

CHAPTER I

FOREST AND WILDLIFE DEPARTMENT

Audit of acquisition and implementation of Forest Management Information System

Highlights

Audit of acquisition and implementation of Forest Management Information System (FMIS) and Project Finance Management System (PFMS) revealed various shortcomings such as delay in developing and operationalising the system, failure in testing strategy, idling of hardware at different offices, partial data entry/absence of data in modules, delay in rendering monthly accounts to Accountant General, absence of any documented policy regarding Information Technology objective or long term IT Plan etc. Some of the more important points are indicated below:

➤ **In view of non-fulfilment of contractual obligation there was no justification for the additional contract for Rs 12.80 lakh towards maintenance warranty.**

(Paragraph 1.3.4)

➤ **The Consultant which rendered service as FMIS Manager was also entrusted with the development of software for PFMS and FMIS contrary to the provisions of contract. As a result, the Department did not benefit from the consultancy for FMIS Manager from January 1999 to December 2003 incurring an expenditure of Rs 62.45 lakh towards remuneration.**

(Paragraph 1.3.5)

➤ **There was no record as to the testing of accounting software adopting a well-defined testing strategy. Release of Rs 18.50 lakh before testing and acceptance of software (FMIS) was irregular.**

(Paragraph 1.4.1)

➤ **Servers and thin clients costing Rs 96.08 lakh were idling at different offices including Forest Headquarters.**

(Paragraph 1.4.3)

➤ **Due to partial data entry in 9 modules and absence of data in 6 modules the FMIS could not be put to effective use.**

(Paragraphs 1.5.1 and 1.5.2)

➤ **The Geographical Information System (GIS) module could not be installed at Circle/Division Offices as the operating system in which GIS was developed was not compatible with FMIS software.**

(Paragraph 1.5.3)

➤ **There was substantial delay in rendering monthly accounts to the Accountant General due to the failure to enter transactions on a day to day basis.**

(Paragraph 1.5.4.3)

- **An IT Steering committee comprising representatives of senior management, user management, and IT functions was not constituted to oversee the IT functioning and there was no documented policy approved by top management regarding Information Technology (IT) objective or long term IT Plan.**

(Paragraphs 1.6.1 and 1.6.2)

1.1 Introduction

Kerala Forest Department (KFD) is the custodian of 11,264 square kilometres of forest land in the State and controls the conservation of forest land in Kerala. Its functions include protection and development of forests and preservation of wild life. The Department with its Headquarters (HQ) at Thiruvananthapuram is headed by the Principal Chief Conservator of Forests (PCCF).

1.1.1 Background about computerization

FMIS developed during January 2003 had not been fully operationalised

Kerala Forestry Project (KFP), a World Bank assisted Project implemented in the Department during 1999-2003 (Project cost Rs.182.4 crore) among other things envisaged the establishment of two computerized applications viz., 'Forest Management Information System (FMIS)' for the effective management of forestry resources of the State and 'Project Finance Management System (PFMS)' to monitor the Project.

PFMS was initially conceived to submit to World Bank, accurate and timely information regarding Project resources and expenditure relating to Kerala Forestry Project. Later the scope was expanded to include all accounting requirements of the Department. This was to be integrated with FMIS as an Accounts Module.

The development of PFMS and FMIS was entrusted to M/s RITES, New Delhi, in December 1998 and April 2001 respectively. While PFMS was partially operationalised during April 2003, FMIS developed during January 2003 is yet to be fully operationalised. Both systems were developed with ORACLE as Back end and Developer 2000 as Front end. FMIS comprised 15 Modules covering each activity of the Department such as Forest Administration, Personnel Management, Plantation Management and Social Forestry Management. Its main objective was to make timely and pertinent information available for management decision-making.

During 2000-04 the Department spent Rs 4.45 crore for procurement of computers, servers, accessories, etc. The expenditure for the development of PFMS and FMIS was Rs 10.11 crore during the project period extended up to 31 March 2004 and Rs 3.91 crore thereafter. This included cost of development of software-Rs 92.50 lakh for FMIS and Rs 25.29 lakh for PFMS.

1.2 Objective, scope and methodology of Audit

Audit of the acquisition and implementation, along with system audit of FMIS and PFMS was conducted between December 2005 and March 2006, and for evaluation of the various components, the globally accepted frame work

COBIT⁹¹ was used. In addition to Forest HQ at Thiruvananthapuram, one Regional Office*, three Circle Offices*, eight Division Offices*, three Range offices* and one Forest School were covered in audit.

