets in both a thematic and individual context (as discussed in paragraphs 2.3.8.1 & 2.3.10.2). Government stated (December 2011) that while documentation of protected monuments had been completed in Bangalore, Belgaum and Mysore Divisions, monuments in Gulbarga Division would be completed in six months. It was further stated that necessary action would be taken to survey and collect information about unprotected monuments within six months.

2.3.8 Allocation of resources

Allocating resources covers the ways in which financial, human and other resources are obtained and allocated to the HM structure within the organisation and allocation of resources to specific heritage monuments.

2.3.8.1 Financial resources

Allocation of funds for heritage conservation was not need based

The financial resources provided to the Commissioner and Director during 2006-11 consisted of funds from the annual budget and grants received from the Twelfth Finance Commission (TFC). The financial resources of the Directorate and Commissionerate during 2006-11 were as shown in **Table-2.13** below:

Table-2.13: Financial resources provided to the Directorate and Commissionerate during 2006-11

Directorate

(₹ in lakh)

Year	Plan				Non-plan			
	Budget provision	Expendi-ture	TFC grant	Expendi-ture	Budget provision	Expendi-ture	TFC grant	Expendi-ture
2006-07	98.51	97.17	-	-	439.90	426.89	452.71	452.71
2007-08	106.21	106.20	-	-	525.39	524.59	391.04	381.75
2008-09	92.14	91.90	522.46	522.46	569.54	557.04	276.00	259.20
2009-10	883.13	881.64	607.79	558.20	519.81	520.87	-	-
2010-11	1,690.10	1,691.51	-	-	585.80	586.38	-	-

Commissionerate

(₹ in lakh)

Year	Plan			
	Budget provision	Expenditure	TFC grant	Expenditure
2006-07	35.00	33.64	125.00	125.00
2007-08	41.61	41.54	125.00	125.00
2008-09	46.25	44.26	121.80	121.80
2009-10	46.65	42.41	58.20	33.14
2010-11	596.97	493.25	-	-

(Source: Information furnished by the Commissioner/Directorate)

The plan resources provided by the State Government from its annual budget during 2006-09 to the Director and during 2006-10 to the Commissioner were very meagre. Bulk of the resources during this period was in the form of grants from the TFC. The budget estimates prepared by the Director and the Commissioner did not project requirement of funds for catch up maintenance or cyclical maintenance and consequently, there was no funding base for cyclical maintenance of heritage monuments. This was indicative of skewed preparation of budget estimates and the resultant risk of the heritage monuments deteriorating due to non-maintenance.

It was also seen that the Commissioner and the Director did not prepare budget estimates for plan resources. The Department of Planning, Programme Monitoring and Statistics intimated plan resources earmarked for preservation and conservation of heritage monuments to the Commissioner and Director before the commencement of the financial year. These earmarked provisions were included by Government in the annual budget. At the beginning of each financial year, the Commissioner and Director prepared action plan for spending these plan resources and got it approved by Government. Thus, allocation of funds by Government for heritage conservation was not need based and the Director and Commissioner did not assess the requirement of funds for conservation works and project these in the annual budget estimates. Government stated (December 2011) that budget requirements of the Department would be taken into consideration in future and funds would be earmarked for annual maintenance of monuments.

2.3.8.2 Human resources

The Commissionerate's contribution to heritage management was very limited

While the Directorate with four divisional offices *viz.*, Bangalore, Belgaum, Gulbarga and Mysore, each headed by a DD, had been in existence over the years, Government established⁹ the Commissionerate in February 2004 with one technical post and nine non-technical posts and entrusted protection and conservation of heritage monuments at six places *viz.*, Bidar, Bijapur, Gulbarga, Kittur, Mysore and Srirangapatna besides the following responsibilities:

- Identifying heritage buildings and areas on the basis of their historical, architectural, environmental and ecological values and grading them
- Proposing legal provisions for heritage conservation
- Printing publications on heritage towns, arranging exhibitions, bringing out manual on heritage conservation, arranging cultural programmes and producing documentary films
- Creating heritage fund in association with UNESCO, Government of India, State Government and other private bodies
- Preparation of maps of the heritage areas through Geographical Information System, remote sensing and survey
- Promoting tourism and creating a website
- Producing documentary films and arranging cultural programmes, and
- Policy and important issues concerning the Directorate

The Commissionerate functioned without a full time DD since 2009 as the DD of State Archives Department at Mysore was only holding additional charge of the post of DD. The post of ACE which was essential for undertaking protective and conservation works was filled up only during October 2008. Only one ACA, who was a civil engineer drawn on deputation from the Public Works Department (PWD) with no HM competency, had been working in the Commissionerate. Consequently, the conservation works of the Commissionerate had been executed only by the Directorate till 2008-09 although payments for these works were debited to the budget of the Commissionerate. As a result, the Commissionerate's contribution to HM was limited to mere identification of 449 heritage buildings in the State without any concrete follow up action for protection, creation of 168 heritage clubs for publicity campaign and printing of pamphlets, brochures, heritage series books *etc.*

Out of 449 heritage buildings, 139 had been identified only in Mysore. These heritage structures faced threat due to rapid urbanisation. However, the State had not amended the Town and Country Planning Act (TCPA) to restrict new constructions in the vicinity of heritage structures. It was further seen that Commissioner sent a proposal to Government in this regard only during November 2010 and it had not been acted upon (June 2011). Government stated (December 2011) that amendment to TCPA was under consideration. Thus, in the absence of a legislative framework to regulate new constructions around heritage structure, identification of 449 heritage buildings by the

⁹ Commissionerate became functional in September 2005

Commissioner did not serve the objective of protection of these heritage structures.

2.3.8.3 Huge shortage of technical staff in the Directorate

Huge vacancies in technical posts not filled up

As of March 2011, against the sanctioned strength of 214 staff members (Technical 57; Non-technical 157), only 149 (Technical 34; Non-technical 115) were in position. Vacancies in technical posts were as shown in **Appendix-2.10**. While the Director made good the vacancies in non-technical posts by outsourcing, vacancies in technical posts such as Additional Director, Assistant Director, Archaeological Assistant, Registering Officer, Archaeological Conservation Assistant, Curator, Assistant Curator, and Surveyor remained unfilled for periods ranging from one to 21 years. Admitting that the Department was facing shortage of staff, Government stated (December 2011) that the posts of Archaeological Assistant, Epigraphist and Surveyor would be filled up shortly. Thus, non-availability of staff with the requisite technical expertise over an extended period of time resulted in the Directorate drifting away from discharging its mandated functions.

As of March 2011, the proportion of HM technical staff to heritage monuments was also dissimilar in the four divisions of the Directorate as shown in **Table-2.14** below:

Table-2.14 : Proportion of HM technical staff to heritage monuments

Sl No	Name of the division ¹⁰	Jurisdictional area (in sq kms)	Number of protected monuments	Available technical manpower
1	Bangalore	49,954	92	1 ACE and 2 ACAs
2	Belgaum	54,514	359	1 ACE and 1 ACA
3	Gulbarga	44,138	196	1 ACE and 1 ACA
4	Mysore	43,473	116	1 ACE and 2 ACAs

(Source: Information furnished by the Directorate)

Besides, regular analysis of heritage monuments is a pre-requisite to ensure that each monument is managed by the organisation with the best expertise and resources. This would require that technical staff with necessary HM competencies were recruited to take care of protection and conservation of heritage monuments. It was seen that out of four ACEs, only two at Mysore and Belgaum had HM competencies and the other two were civil engineers drawn on deputation from the PWD. The ACAs had also no HM competencies and they had also been drawn on deputation from PWD.

Training in core HM competencies including HM principles and specific standard operating procedures are to be integrated into organisation-wide training programmes as integrated training provides for consistency of treatment of places and raises awareness of HM issues. It was seen that except the two ACEs having HM competencies, others had not been trained in HM

¹⁰ Bangalore Division includes Bangalore Urban / Rural, Chitradurga, Davanagere, Kolar, Shimoga and Tumkur districts
Belgaum Division includes Bagalkot, Belgaum, Bijapur, Dharwad, Gadag, Haveri, Uttara Kannada districts
Gulbarga Division includes Bellary, Bidar, Gulbarga, Koppal, Raichur districts
Mysore Division includes Chamarajanagar, Chickmagalur, Dakshina Kannada, Hassan, Kodagu, Mandya, Mysore, Udupi districts

competencies. As well meaning, but undertrained staff making significant decisions are a potential threat to cultural heritage resources, the threat is to be factored in the organisation's risk management. Training of staff in core HM competencies, therefore, assumes a lot of significance.

2.3.8.4 A Deputy Director in a museum without work

Sub-optimal utilisation of manpower

Government prescribed (June 2005) that while DDs were to be assigned the work of protection, conservation and monitoring of unprotected and protected monuments, Assistant Director/Curator/Assistant Curators posted to museums were responsible for maintenance and overall supervision. Although a DD had no role to play in the routine/day-to-day functioning of museums, Government, nevertheless, posted (December 2006) a DD, in contravention of its earlier order of June 2005, to the museum at Mangalore citing administrative reasons.

It was noticed that the DD remained idle since the date of his reporting for duty. Even the routine correspondences were not routed through the DD and the Curator/Assistant Curator were managing the affairs of the museum. As the DD had not been assigned any work, he remained idle till March 2011 and his pay and allowances aggregating ₹ 18.74 lakh proved wasteful. Government stated (December 2011) that the DD was usually invited to attend all meetings convened by the Directorate and he was also entrusted with inspection of monuments and submission of reports. The reply was not acceptable as the DD had not attended the departmental meetings, though invited. Nothing was on record regarding inspection of monuments and submission of reports by the DD. It was further seen that while one out of four posts of DD remained vacant in the Directorate since December 2006, the DD at Mangalore was allowed to remain idle. This was indicative of skewed manpower management, resulting in sub-optimal utilisation of the scarce manpower resources available.

2.3.9 Protection

The following legal and regulatory instruments empower the Commissionerate/Directorate to declare, conserve and protect the monuments/treasure.

- The Karnataka Ancient and Historical Monuments and Archaeological Sites and Remains Act 1961 (Act) and the Karnataka Ancient and Historical Monuments and Archaeological Sites and Remains Rules 1965 (Rules).

2.3.9.1 Agreements with private owners not entered into

The Department did not enter into agreements with private owners

Out of 763 protected monuments, the ownership of 758 monuments rested with the Government and the remaining with five private parties. The Act stipulates that Government shall propose to the owner of a protected monument (in case of private ownership) to enter into an agreement which shall cover the maintenance/custody of the monument, restrictions of the owner's right *etc.* Of these five monuments under the private ownership,

agreements had not been entered into with the private owners in respect of four monuments¹¹ and the process was only partially completed in respect of the remaining monument¹². In the absence of agreements, the Government did not have any legal instrument to enforce restrictions on the private owners. Government stated (December 2011) that the Department would enter into agreements with the private owners of monuments.

2.3.9.2 Identified monuments not declared as protected

Monuments not declared as protected despite taking up conservation works

The Directorate undertook conservation of 56 unprotected monuments during the period 2006-11. As these monuments had already come to the notice of the Director, action should have been taken to declare these as protected through a Gazette Notification. However, no action had been taken in this regard. Government stated (December 2011) that some of the proposals to declare the monuments as protected were under consideration. It was further stated that the Department was also being instructed to send proposals for the remaining monuments. The reply was indicative of lack of initiative to declare these monuments as protected even after spending the scarce resources on their conservation.

2.3.9.3 Land adjoining the monuments not declared as protected

Government's decision to declare the land adjoining the monuments as protected not acted upon

Sections 11 and 12 of the Rules confer powers on the Government to declare a prohibited or regulated area after duly issuing the notice of intention to declare the same. In exercise of these powers, Government declared (March 1998) the first 100 metres of land adjoining the monuments as prohibited and the next 200 metres of land as protected areas. However, no action had been taken to enforce these provisions till November 2003 when it was decided in a meeting under the Chairmanship of the Minister of Kannada and Culture to fix the prohibited and protected areas of each monument depending on its importance, instead of fixing the area uniformly for all the monuments. The Director was to seek advice from experts and prepare necessary guidelines and the work was to be completed within six months. It was, however, seen that the decision had not been acted upon. Government stated (December 2011) that a policy decision would be taken in consultation with experts in regard to monuments in the world heritage sites and towns/cities. As land adjacent to the monuments is needed for their preservation, non-declaration of the adjoining land as protected was fraught with the risk of structures coming up very close to these monuments in an uncontrolled manner, posing threats to the monuments.

2.3.9.4 Poor watch and ward for monuments

Watch and ward arrangements were grossly insufficient

As of March 2011, the Director had appointed only 27 Monument Attendants/Chowkidars and 13 security staff towards watch and ward of 763 protected monuments in the State, while ASI had engaged 280 Monument Attendants and 172 security staff in respect of 518 protected monuments under

¹¹ Raja Madakarainayaka Samadhi at Mayakonda, Ramathirtha Palace at Jamakhandi, Sangameshwara Temple at Indi and Suralu Mud Palace at Udupi

¹² Diwan Purnaiah Jahgir Bungalow at Yelandur

their control in the State. Further, protective fencing had been provided for only 31 out of 763 protected monuments. Government stated (December 2011) that staff strength for watch and ward would be increased with the sanction of Finance Department. It was further stated that fencing would be provided after fixing the boundaries of the monuments.

Though budget and other priorities would determine the extent of engagement of manpower for protection and maintenance, the manpower actually deployed for protection and maintenance was grossly insufficient, facilitating encroachment of the monuments in the absence of fencing as discussed below:

2.3.9.5 Encroachments/structures adjacent to monuments

Encroachment of monuments

It was seen during joint inspection that out of 47 monuments, 14 (30 per cent) had been encroached upon while another five (11 per cent) had buildings constructed adjacent to them. Some photographs of monuments taken during the joint inspection are shown below:



Jain Basadi, Chikmagadi, Shikaripur taluk, Shimoga district with a huge community water tank in front of the monument



Rameshwara Temple Chittur, Soraba taluk, Shimoga district with an Anganawadi Centre in front of the monument



Shivappanayaka Palace, Shimoga – Two forest quarters situated within the boundary of the palace



Buildings situated inside the Ranganatha Temple Complex, Anegundi, Gangavathi taluk, Koppal district

Government stated (December 2011) that encroachments at Hampi and Srirangapatna had been removed. However, a large number of monuments remained encroached upon.

2.3.9.6 Local level committees not constituted

Committees for protection and maintenance of monuments non-functional

Government approved (April 1997) formation of committees headed by the local Tahsildar and consisting of a Mandal Panchayat member, Village Accountant and other members for protection and maintenance of conserved monuments under their jurisdiction. However, no such committees had been constituted. Government stated (December 2011) that local level committees would be formed shortly. In the absence of these committees, the protection and maintenance of conserved monuments continued to suffer.

2.3.10 Conservation

Conservation is the safeguarding of a cultural resource, retaining its heritage values and extending its physical life. It includes all works undertaken to remedy and mitigate deterioration in the condition of cultural resources, including restoration or adaptation.

2.3.10.1 Heritage conservation management plan not in place

The Department did not prepare conservation management plan

Places identified as being of sufficient cultural heritage significance are to have vision statement prepared for them, outlining sustainable future management and anticipated use(s). These may include appropriate commercial activities, stabilisation, benign neglect, adaptive reuse *etc.* The purpose of the vision statement is to make some fundamental management decisions based on, say, a five year time span. These decisions would include the brief for a management plan, a budget estimate, future funding sources, the future use of the place and the desirability (and the possible form) of presentation of the place. It was, however, noticed that no conservation management plan had been prepared. Government stated (December 2011) that heritage management plan would be prepared keeping in view a five year time span. Thus, the Directorate and the Commissionerate lacked conservation management plan to ensure sustained management of heritage monuments.

2.3.10.2 Conservation of monuments taken up on ad hoc basis

No holistic approach to conservation of monuments

As many historic monuments were to be managed by the Commissioner and the Director with very limited financial resources provided by Government on an ad hoc basis, prudent financial management required prioritisation of the resource allocation after making choices about which monuments were more significant than others. Though the Department was established during 1885, it had not prepared any guidelines/norms for prioritising the conservation works. As a result, there was no prioritisation of the meagre resources allocated and the action plans drawn up by the Commissioner/Director had not been based on an assessment of relative significance of the monuments but were firmed up largely on the basis of representations received from the local public and elected representatives and to a limited extent, on the proposals sent by the ACEs. As the action plans were ad hoc in nature, the Director and Commissioner undertook protection and conservation works for more number of unprotected monuments although many protected monuments suffered due

to lack of funds as noticed by audit during joint inspection. While the number of conservation works undertaken by the Director for unprotected monuments during 2006-11 was 56 (44 *per cent*) out of 127, the number of unprotected monuments conserved by the Commissioner during the same period was 17 (46 *per cent*) out of 37. Further, there was no holistic approach as the conservation of a monument was taken up in bits and pieces and as a result, the Director failed to dovetail all works relating to a monument into an integrated programme to restore it to its original glory. Out of 47 monuments jointly inspected, 10 (21 *per cent*) monuments taken up for conservation had been only partially conserved and restoration of these monuments had not been completed. Government stated (December 2011) that conservation of the monuments would be undertaken with a holistic approach on a priority basis. It was also stated that a proper strategy would be devised for conservation and development of monuments.

Some of the conservation works taken up partially in bits and pieces which did not help in restoration of the monuments to their original shape are discussed below:

- ***Partial conservation of Suralu Mud Palace***

Suralu mud palace in bad condition

Suralu mud palace is an ancient palace situated in the coastal belt of Udupi district. The palace had been built during the seventeenth century by the Jain king, Tolahar. The palace has a living Jain Basadi in its premises. The palace was declared as a protected monument during 1993. Thereafter, the Department had taken up conservation of the palace in various phases and spent ₹ 68.48 lakh (March 2011). Scrutiny showed that ACE, Mysore had reported (March-2005) to the Director that the partially conserved mud palace was in bad condition and the expenditure incurred would be wasteful if further conservation works were not taken up. Although an estimate for further conservation had been prepared during 2006-07 for ₹ 42.75 lakh, the work was not taken up. It was noticed during joint inspection (April 2011) that the palace was in a bad shape as shown below:



Portions of roof and a wall inside the palace had collapsed and some of the wooden planks had bent on account of usage of heavy weight bricks during conservation. Government stated (December 2011) that further conservation

works, for which technical approval had been given would be taken up out of ₹ 160 lakh earmarked under XIII Finance Commission Grants.

- ***Partial conservation of Sandur Fort***

Sandur fort in advanced stage of decay

The Department had undertaken partial conservation work of the Sandur Fort during 2008-11 and incurred an expenditure of ₹ 31.34 lakh.



It was seen during joint inspection (April 2011) that the fort was in ruins and had been encroached upon fully, as a village (Krishnanagar) had been located within the fort. The residents of the village moved around the premises of the fort freely and no watch and ward had been engaged. The fort was in an advanced stage of decay and restoration of the fort to its original shape seemed impossible. Government stated (December 2011) that action would be taken to clear the encroachments and provide a monument attender.

2.3.10.3 Conservation estimates not routed through the DD

DDs did not have any role in selection of conservation works

As per the orders (June 2005) of Government, DDs were responsible for protection/conservation/ monitoring of protected and unprotected monuments, excavation, scrutiny of estimates *etc.* A review of the conservation works undertaken by the Director showed that estimates thereof prepared by ACEs were submitted to the Director directly bypassing their divisional heads i.e., DDs. Thus, the divisional heads did not play any role in identifying and proposing conservation works which were left entirely to the ACEs. As there were no guidelines or norms for selection of works for conservation, the selection of monuments for conservation was evidently guided by the subjective assessment of ACEs. Government stated (December 2011) that as per the guidelines, ACEs were to prepare the estimates in consultation with the DDs and submit these through DDs. Audit, however, observed that the ACEs/ Director had not followed these guidelines.

2.3.10.4 Regional bias in conservation works

Absence of guidelines for prioritising conservation works

A review of the conservation works executed by the Director showed that while allocation of funds for conservation works in respect of Bangalore and Mysore divisions with a total of 208 monuments had been ₹ 21.63 crore during 2006-11, it was only ₹ 11.20 crore during the same period in respect of Belgaum and Gulbarga divisions with a total of 555 monuments as shown **Table-2.15** below:

Table-2.15: Allocation of funds for conservation works

Sl.No.	Name of the Division	Number of different works taken up during 06-07 to 10-11	Actual Cost (₹ in lakh)	Number of Protected Monuments
01	Bangalore	25	1,176.55	92
02	Belgaum	29	609.85	359
03	Gulbarga	25	510.21	196
04	Mysore	55	986.28	116
Total		134*	3,282.89	763

* This included both conservation works of monuments and seven other works
(Source: Information furnished by the Directorate)

Thus, absence of any guidelines or norms for prioritisation of conservation works created opportunities for the implementing authorities to select the works subjectively, resulting in regional bias. Government agreed (December 2011) to remove the bias in selection of monuments for conservation. Unless subjectivity in selection of monuments for conservation is removed through a transparent process of selection based on the merits as per norms, the bias in regional allocations for heritage conservation cannot be eliminated.

2.3.10.5 Delay in completion of conservation works

Conservation works were not completed as planned

Scrutiny of conservation works taken up for 71 protected monuments and 56 unprotected monuments during the period 2006-11 showed delays in completion ranging up to 42 months (Gulbarga division—up to 13 months; Mysore division—up to 26 months, Bangalore division—up to 42 months and Belgaum division—up to 12 months). As conservation works were taken up as an emergency measure in many cases, any abnormal delay in completion was fraught with the risk of further damages to the monuments. Government agreed (December 2011) to avoid the delays in future.

A review of payments made to the contractors for conservation works during January 2007 to March 2011 also showed that Director and Commissioner failed to deduct labour cess of ₹ 32.82 lakh and ₹ 8.91 lakh respectively from the bills in contravention of instructions issued by Government in January 2007. Government stated (December 2011) that labour cess would be deducted from the bills and remitted in the forthcoming years commencing from 2011-12. The reply was silent about the labour cess not recovered from the bills during January 2007 to March 2011.

2.3.10.6 Annual maintenance not undertaken

**No funding base
for upkeep of
monuments**

The best practices of conservation include conservation, protection and upkeep of monuments on a regular basis. The ASI which undertakes protection/conservation works in different parts of the State follows the best practices and makes separate financial provision for annual maintenance of conserved monuments. The best practices stipulate that the annual maintenance work of protecting and preserving the conserved monuments must go on with unbroken regularity every year, as the neglect of the same may necessitate a greater outlay than would otherwise require. Further, to protect the monument from further decay/deterioration, annual maintenance is necessary.

However, it was seen that the Department neither had any policy in place for maintenance of monuments nor had it sought grants for maintenance in the budget estimates sent to Government. It was seen that maintenance of 11 out of 47 monuments jointly inspected was very poor and there was growth of vegetation all-round these monuments threatening their existence. Government stated (December 2011) that necessary funds would be earmarked for annual maintenance of monuments.

Some of the poorly maintained monuments noticed during the joint inspection are shown below:



Govindeswara, Nakeswara Temple,
Koravangala, Hassan district



Mallikarjuna Temple, Mallappanagudi, Hospet
taluk, Bellary district



Mallikarjuna Temple, Mallappanagudi, Hospet
taluk, Bellary district



Kalleswara Temple, Hulikal, Tiptur taluk, Tumkur
district



Khalia Masjid, Lakshmeswara, Shirahatti taluk,
Gadag district



Eshwara Temple, Virupakshipura, Mulbagilu taluk,
Kolar district



Shiva Temple, Sitarama Thanda, Kamalapura,
Bellary district



Shiva Temple, Talavaraghatta, Kamalapur, Bellary
District



Trishulini Durga Parameshwari Temple,
Balapa, Sulya, Dakshina Kannada

It was further seen that only 31 out of 763 monuments had complete protective fencing.

2.3.10.7 Works carried out through Public-Private-Partnerships

**Monitoring of
PPP project
was tardy**

Government accorded (November 2001) approval for taking up of conservation works at 12 temples in eight districts through Sri Dharmastala Manjunatheswara Dharmothana Trust under a Public-Private-Partnership (PPP) arrangement subject to the following terms and conditions.

- The expenditure was to be shared in the ratio of 40:40:20 by Government, the private Trust and the Public.
- The estimates of the conservation works should be jointly prepared by the Directorate and the Trust.
- The Trust should send physical and financial progress of works every month to the Director, Deputy Commissioner and Government.
- The Trust and the Directorate should send a joint-utilisation certificate to the Government.
- The Officers/Engineers of the Directorate should constantly monitor the progress of works.

Government released its share of ₹ 1.91 crore to the Trust during 2006-11. Scrutiny showed that the estimates were prepared only by the Trust, monthly progress reports were not sent to the Directorate, utilisation certificates were sent directly to Government by the Trust and the conservation works were not monitored by the Directorate. Government stated (December 2011) that monitoring of the works undertaken under the PPP model would be undertaken by the Directorate.

2.3.11 Presentation of monuments to public

Presentation of heritage monuments to the public was not effective

Presentation includes all the processes undertaken to present cultural heritage resources to the public. For effective presentation of heritage monuments to the public, there should be an assessment system to determine whether a place merits presentation. Presentation that is developed from a range of different perspectives has the potential to engage the visitors.

Karnataka is the country's fourth most popular tourist destination. The tourism sector attracts significant investment by domestic and global players as infrastructure is ramped up to meet the needs of the growing tourist activity. The number of foreign tourists increased from 2.53 lakh in 2005 to 3.23 lakh in 2010 and that of domestic tourists from 244.90 lakh in 2005 to 359.82 lakh in 2010. The contribution of tourism to the State GDP has increased from 13 in 2005 to 15 in 2010. However, the contribution of tourism to the State GDP has come mainly from sources other than the heritage monuments maintained by the State Government. No effort to present the heritage monuments of the State was visible in either the Directorate or Commissionerate. No system had also been in place to assess the presentation of the heritage sites to the public. It was seen that while all the forty seven monuments jointly inspected did not have any sign board showing the location of the monument, 45 (96 per cent) did not have any display board depicting the background information regarding the historic and heritage values. Twelve monuments (25 per cent) did not have a monument board displaying the restrictions imposed on handling the protected monuments. Government stated (December 2011) that sign boards had been fixed at Bidar, Bijapur, Gulbarga, Mysore and Srirangapatna and further progress would be achieved based on the heritage management plan.

2.3.11.1 Publications

Huge stock of unsold publications in stock

The Director did not follow any policy on printing of publications. The selection of books for publications had been done by the Director. During 2006-11, the Directorate printed 29 publications at a cost of ₹ 78.38 lakh. These publications were sold at selected places, exhibitions and museums. As of March 2009, 88,000 copies of various publications had been held in stock. It was seen that these publications had been printed in bulk to reduce the cost of printing and no trend analysis of sales during previous years had been made before printing. Further, the Director did not evolve any policy for fixation of the selling price of the publications. While in 15 cases, the sale price was higher than the printing cost, it was lower in four cases and almost equal in 10 cases. As the objective of printing publications is to present the heritage monuments to the public, the sale price needs to be so fixed as to facilitate affordability to the public to purchase these publications.

It was also seen that annual verification of publications held in stock had been last carried out for the year ended March 2009. During this physical verification, several shortages of publications costing ₹ 16 lakh had been noticed. The Director had not taken action (March 2011) to get the differences reconciled and the final cost of shortages assessed. Government stated (December 2011) that a policy on fixation of price would be framed and internal audit would be conducted to fix the responsibility for the shortages.

2.3.11.2 Functioning of museums

Physical verification not conducted in four museums

The museums preserve, interpret and promote the natural and cultural inheritance of humanity, provide for understanding and promotion of natural and cultural heritage and hold the collections for the benefit of the society. The Directorate maintains 14 museums and one art gallery. It was seen during joint inspection of one out of eight museums that the antiques had been kept outside in the open due to space constraints, exposing these to the risk of deterioration and damage. Four out of eight museums had not conducted physical verification of antiques/artifacts which carried high heritage value for periods ranging up to two years.

Further, the Director had not fixed any targets for collection of ancient sculptures, antiques, artifacts, paintings *etc.*, by the museums. The collections made by the museums during 2006-11 were very minimal. Government stated (December 2011) that officers in-charge of the museums had been instructed to collect art and archaeological objects to enrich the collections.

2.3.11.3 Physical verification of Treasure Trove

The Treasure Trove had not been physically verified

The Directorate has in its possession a huge collection of ancient valuable treasures which are preserved in the strong room of the Mysore palace due to security reasons. It was seen from the day book of Treasure Trove articles that there were 362 different articles of gold, silver, copper, bronze *etc.*, and the Directorate had not conducted any physical verification of the valuable articles in possession. The period of last physical verification was also not forthcoming from the Directorate. The present Director had also not taken

over charge of the articles. Although the Government had constituted (February 2008) a committee for preparing an inventory of valuables in the Treasure Trove, the work had not commenced (March 2011). Government stated (December 2011) that reconstitution of the committee was under consideration. Failure to conduct physical verification was fraught with the risk of loss of ancient treasures and fixing responsibility for losses, if any, would be rendered difficult with passage of time.

2.3.11.4 Epigraphy and Numismatics

No significant work in Epigraphy and Numismatics

Epigraphy is the science of identifying the graphemes¹³ and of classifying their use as to cultural context and date, elucidating their meaning and assessing what conclusions can be deduced concerning the writing and the writers. Numismatics is the study or collection of currency, including coins, tokens, paper money and related objects.

It was seen that the Department had not undertaken any significant work in the field of Epigraphy and Numismatics during 2006-11 as the posts of Additional Director and Epigraphist remained vacant since May 2007 and March 2000 respectively. Government stated (December 2011) that while the post of Epigraphist was being filled up, a suitable post would be identified for the Numismatics study.

2.3.12 Monitoring

Monitoring was extremely limited

Monitoring covers the monitoring and evaluation of resource delivery, identification and assessment, protection effectiveness, conservation work and presentation of cultural heritage. It includes formal and informal monitoring and audit, performance measurement, visitor satisfaction surveys and any other evaluation and feedback mechanisms. Monitoring in the Department was extremely limited. The Commissioner/Director had not fixed any annual targets for DDs/ACEs/ACAs for periodical inspection of the monuments. Scrutiny of the tour notes of these officers showed that they had been visiting only monuments where the conservation works were in progress and they had not been visiting other monuments at periodical intervals to review the status. It was further seen that vehicles for supervision had also not been available as these were provided to the Belgaum division during June 2008, Gulbarga division during March 2009 and Bangalore and Mysore divisions during September 2010. In the absence of periodical monitoring, the Department lacked the inputs necessary for effective protection and conservation of the heritage monuments under its control. Government stated (December 2011) that necessary instructions were given to the Commissionerate and Directorate for effective monitoring of protected and conservation of heritage monuments.

¹³ Letters or combination of letters that may be used to express a group of speech sounds in a language

2.3.13 Conclusion

There was no coordinated approach to heritage management, resulting in ad hoc approach to decision making, resource allocation and conservation practice. Key heritage sites were not identified by a survey of land and distribution of meagre resources available for preservation and conservation was not driven by the relative significance of the assets. The budget preparation exercise was also flawed as it did not project requirement of funds for cyclical maintenance and capital expenditure. Most of the technical staff had no heritage competencies and had also not been trained. Forty *per cent* of the technical posts also remained vacant for periods ranging from 1 to 21 years. The protection of the monuments was ineffective as the land adjoining these had not been declared as protected. Forty *per cent* of the monuments jointly inspected had either been encroached upon or had buildings constructed adjacent to them. Only 31 out of 763 monuments had protective fencing and watch and ward staff were also meagre. There was no effort to present the monuments to public and most of the monuments jointly inspected did not even have a sign/display board. The monitoring of the heritage monuments was also very deficient.

2.3.14 Recommendations

- A heritage management database containing all information relating to history and management of assets needs to be maintained. The Department should follow a holistic approach for conservation of heritage sites with due prioritisation of resources.
- Regular analysis of the heritage monuments needs to be done to ensure that each asset is managed by the organisation with the best expertise, resources, motivation and local presence to effectively conserve that place and to present the place, wherever feasible.

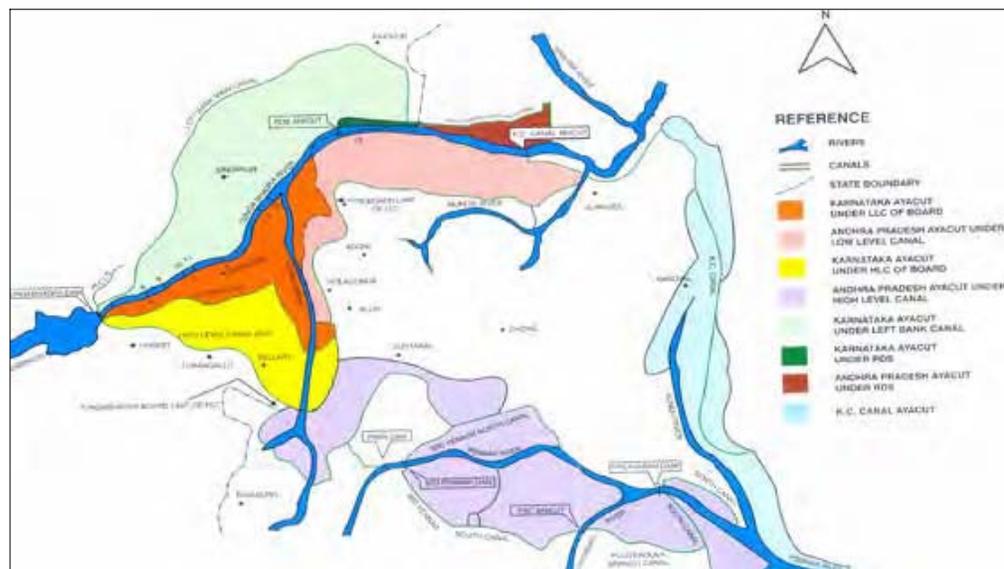
Government, while thanking the Indian Audit and Accounts Department for their valuable guidance, suggestions and recommendations, agreed to implement the recommendations.

WATER RESOURCES DEPARTMENT

2.4 Working of the Irrigation Central Zone

2.4.1 Introduction

Tungabhadra Project (TBP) is an interstate multipurpose project, benefitting Karnataka and Andhra Pradesh (AP), consisting of a reservoir across the river Tungabhadra, with five canal systems¹⁴ and was completed more than 50 years ago. Tungabhadra Left Bank Canal (TLBC), a 227 km long canal with an unlined distributaries network of 707 km, is having a command area of 2.44 lakh hectares (ha). The two right bank inter-state canals are under the control of Tungabhadra Board and expenditure on them are to be shared¹⁵ by both the States. The erstwhile, TBP Zone located at Munirabad was rechristened in 1987 as Irrigation Central Zone (Zone). The Zone is in charge of water management, improvements and maintenance of left bank canals with distributaries and distributaries under right banks canals, Rajolibanda Diversion Scheme (RDS), three medium projects, Vijayanagara channels, *etc.* The modernisation of TLBC and distributaries of Right Bank High Level Canal (RBHLC) was commenced from 2009-10 and is in progress.



INDEX MAP OF TUNGABHADRA PROJECT

The Zone is headed by a Chief Engineer (CE) assisted by two Superintending Engineers (SEs) at Munirabad and Yermarus with six Divisional Officers¹⁶ (EEs) and one Quality Control (QC) Division at Munirabad.

Records of the Zone covering the period from 2006-07 to 2010-11 were test checked in audit during January to April 2011 to examine compliance to rules

¹⁴ Two right bank interstate canals, Tungabhadra Left Bank Canal, Tungabhadra High Level Left Bank Canal and Vijayanagara Canal

¹⁵ In accordance with Krishna Water Dispute Tribunal Award (KWDTA)

¹⁶ Stationed at Bellary, Munirabad, Odderahatti, Sindhanur, Sirwar and Yermarus

and procedures in relation to financial management, programme formulation, execution of works, water management *etc.*, and results thereof are brought out in the succeeding paragraphs:

2.4.2 Financial management – Budget allocation and utilisation

Control over budget and expenditure is essential for optimum utilisation of grants made available to achieve the intended objectives.

The State Government provides funds to the CE for construction, improvement and maintenance of works through annual budget. The CE in turn releases funds through letter of credit to various divisions. As per the provisions of the Budget Manual, funds should be surrendered wherever there are savings and supplementary grants should be obtained for additional/extra works found necessary before its execution. The grant, outlay and pending bills under capital heads and maintenance heads during 2006-10 were as shown in **Table-2.16** below:

Table-2.16: Grant, outlay and pending bills

(₹ in crore)

Year	Capital Heads			Maintenance Heads		
	Budget allotment	Expenditure	Pending bills	Budget allotment	Expenditure	Pending bills
2006-07	102.93	87.72	4.00	18.18	23.30	9.03
2007-08	58.19	46.41	4.44	20.00	23.40	9.80
2008-09	116.41	47.51	1.79	21.77	21.76	8.48
2009-10	226.98	221.09	20.49	22.85	22.85	14.08
2010-11	86.29	83.38	40.78	24.10	23.88	20.37

(Source: Details furnished by Water Resources Department)

As can be seen from the above Table, liabilities in the form of pending bills persisted both under capital and maintenance heads during 2006-11. Under capital head during 2006-09, all the bills were not paid despite availability of funds, for which no reasons were furnished by the divisional officers. The huge savings during 2008-09 were due to delay in sanction of estimate and tender process as the Government approved the modernisation programme in October 2008 only. The increase in pending bills thereafter under capital head was on account of enlargement of scope of modernisation works. The persistent increase in pending bills on one side and regular savings on the other side under capital head indicate ineffective budgetary control.

Under maintenance head, the divisional officers executed the works in excess of the approved works without obtaining supplementary grants in contravention of provisions of the budget manual. As the Government released the funds with reference to the budget allotment, the divisional officers could not make payment for all the bills resulting in huge outstanding bills year after year. The practice of executing works more than the approved works without obtaining supplementary grants amounts to creation of unauthorised liability and by-passing the authority of the legislature. The controlling officers failed to take remedial action on this matter and therefore pending bills increased from ₹ 9.03 crore at the end of 2006-07 to ₹ 20.37

crore at the end of 2010-11 for maintenance heads and ₹ 4 crore at the end of 2006-07 to ₹ 40.78 crore at the end of 2010-11 for capital heads. These pending bills constituted 85 *per cent* and 47 *per cent* for maintenance and capital heads respectively of the budget allotment during 2010-11.

The matter of unauthorised expenditure was also not brought to the notice of the legislature for regularisation through supplementary/additional demand for grant which would have provided legislative scrutiny of these practices. This has been brought to the notice (September 2011) of the Finance Department. No reply has been received from the Department (December 2011).

The Government for savings under capital head attributed (November 2011) to short release of funds for pendency of bills and huge savings in 2008-09 for not taking up of works to the extent of grants allocated due to the announcement of parliamentary elections. For the maintenance expenditure, it was stated that the grant at the rate of ₹ 140 per ha fixed in 1984-85 was exclusively utilised for maintenance of canal net work and previously supernumerary staff borne on establishment was being utilised for water management. The supernumerary staff was regularised and transferred to other departments. Hence, labourers for water management were being deployed through contractors and expenditure was being met out of maintenance grant which is insufficient and inevitable therefore exceeding the grant. While submitting the budget requirements, demand for pending bills was also included but the grants were not released accordingly. The reply was not acceptable as grant under capital head available in 2008-09 was not utilised to clear the pending bills. The reply as regard to insufficient maintenance grant was not tenable as maintenance grant was provided at the rate more than ₹ 140 per ha. For 3.91 lakh ha of command area under Zone, the maintenance grant at ₹ 140 per ha works out to ₹ 5.47 crore only but maintenance grant provided during the period between 2005-06 and 2010-11 ranged between ₹ 18.18 crore and ₹ 24.10 crore. Despite this, unauthorised liability was being created resulting in pendency of bills and no reply was furnished for not obtaining supplementary grants.

2.4.3 Planning

Scope of the TLBC modernisation works was enlarged and were commenced without a detailed project report

For successful implementation of a time bound programme, it is essential that financial and physical planning is done in a phased manner along with a targeted implementation schedule of all construction activities. Audit observed that no planning by prioritising the works in a systematic manner for modernisation was done as is evidenced in the following:

2.4.3.1 Modernisation programme of TLBC and Distributaries

TLBC was constructed more than 50 years ago with available soil in the adjoining borrow areas without providing zonal section for embankment reaches. As breaches and *bongas*¹⁷ were occurring in the main canal, the inner and outer strengthening works as suggested by expert committee were carried

¹⁷ Large cavity

out in the vulnerable reaches from the year 1975 onwards and cement concrete bed to the entire length of TLBC was carried out between 1982 and 1996. Further, strengthening works were also carried out during 1999 to 2003 as per the recommendations of Indian Institute of Science, Bangalore (IISc). Due to occurrence of breaches and *bongas* in 2004 in some of the banking reaches of the canal, the Government constituted (February 2005) a committee headed by Shri H.S. Chinival for suggesting remedial measures. The committee recommended (December 2005) completion of the inner strengthening works of left over vulnerable reaches (60.78 km), bed treatment (5.42 km), improvement to several cross drainage works, *etc.* The Government accorded administrative approval (October 2008) for ₹ 210 crore by calling the work as “Modernisation of TLBC/Distributaries of TLBC” for completion in five years. The works could be taken up only during closure period of the canal (between April and July), which was for about 75 days in a year. However, scope of the modernisation works was enlarged by taking Cement Concrete (CC) lining for entire TLBC against the selected vulnerable reaches and lining of distributaries from 2008-09 and onwards.

2.4.3.2 Commencement of works without a project report

As enumerated in Paragraph 2.4.3.1, the modernisation programme was not restricted to the recommendations made by the Chinival Committee but the scope of modernisation works was increased to cover entire TLBC with its 84 distributaries and RBHLC. Though, the scope of the modernisation programme increased substantially, fresh comprehensive project report detailing cost of different works, year-wise physical and financial targets, schedule of implementation, anticipated benefits, *etc.*, was not prepared by the CE for obtaining clearance of the Technical Advisory Committee (TAC) and administrative approval of the Government. The CE instead submitted¹⁸ estimates of CC lining works in piece meal to the TAC for clearance, which was mandatory for all the works costing ₹ 2.50 crore¹⁹ and above as per the procedure in vogue. The TAC remarked that as the Government had already decided to carry out the modernisation works and estimates were placed before the cabinet, it would be prudent for Government to decide in the matter. The works were commenced as per the administrative approval accorded by the Government to the Chinival Committee Report. This amounted to circumventing the procedure as Chinival Committee Report was no longer relevant due to the enlarged scope of the modernisation programme. Further, the TAC also could not appraise the project comprehensively as the estimates were submitted for clearance in piece meal. Thus, the works were commenced without detailed project report (DPR) and revised administrative approval in violation of codal provisions²⁰.

The Government stated (November 2011) that the Chinival Committee had also recommended improvement of the main canal every year wherever section had deteriorated and modernisation of distributaries. Further,

¹⁸ Estimates of works for 2009 closure period in February 2009 and 2010 closure period in April 2010

¹⁹ ₹ 5 crore from February 2010 onwards

²⁰ Paragraphs 107, 115 and 148 of Karnataka Public Works Departmental (KPWD) Code

Government contended that scope of works was not increased and stated that the DPR is being prepared by Karnataka Neeravari Nigam Limited (KNNL) for obtaining approval of competent authority. The reply is not acceptable as the proposed works involved modernisation of canal network of 2,270 km whereas Chinival Committee recommendation only relates to treatment of vulnerable reaches of TLBC. Though Chinival Committee had made recommendation of modernisation of distributaries, it did not include cost of modernisation of distributaries in its total project cost of ₹ 210 crore. The fact that the DPR is under preparation itself affirms the audit observation that scope of the modernisation works was enlarged and being executed without a DPR.

2.4.4 Award of works

2.4.4.1 Delay in awarding of contracts

As per codal provisions²¹, before awarding of contracts for execution of the works, pre-requisites like preparation of detailed estimate after conducting necessary investigations, preparation of designs and drawings, obtaining sanction of funds, invitation of tenders should be firmed up so as to avoid slippages. These inputs assume greater importance in such programme as the works should be completed during closure period; the reason being the availability of shorter working period (90 days) for the execution of works.

Audit scrutiny revealed delay in tendering process during 2009-10 and 2010-11 and tenders for modernisation works were not finalised before commencement of the canal closure period. Consequently, all the 39 works contracted during 2009-11 could not be completed by the contractors during the canal closure period.

Government in reply (November 2011) attributed to observance of tender procedures for delay in awarding of contracts and consequent reduction in the working period. The reply is not acceptable as the Department invited short term tenders for awarding the contracts early. As a result of skewed planning, the mile stone for various activities could not be fixed which led to delay in awarding of contracts defeating the very purpose of invitation of short term tenders.

2.4.4.2 Works were tendered at higher rates

For 2009 closure period, tenders for 29 works costing ₹ 184.29 crore were called for in November 2008 and the bid amount quoted by the lowest bidders was ₹ 284.51 crore. After negotiation with the contractors for lowering rates, the works were entrusted at a total cost of ₹ 230.29 crore with tender premium ranging between 24.35 and 25 per cent above the updated cost²². Similarly, tenders for ten works costing ₹ 231.45 crore for execution during 2010 closure period were called for during February 2010 and the works were awarded in June 2010 for an amount of ₹ 359.48 crore to the lowest bidders after

Extra burden to Government due to acceptance of tenders at higher tender premium of ₹ 93.54 crore

²¹ Paragraphs 104, 135 and 211 of KPWD Code

²² Cost worked out considering the current prices of materials, revised royalty rates and labour cess of one per cent on WRD SR and labour rates of PWD SR.

conducting negotiation for lowering the rates. The tenders were accepted with tender premium ranging between 10.17 and 13.95 *per cent* with reference to Water Resources Department schedule of rates (WRD SR) of 2010-11 which came into effect from 15th June 2010 and not with reference to the updated cost as was done in the previous year. The WRD SR incidentally had recommended 25 *per cent* weightage to the cement concrete items for works of modernisation programme. The tender premium with reference to updated cost works out to 22.88 to 25 *per cent*. The CE recommended acceptance of tenders with high percentage of tender premium as competitive on the ground that contractors had to mobilise huge labour, machinery and materials in a short working period, as stipulated period of completion was only 90 days.

However, it was observed from the CC lining contracts of Right Bank High Level Canal and Right Bank Low Level Canal awarded by the Tungabhadra Board during the period 2007-11 that the tender percentage ranged between *minus* 39.99 *per cent* and *plus* 4.99 *per cent*. The Board for its works also adopts the WRD SR of Government of Karnataka (GoK) for preparation of work estimates. Since, the works were executed under similar conditions, during identical closure periods and also based on the same SR, the rates contracted by the CE were on higher side compared to the rates at which the Board awarded the contracts. Hence, action of the CE, who is also the CE of the Board, in recommending tenders with tender premium of 25 *per cent* above the estimated cost as competitive was not wholly justified. Even considering the highest tendered premium of 4.99 *per cent* at which the Board awarded the contract, the extra burden to Government in acceptance of tenders at higher tendered rates in two years worked out to ₹ 93.54 crore (**Appendix-2.11**).

Government stated (November 2011) that the works taken up by TB Board were of small magnitude costing few lakh and tender parameters and ground realities were different. The contracts awarded by ICZ were of each costing several crore involving stringent pre-qualification procedure, require large quantity of men, machinery, materials, works were to be executed during closure period *etc.*, and hence not comparable. The reply was not acceptable as the item rate tenders were invited and rates were quoted with reference to quantities, the usage of machinery translates into more output at lower costs and coupled with large quantities enabling competitive rates as compared to tender with less quantity.

2.4.4.3 Improper evaluation of bids for 2010 closure period modernisation works

The short term tenders for four packages relating to modernisation works of TLBC and its distributaries were invited in February 2010; much before the draft tender papers were cleared (April 2010) by TAC and administratively approved (May 2010) by the Government. Against the budget provision of ₹ 69.94 crore, the amount put to tender based on WRD SR of 2007-08 which continued for 2008-09, was ₹ 211.75 crore. The rates quoted by the bidders for the four packages were as high as ₹ 409.26 crore and tender premium working out to more than 90 *per cent* above amount put to tender. The re-casted cost of the four packages with reference to WRD SR and present cost of

labour/materials worked out to ₹ 242.27 crore and tender premium with reference to the re-casted cost ranged between 65.85 *per cent* and 72.33 *per cent*. The same was recommended by CE for acceptance of tenders by TAC and Government. In the meanwhile, the bidders reduced their tender amount by ₹ 81.01 crore after negotiation and the tender premium of the reduced amount with reference to the re-casted cost worked out between 31.03 *per cent* and 40.40 *per cent*. For the acceptance of tenders, the quoted rates should be compared with such re-casted amount as per the norms in vogue. However, the Department did not follow the procedure in view of the high tender premium and waited for WRD SR for 2010-11, which came into effect from 15 June 2010. This effectively meant that the working period available was reduced (as the release of water into the canal was fixed on 28 July 2010). Finally, the Government awarded the contracts at ₹ 328.25 crore with tender premium ranging between 10.17 and 13.95 *per cent* on 22 June 2010 with only 35 days was available against 90 days for execution of works. The tender for the two packages (₹ 215.42 crore) was bagged by the same contractor.

The scope of works included removal of existing Pre-Cast Cement Concrete (PCC) slabs of the sides of the canal, removal of concrete bed, dismantling of several structures, excavation, construction of embankment before laying Reinforced Cement Concrete (RCC) lining in respect of TLBC and excavation, re-sectioning, cement concrete lining for distributaries, *etc.* Further, the lining works of TLBC were to be tackled in scattered locations requiring frequent assembling/disassembling of the paver machinery. Thus, considering the scope of the work, numerous activities involved, scattered location of the works, the necessity of awarding of the contracts by the Government when almost two-third of the working period had elapsed lacks any justification.

Audit scrutiny revealed that considerable progress of 71 to 91 *per cent* of contract amount was achieved by the contractors during working period of 35-40 days. It was also seen that one day prior to agreement and within two days from the date of agreement, the quality control test of aggregates and casting of cement concrete cubes were carried out by the third party consultants appointed for the purpose. This evidently shows that works were commenced by the contractors much before the conclusion of the agreement undermining the process of tendering, which was reduced to a mere formality. The huge reduction in tendered amount offered by the contractors and loading of estimates with 25 *per cent* weightage after receipt of tender for evaluation purpose was only to regularise the work already commenced into a binding contract. This 25 *per cent* weightage prescribed in WRD SR 2010-11 towards concrete items for estimation was in force for that year only even though modernisation works were executed earlier also. For next year, this weightage in estimation of works was withdrawn and recommended to be paid as incentive for completion within the closure period, forming a part of the tender condition. Thus, the loading of 25 *per cent* weightage boosted the departmental estimates thereby making the rates offered by the contractors' look competitive but in fact were on higher side even with reference to the re-casted amount. Thus, tender process was not proper and awarding of contracts with availability of 35 days working period was not justified.

Government replied (November 2011) that activities like mobilising materials, machinery, labour were commenced by the lowest quoted bidder in anticipation of approval of the tenders and rules provides for commencement of work in emergent situations before agreement, sanction, etc. It was further stated that 25 per cent weightage to concrete items was applicable to all modernisation works carried out in the State. The reply was not acceptable for the reason that works were not in vulnerable reaches to consider as emergent works but improvement works for which DPR was still under preparation. Though it was within the knowledge of the Department that contractors had commenced the mobilisation activities, the Government did not award the contracts even after reduction of the rates by the contractors and instead delayed award till WRD SR 2010-11 came into effect. Incidentally, the WRD SR 2010-11 recommended 25 per cent weightage which facilitated narrowing the tender premium. Further, the Transparency Act, emphasise against conducting negotiation with the contractors for the sole purpose of reduction of rates as it would set a bad precedent encouraging contractors to quote highly erratic rates only to lower their rates later, which was the case in the last two years.

2.4.5 Execution of works

2.4.5.1 Extra expenditure on replacement of existing CC bed of TLBC

Extra expenditure of ₹ 29.01 crore due to removal of existing CC bed with fresh RCC in non-critical reaches

The Chinival Committee, *inter alia*, identified certain reaches of TLBC totaling 5.42 km for providing bed treatment with RCC as it was damaged/deteriorated/distressed and to extend the treatment gradually based on further observations during closure periods as suggested by IISc. There were no suggestions for removal of existing CC bed and replacement with RCC in reaches where the same was in good condition. However, scrutiny of records revealed that removal of existing CC bed and fresh RCC laying was taken up in 91 km length of TLBC. In all these cases, the works were proposed by indicating it as recommended by Chinival Committee whereas the committee had specifically identified the vulnerable reaches of 5.42 km for replacement of bed. Thus, justifying the works as being taken up as per committee's recommendation was incorrect. The total area of CC bed taken up for replacement in the non-critical reaches in four divisions was 3,98,993 Sqm involving extra expenditure of ₹ 29.01 crore as shown in **Table-2.17** below:

Table-2.17: Statement of fresh lining to canal bed

Division	TLBC reaches	Bed length removed (km)	Area of fresh CC lining (Sqm)	Total expenditure (₹ in crore)
Odderahatti	Km 32 to 39	4.15	68,526	4.51
Sindhanur	Between Chainage 2,475 and 3,458	16.73	2,16,919	16.21
Sirwar	Km 116 to 137 and 143 to 155	7.95	72,711	5.25
Yermarus	Between Chainage 6,074 and 7,093	9.07	40,837	3.04
TOTAL		37.90	3,98,993	29.01

(Source: Details furnished by Executive Engineers)

The Government stated (November 2011) that the canal bed was provided during original construction period. The modernisation works not only meant for strengthening but also included improvement and CC bed was replaced after identifying the reaches. The reply is not acceptable as Chinival Committee had identified the vulnerable reaches for a length of 5.42 km after inspection of the condition of the canal. However, CC bed replaced was for a length of 91 km and audit comment relates only to a length of 37.90 km where condition of existing CC bed was not indicated as bad/heaved up against total additional length of 85.58 km taken up for replacement of CC bed as seen from the estimates. This was also commented upon by the TAC that no proper justification was forthcoming from the estimates for the necessity of the work.

2.4.5.2 Extra cost due to non-adherence to technical norms

**Extra cost of
₹ 17.89 crore due
to unwarranted
execution of side
lining to
distributaries**

The existing sections of the distributaries were designed with reference to those required for unlined canal and accordingly, the full supply depth (FSD)²³ and free board²⁴ (FB) are worked out. The capacity of a canal can be increased by lining it. The lining provides smooth surface thereby causing less resistance to the flow of water. The capacity is a function of velocity, the higher the velocity, the greater is the carrying capacity of the canal and consequently it reduces canal section required.

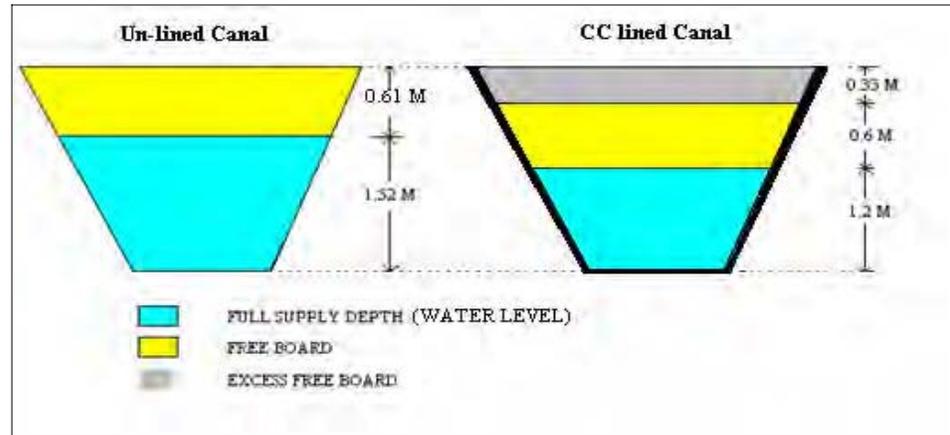
When unlined canals are taken up for lining, the option either would be to line the canal without changing the section or reducing the section of the canal. In first option, original section is retained for lining *i.e.*, without changing the bed width, height of the FSD would decrease as the carrying capacity in a canal is the function of velocity of water. The lining is to be restricted to reduced FSD plus free board as per norms. In case, the second option is selected for execution, the original FSD would be retained by decreasing the bed width and top width of the canal but it involves expenditure on filling to reduce the section of the canal.

Audit scrutiny of lining estimates of distributaries of TLBC/RBHLC revealed that though the original section of the distributary was retained, side lining height was not reduced by working out revised FSD. It was done up to original FSD plus FB level leading to unwarranted execution of side lining above the revised FSD levels and hence expenditure thereon was avoidable.

An illustrative diagram indicating water level in the unlined and lined canal having same cross section at designed discharge of 4.03 cumecs is shown below:

²³ Water level in the canal at its designed discharge

²⁴ The minimum vertical distance provided above FSD in the water way of the canal



The revised FSD was calculated²⁵ in audit in respect of 47 distributaries. The avoidable expenditure on sidelining above the revised FSD levels worked out to ₹ 17.84 crore as shown in **Table-2.18** below:

Table-2.18: Statement showing extra cost on free board

Division	Number of distributaries/ Sub-distributaries	Length in mtrs	Excess area of side lining in Sqm	Avoidable expenditure (₹ in crore)
Munirabad	11	23,652	36,898.06	1.46
Odderahatti	5	56,001	91,902.82	5.20
Sindhhanur	8	36,266	64,117.88	4.26
Sirwar	9	28,223	34,515.46	1.92
Yermarus	6	18,970	29,148.60	1.63
Bellary	8	43,887	60,797.92	3.37
TOTAL	47	206,999	317,380.74	17.84

(Source: Details furnished by Executive Engineers)

The Government stated (November 2011) that the original section was retained to overcome the prevailing irrigation practice *i.e.* cropping pattern violation and unauthorised irrigation. The rush irrigation due to changed cropping pattern and rotational irrigation needs 15 to 25 per cent of extra water. The reply was not acceptable as even after allowance of 20 per cent over the existing discharges towards rush irrigation, the side lining above FSD plus FB provided was still more in the canals having discharges between 0.11 and 10 cumecs as recalculated in the audit and extra cost works out to ₹ 17.84 crore for an area of 3.17 lakh sq mtrs. The TAC had also observed that side lining up to original levels were proposed without calculating revised levels. Further, the canal network to utilise the water allocated from TB Dam had already been constructed and outlets had been designed accordingly to serve the command area. If more water is allowed to feed the existing localised area in the upper reaches, the tail end reaches would continue to suffer even after modernisation works as the water utilisation cannot exceed the quantum allotted by the Krishna Water Dispute Tribunal Award.

²⁵ As per Manning's formula by taking 'N' value as 0.018 for CC lining surface. The 'N' value represents roughness index of the surface.

2.4.5.3 *Extra cost due to excess thickness for side lining*

Extra cost of ₹ 31.58 crore due to provision of additional thickness of CC lining

The Code of Practice for lining channels published by the Bureau of Indian Standards, New Delhi (BIS) (IS 3973 of 1993) prescribes thickness of 50-60 mm and 60-75 mm for side lining of canals for discharge capacity of 0 to 5 cumecs and 5 to 50 cumecs respectively considering the depth of the water in the canal. Test check of the approved estimates of 37 works taken up by the five divisions²⁶ disclosed that CC lining of side walls of the distributaries (total length 50.5 km) was uniformly provided with thickness of 100 mm instead of maximum 60 mm and 75 mm, accordingly to their carrying capacity and location, required as per IS specifications. The provision of excess thickness of CC lining in 37 works resulted in extra cost of ₹ 31.58 crore on 15.38 lakh Sqm of extra CC lining to sides of distributaries.

The Government stated (November 2011) that thickness specified in IS Code is minimum thickness to be provided and higher thickness was provided based on canal characteristics, type of strata, climatic conditions and other factors affecting the flow of water in the canal. Further, Government stated that sizes of the aggregates in the RCC are interrelated with maximum size of aggregates up to 20 mm (with oversize up to 25 mm). The maximum Reinforced Cement to be provided is four times of oversize of the aggregate member *i.e.* 25 mm and hence 100 mm thickness for side lining was provided.

The reply is not acceptable as audit observation was not related to RCC lining but Cement Concrete (CC) lining. The RCC lining executed was for small portions such as embankment and templates which had not been objected in audit and side lining to distributaries predominantly done was CC lining. The IS code recommends increased thickness only in case of freezing climate and provides tolerance of plus or minus 10 mm in the specified thickness. Further, cohesive non-swelling soil as per norms was provided to counter the swelling pressure of black cotton soil. However, the thickness of CC lining provided in all the cases pointed out in audit exceeded the prescribed thickness by more than 10 mm and the estimates did not mention existence of such adverse conditions necessitating uniform thickness of 100 mm for all the distributaries irrespective of their carrying capacity and soil characteristics.

2.4.5.4 *Imposition of nominal penalty*

Imposition of nominal penalty resulted in undue benefit of ₹ 15.80 crore to the contractors

The agreement provided that in the event of the contractor failing to give proportionate progress of work, the compensation on account of liquidated damages equal to 0.1 *per cent* of the contract value per day limited to 10 *per cent* of contract value was to be levied.

It was, however, seen in audit that while fixing the time extension in 24 cases, the CE imposed nominal penalty of ₹ 100 and ₹ 200 per day for the delay ranging from 26 to 303 days without analysing the period attributable to the contractors. Thus, the imposition of nominal penalty in contravention of the scope of the agreement and in disregard to delays that has been worked out by

²⁶ Bellary, Odderahatti, Sindhanur, Sirwar and Yermarus

EEs resulted in undue financial benefit of ₹ 15.80 crore to the contractors as shown in the **Table-2.19** below:

Table-2.19: Non-recovery of liquidated damages

Division	No. of works	Contract price (₹ in crore)	Range of delay in days	Liquidated damages recoverable	Nominal Penalty levied ²⁷	Shortage in levy
				(₹ in lakh)		
Odderahatti	4	33.31	90 to 240	326.40	0	326.40
Sindhanur	2	22.81	286	228.06	0.36	227.70
Sirwar	4	29.34	303	293.44	0	293.44
Yermarus	9	85.01	More than 300	653.94	0	653.94
Bellary	5	12.22	26 to 66	79.00	0.25	78.75
TOTAL	24	182.69		1,580.84	0.61	1,580.23

(Source: Details furnished by Executive Engineers)

The Government stated (November 2011) that the rate of levy of liquidated damage was discretionary and hence nominal penalty for the extended period was levied on the contractors who have failed to complete the works in the stipulated period. The reply was not accepted as 0.1 *per cent* of the contract amount per day delay was the minimum penalty leviable as per the terms of the agreement. The minimum penalty was not levied in cases where penalty was imposed and not at all levied in other cases as could be seen from the **Table-2.19**.

2.4.6 Sharing of expenditure on Rajolibanda Diversion Scheme

2.4.6.1 Non-recovery of dues from the Andhra Pradesh Government

₹ 18.66 crore is due from Government of Andhra Pradesh

A mention was made in Paragraph 3.5.6 of the Report of the Comptroller and Auditor General of India for the year ended 31 March 2005 (Civil) – GoK, regarding non-recovery of dues (₹ 13.86 crore) from Government of AP towards maintenance of Rajolibanda Diversion Scheme, an inter-state medium irrigation project completed in 1960. The maintenance charges were to be borne by Karnataka initially and later reimbursed by AP as per agreed pattern of sharing since head works and initial reaches are situated in Karnataka.

It was noticed that EE, Canal Division No. 5, Yermarus had not raised demand against Government of AP after March 2004. The Government, in reply to Public Accounts Committee (PAC) for Audit Report of 2004-05 stated (June 2010) that the issue had been taken up with AP Government in March 2006. However, it was noticed that Government had not pursued vigorously for obtaining reimbursement despite intimating PAC. Failure to pursue the issue at Government level resulted in reimbursable amount escalating to ₹ 18.66 crore²⁸ to the end of March 2010.

An arrangement is in vogue for monthly settlement of Karnataka's portion of maintenance expenditure of Dam and Right Bank Canals of the Tungabhadra Project incurred by the AP through Tungabhadra Board. The settlement is done by Reserve Bank of India by operating Inter-State suspense Account.

²⁷ Levied but not recovered

²⁸ Principal of ₹ 9.96 crore with interest of ₹ 8.70 crore

The absence of similar arrangement to adjust the maintenance expenditure incurred by Government of Karnataka had resulted in dues outstanding against AP Government for so many years.

The Government stated (November 2011) that concerned Division Officer had taken up the issue with his counterpart. However, Government failed to provide reasons for not taking up the matter with AP Government.

2.4.6.2 Failure to recover establishment, tools and plant charges

₹ 7.14 crore was not recovered from Government of Andhra Pradesh towards establishment, tools and plant charges

For the modernisation of RDS head works and main canal to augment the discharge capacity, the Government of AP deposited (August 2007) ₹ 58.94 crore with Government of Karnataka, as the components of the RDS are situated in Karnataka. The works were taken up as Deposit Contribution work by EE, No. 5 Canal Division, Yermarus in four packages (₹ 67.86 crore) during 2008-09. The progress achieved to the end of March 2011 was ₹ 41.99 crore.

The Codal provisions²⁹ envisage levy of Establishment, Tools and Plant (ETP) charges at 17 per cent of value of work done for non-Government works. Scrutiny of records revealed that ETP charges amounting to ₹ 7.14 crore was not levied on the value of work done and not adjusted against the deposit available. It was noticed that ETP component was not included in the estimate forwarded to AP. In reply, the Divisional Officer accepted the omission and stated that matter would be taken up with authorities of AP for recovering the ETP charges.

The Government stated (November 2011) that the ETP charges would be recovered by incorporating the charges in extra financial implication proposals.

2.4.7 Water management

Huge area under violations of cropping pattern was irrigated and penalty for violations was short levied by ₹ 79.13 crore

The success of an irrigation project depends upon supplying water to all parts of the command area including tail end areas. In order to achieve this objective, before commencement of each season, the SE notifies the extent of command area for each distributary indicating the date(s) of supply of water, the type of crops to be grown. The farmers of the notified area are required to adhere to the notified cropping pattern and are liable for payment of water rates. The growing of non-notified wet crops such as paddy and sugarcane against the notified semi-dry crops in the area affects the irrigation in lower reaches of the command area as wet crops consume more water and therefore the benefits of irrigation accrue to a fewer number of persons. Because of this, the cropping pattern violation attracts levy of penalty in the form of penal water rates at five times the normal water rates. The violation in cropping pattern is generally prevalent in upper reaches of the command area as these areas get water first. The farmers at lower reaches get deprived of irrigation benefit also due to un-authorized drawal of water by the farmers of non-command area which is also liable for penalty at 15 times the normal water rates.

²⁹ Paragraph 512 read with Appendix 3 of Karnataka Public Works Accounts Code (KPWA)

The year-wise details of extent of total area irrigated, area irrigated without cropping pattern violation, area irrigated with cropping pattern violation, and unauthorised irrigated area during 2005-10 under Tungabhadra Project as furnished by the divisions were as shown in **Table-2.20** below:

Table-2.20: Cropping pattern and unauthorised irrigation

(Area in hectares)

Year	Total Area irrigated	irrigation without violation of cropping pattern		Irrigation violating cropping Pattern		Unauthorised irrigation	
		Area	Percentage	Area	Percentage	Area	Percentage
2005-06	3,68,090.16	1,24,748.22	33.89	1,55,365.95	42.21	87,975.99	23.90
2006-07	3,34,877.77	1,44,710.80	43.21	1,26,254.23	37.7	63,912.74	19.09
2007-08	3,38,309.81	1,20,511.17	35.62	1,69,782.94	50.19	4,8015.7	14.19
2008-09	3,80,967.73	1,24,403.85	32.65	1,40,641.66	36.92	1,15,922.22	30.43
2009-10	4,34,090.17	1,28,035.85	29.5	2,09,466.88	48.25	96,587.43	22.25
TOTAL	18,56,335.64	6,42,409.89	34.61	8,01,511.66	43.18	4,12,414.08	22.22

(Source: Details furnished by the Chief Engineer)

It could be observed from the above table that the extent of command area irrigated without violations was only 29.5 to 43.21 *per cent* of the total area irrigated and violations constituted 56.79 to 71.5 *per cent* of the total irrigated area during 2005-10. The irrigation violating cropping pattern was higher and constituted 36.92 to 50.19 *per cent* of the total irrigated area while area under unauthorised irrigation ranged between 14.19 and 30.43 *per cent*.

2.4.7.1 Part of command area deprived of irrigation facilities due to violations

As a result of violations, not only the tail end reaches of main canal were deprived of water for irrigation but the upper reaches of the command area was also deprived of irrigation. The division-wise details of notified area, average area irrigated and average suffering *atchkat*³⁰ for the years 2005-06 to 2009-10 were as shown in **Table-2.21** below:

Table-2.21: Suffering atchkat

(Area in hectares)

Division	Notified Area	Average area irrigated during 2005-06 to 2009-10	Average area under violations	Irrigation without violation		Suffering atchkat	
				Average area	Percentage	Average area	Percentage
TLBC							
Odderahatti	46,923.00	78,203.18	64,632.16	13,571.02	28.92	5,652.01	12.05
Sindhanur	76,360.96	87,957.41	74,788.09	13,169.32	17.25	35,561.07	46.57
Sirwar	81,929.83	72,380.13	58,192.94	14,187.20	16.56	11,390.52	13.9
Yermarus	49,673.00	14,269.89	6,046.50	8,223.40	16.99	42,677.07	85.92
Total	2,54,886.79	2,52,810.61	2,03,659.69	49,150.94	19.28	95,280.67	37.38
Other than TLBC							
Munirabad	32,447.65	27,931.26	11,453.07	16,478.19	50.78	NA	NA
Yermarus	4,042.04	3,601.65	2,525.43	1,076.22	26.63	1,305.04	32.29
Bellary	99,550	86,923.63	25,146.98	61,776.65	62.06	15,308.15	15.38
Total	1,36,039.69	1,18,456.54	39,125.48	79,331.06	56.98	16,613.19	11.93
Grand Total	3,90,926.48	3,71,267.15	2,42,785.17	1,28,482.00	32.87	1,11,893.86	28.62

(Source: Details furnished by Divisional Officers)

The command area under Sindhanur Division, situated in the upper reach of the TLBC, the extent of area deprived of irrigation was as high as 46.57 *per cent* of the notified area due to huge violations when compared to the area in

³⁰ Command area deprived of water

the immediate lower reaches that comes under Sirwar Division. However, no reasons were furnished by Divisional Officer of Sindhanur for high percentage of area deprived of irrigation though situated at upper reach. Due to violations in upper reaches, 85.92 *per cent* of the area under the Yermarus Division was deprived of irrigation, which constituted 16.74 *per cent* of the TLBC notified area.

Thus, the huge area under violations being irrigated and *atchkat* area deprived of irrigation indicates improper management of water and inability of the Government in bringing about discipline in equitable distribution of water.

The Government stated (November 2011) that the original DPR contemplated to cover more physical area and adjacent lands were notified either for kariff or rabi crops. Further, all higher lands have been leveled and brought under gravity flow. On account of violations of cropping pattern coupled with unauthorised irrigation area existing for decades, it has become difficult to follow localisation as envisaged in original DPR. Government further stated that the TAC had also opined (February 2002) that it is almost impossible to change cropping pattern and deny irrigation to the existing unauthorised area which had stabilised. Finally, it was stated that the cropping pattern needs to be reviewed and revised as per prevailing conditions. Though Government acknowledges that review and revision was vital, necessary action had not been taken in this regard despite violations existing for decades. The Administrator, Command Area Development Authority (CADA), TBP in August 2002 had sought details from CE, ICZ for realistic assessment of command area by de-notifying the tail end reaches and regularising the unauthorised area. This would ease out maintenance work and also water management to some extent. However, no progress had been made in this regard although suffering *atchkat* constituted 28.62 *per cent* of the command area. Further, modernisation programme for existing TBP is being taken up without reviewing the prevailing conditions and revising the command area.

2.4.7.2 Failure to impose penalty for violations

To control the offenders committing violations, the irrigation rules provide for levy of penalty at five and 15 times of the normal water rates for cropping pattern violation and unauthorised irrigation in non-notified area respectively.

However, it was seen that prescribed rates of penalty for violations were not levied by the irrigation officers thereby abetting the violations and loss of revenue. The division-wise short demand in penal water rates during 2006-10 worked out to ₹ 79.13 crore as shown in **Table-2.22** below:

Table-2.22: Short demand in penal rates

Division	Area under violation (ha)	Area under unauthorised irrigation (ha)	Penal water rate (₹ in lakh)		
			Leviable	Levied	Difference
Odderahatti	1,66,735.50	1,56,425.30	7,849.70	4,593.36	3,256.34
Sindhanur	2,83,931.60	90,008.85	6,833.82	5,214.78	1,619.04
Sirwar	1,88,461.08	1,02,503.60	6,119.73	3,623.40	2,496.33
Yermarus	23,799.28	18,657.81	966.37	458.70	507.67
Bellary	88,364.61	37,370.30	2,426.86	2,393.51	33.35
Total	7,51,292.07	4,04,965.86	24,196.48	16,283.75	7,912.73

(Source: Details furnished by Executive Engineers)

The Government stated (November 2011) that further demand would be forwarded to Revenue Department after verification.

2.4.7.3 *Extra expenditure on deployment of sowdies*

Excess deployment of sowdies lead to extra expenditure of ₹ 5.18 crore

The Irrigation Manual of WRD prescribes engagement of one sowdy³¹ for a command area of 243 ha for managing the distribution of water according to prescribed schedule. Many Sowdies are working in the Subdivisions under regular and supernumerary posts for water management. In addition, the Sub-divisions had resorted to large scale deployment of Sowdies through contractors under task work agreements. The details of deployment of sowdies during 2005-10 were furnished by three³² out of six divisions. Audit scrutiny of the information revealed excess deployment of 16,31,037 man days of sowdies than admissible as per norms leading to extra expenditure of ₹ 5.18 crore to Government during 2005-10. The annual programmes of works were approved by SE; based on which annual maintenance estimates (AME) of distributaries were sanctioned by EE. It was seen that EEs had not indicated the requirement of excess requirement of sowdies for water management while submitting the programme of works to SE nor AME's contained the basis for calculation.

Further, a committee constituted (February 2006) by Government to study and report various aspects of maintenance of irrigation projects is yet to submit its report even after lapse of six years.

The Government stated (November 2011) that the norms for Sowdies were devised when supernumerary staff was available in the subdivisions and they were being utilised for water management. As supernumerary staff was no longer available for water management, labourers were engaged through contractors for water management. Hence excess labourers were not engaged. The reply was not acceptable as norms were fixed with reference to extent of area that could be effectively managed by a Sowdy and applicable to all projects. Taking supernumerary staff into consideration for fixing norms would be unscientific as their number varied in each division.

2.4.7.4 *Non-formation of Water User's Co-operative Societies*

Failure in implementing the policy of formation of Water User's Co-operative Societies

Government of India formulated National Water Policy 2002, which envisage formation of Water User's Co-operative Societies (WUCS) by farmers to take over water management to ensure equitable distribution of water to all parts of the command area. As per the details furnished by CADA, as against the target of 835 WUCS to cover total command area of TBP of 3.63 lakh ha, 493 WUCS were registered but only 254 WUCS covering 0.59 lakh ha had taken over water management as of March 2011. Thus, 83 *per cent* of the command area was not covered through mechanism of WUCS. The Administrator, CADA stated (April 2011) that the failure was primarily due to the fact that farmers in the upper reaches were not affected by water supply and hence not interested in the scheme and though the farmers in the lower reaches were

³¹ Labourers engaged for regulating water supply in the canal

³² Bellary, Munirabad and Odderahatti

interested, WUCS could not be formed due to non-availability of water. The Department failed to implement the policy of formation of WUCS and to ensure WUCS managed by farmers, wherever established, for equitable distribution of water.

The Government stated (November 2011) that efforts would be continued to form the WUC's in the command area. However, Government did not furnish the plan of action to achieve the objective.

2.4.8 Demand of Water Rate

2.4.8.1 Short demand by the irrigation officers leading to loss of revenue

Short raising and short registration of water rate demand lead to loss of ₹ 195.36 crore

According to the provisions of Karnataka Irrigation (levy of Water Rates) Rules 1965 (WR Rules), the Irrigation officials are responsible for raising demand of water rate (WR) and maintenance Cess prescribed. The rates prescribed by the Government in July 1985 and July 2000 *inter alia* included WR of 5 times and 15 times the normal rates for violation of cropping pattern and unauthorised irrigation respectively. Audit scrutiny revealed short raising of demand due to incorrect application of rates leading to loss of revenue of ₹ 67.86 crore during 2005-06 to 2009-10 in respect of five divisions as shown in **Table-2.23** below:

Table-2.23: Short raising of demand

(Area in ha – Amount in ₹ lakh)

Division ³³	Area irrigated in both seasons during 5 years for 2005-06 to 2009-10			WR		Penal water rate (PWR)		Difference		
	Normal	Violation	Unauthorised	Leviable	Levied	Leviable	Levied	WR	PWR	Total
Odderahatti	67,855.11	1,66,735.50	1,56,425.30	157.96	673.64	7,849.70	4,593.36	-515.68	3,256.34	2,740.66
Sindhanur	65,846.60	2,83,931.60	90,008.85	103.34	92.18	6,833.82	5,214.78	11.16	1,619.04	1,630.20
Sirwar	70,935.96	1,88,461.08	1,02,503.60	141.82	388.86	6,119.73	3,623.40	-247.04	2,496.33	2,249.29
Yermarus	47,958.33	23,799.28	18,657.81	83.84	504.38	966.37	458.70	-420.54	507.67	87.13
Bellary	3,08,883.24	88,364.61	37,370.30	470.84	425.65	2,426.86	2,393.51	45.19	33.35	78.54
Total	5,61,479.24	7,51,292.09	4,04,965.86	957.80	2,084.71	24,196.48	16,283.75			6,785.82

(Source: Details furnished by Executive Engineers)

Audit scrutiny further revealed that No.1 Sub division, Odderahatti of No.2 Canal Division did not raise demand of PWR for five years from 2005-06 to 2009-10 and also of WR for two years from 2008-09 to 2009-10 resulting in short demand of WR amounting to ₹ 19.46 crore.

Though the annual statements of demands submitted by the subdivisions are received in the divisions, circles and zonal offices, the correctness of the same were not scrutinised at any level leading to continued short demand over the years. The total short demand of WR in respect of five divisions worked out to ₹ 87.32 crore.

The Government stated (November 2011) that further demand would be forwarded to Revenue Authorities after verifying the details.

³³ The crop wise details of water rates levied by the No. 1, TR Division, Munirabad were not furnished

2.4.8.2 Short registration of demands by the Revenue authority leading to loss of revenue

As per the provisions of WR Rules, the demands of WR raised by the irrigation officers (IOs) against each farmer are to be forwarded to the concerned Revenue Authorities (RA) of the taluk/village for registering and recovering the same from the farmers benefitted through irrigation. The taluk offices are required to maintain watch register of Demand, Collection and Balance (DCB). Any short registration of demand by the RA leads to non recovery of WR from the concerned farmers resulting in loss of revenue to Government. Audit scrutiny of DCBs of Revenue Department and demands stated to have been raised by the IOs revealed that there were huge difference between the demands registered by the RA and those stated to be demanded by IOs. The short registration of demands by 6 taluks relating to 4 divisions was ₹ 108.04 crore as shown in **Table-2.24** below:

Table-2.24: Loss of revenue

(₹ in lakh)

Division	WR and Maintenance Cess (MC)	PWR	Total	Registered in Revenue Dept			Difference		Total
				Taluk Office	WR + MC	PWR	WR + MC	PWR	
Oddehatti	398.46	1,939.59	2,338.05	Koppal	13.96	34.07	103.51	1,667.72	1,771.23
				Gangavathi	280.99	237.8			
Sindhhanur	115.05	5,214.78	5,329.83	Sindhhanur	586.17	982.7	-471.12	4,232.08	3,760.96
Sirwar	414.76	3,623.40	4,038.16	Manvi	109.76	83.1	305.00	3,540.30	3,845.30
Bellary	466.76	2,393.51	2,860.27	Bellary	189.29	335.72	93.26	1,333.39	1,426.65
				Siruguppa	184.21	724.4			
TOTAL								10,804.14	

(Source: Details furnished by Executive Engineers and Revenue authorities)

In one taluk, the demand of WR and cess registered were far more than those demanded by IOs. The differences are attributable to non reconciliation of demands by the EEs and also non prescription of adequate system by the Zonal office in this regard. The matter of short registration may be investigated to establish the reasons for the same and to fix responsibility for such loss of revenue and also to ensure non recurrence of such irregularity.

The Government stated (November 2011) that further demand would be forwarded to Revenue Authorities after verifying the details.

2.4.9 Idle investment on Lift Irrigation Schemes

Non-completion of the work rendered the investment of ₹ 1.22 crore idle

The two lift irrigation schemes estimated to cost ₹ 73 lakh and ₹ 58 lakh with potential of 480 ha and 182 ha respectively were approved by Government during 2003-04. Both works were awarded during May 2005 and the value of work executed by 2007 and 2008 was ₹ 1.22 crore³⁴ and the works were completed except external power supply connection. However, during 2009 floods, the approach roads and electro mechanical installations were damaged and some parts were stolen requiring repairs and replacement at a cost of ₹ 10

³⁴ Bylamarchard - ₹ 62.91 lakh (completed March 2007) and Katharaki - ₹ 59.18 lakh (completed March 2008)

lakh. However, no action was taken to complete the work which required small amount rendering the investment of ₹ 1.22 crore idle.

The Government stated (November 2011) that these schemes would be completed during 2011-12.

2.4.10 Conclusion

The financial management in the Zone was deficient resulting in under-utilisation of grants under capital heads and increasing liability of pending bills under both capital and maintenance heads. The tendering process of modernisation works was deficient as the contracts were not firmed up before the commencement of canal closure period for utilising full working period and contracts were awarded at higher tender premium. Government did not pursue vigorously for recovering of dues from Andhra Pradesh towards expenditure incurred on RDS. The command area to the extent of 1.12 lakh hectares was deprived of irrigation benefits due to failure in controlling cropping pattern violations & unauthorised irrigation. There was laxity on the part of Sub-divisional Officers in demanding water rates and levy of penalty for such violations.

2.4.11 Recommendations

- The controlling officer should ensure that sanction to works is limited to grants allotted.
- The contracts should be awarded before commencement of the canal closure period.
- The IS specifications should be adhered to in execution of works to achieve economy in expenditure.
- Inter-state settlement suspense mechanism should be followed for recovering dues from the neighboring state.
- For effective water management and maintenance, the lands under unauthorised irrigation should be notified by de-notifying the suffering *atchkat* as suggested by the Administrator, CADA.