1.3 Audit observations on project management and system acquisition and implementation issues

1.3.1 Delay in entrusting the work of development of FMIS

Though the Department initiated steps to develop FMIS as early as in June 1998, Audit observed that the agreement was executed with the selected firm M/s RITES only on 20 April 2001 after a delay of nearly three years. As such FMIS could not be operationalised during the Project period which ended on 31 December 2003.

Government stated (August 2006) that the delay was due to cancellation of first shortlist of consultants as per direction of World Bank and preparation of new shortlist after issuing fresh notification. But it is a fact that the Department took 21 months to prepare the first shortlist, another six months for the second shortlist and a further six months to execute the agreement. Thus the process of selection itself covered nearly 50 *per cent* of the project period.

1.3.2 Delay in developing the PFMS/FMIS by M/s RITES

The development of software was entrusted to M/s RITES, New Delhi, on 07 December 1998 at a cost of Rs 22 lakh. The period of contract was two years including post implementation support for one year. Though there was no progress in the development of software till July 2000, the scope of the software to cover all areas of accounting was further extended on an additional payment of Rs 3.29 lakh. Accordingly, the period of contract was extended from two years to 33 months including 12 months post implementation support. But it was installed only during November 2002 and put to use for rendering accounts to the Accountant General only from April 2003. Due to delay of more than four years in developing and operationalising the software, the System could not be used for rendering half-yearly progress reports of the Project to World Bank.

Unnecessary delay in developing and operationalising PFMS

Undue delay was noticed in all stages of development of FMIS

Though M/s RITES failed to deliver PFMS within the stipulated period, affecting its utility for the intended purpose, it was seen that the same firm was entrusted with the work of developing FMIS. Audit observed that the delay also persisted in the Development of FMIS leading to non-operationalisation of FMIS during the Project period.

⁹¹ Control Objectives for Information and related Technology

* Southern region, Kollam

♦ Central Circle, Thrissur, Southern Circle, Kollam and Wild Life Circle, Palakkad

▼ Territorial Divisions at Thiruvananthapuram, Punalur, Thrissur and Palakkad; Wild Life Division, Parambikkulam, Timber Sales Division, Punalur and Palakkad and Social Forestry Division, Kollam

▲ Pathanapuram, Kulathupuzha, Wadakkancherry

As per the agreement executed with M/s RITES on 20 April 2001 the development of FMIS was to be executed in four phases.

Phase 1–Information Management needs assessment within KFD (3 months)

Phase 2- Design and Development of FMIS (9 months)

Phase 3-Operationalisation of FMIS in KFD (12 months)

Phase 4-Maintenance of the System after its operationalisation (24 months)

Though Phase 2 was to be completed in nine months *i.e.* by 13 May 2002, M/s RITES demonstrated the final prototype only during November 2002. The submission of DDD[#] was delayed by nearly three months and final prototype by six months. Though the firm did not seek extension of Phase 2 before the stipulated date and made a written request only on 13 January 2003, the duration of phase 2 was extended (March 2003) by six months stating that the delay had happened in order to enhance the quality of the FMIS software.

Payment was made without effecting recovery of Rs 5.55 lakh towards penalty for delay

As per the special conditions of the contract a penalty of one *per cent* of the total contract value was to be levied for each month of delay or part thereof subject to a maximum of 10 *per cent* of the total contract value. Audit observed that the payment of the third instalment of Rs 18.50 lakh, being 20 *per cent* of contract value, without effecting recovery of Rs 5.55 lakh towards penalty at one *per cent* of the contract value for each month of delay was irregular.

Government stated (August 2006) that the delay in completion of PFMS was justifiable because the scope of the contract was extended. The reply is not tenable as a codicil agreement was signed only during July 2000, whereas the firm was required to install the software during December 1999. As regards the delay in developing FMIS, Government stated that the procedural/departmental delays were unavoidable and the system required full acceptance by the KFD. The reply is not acceptable as the project was initiated in June 1998 and the department had sufficient time till July 2001 to formulate their requirements.

1.3.3 Failure to fulfil contractual obligations

Consultants failed to integrate PFMS software with FMIS software

In terms of the agreement, M/s RITES had the obligation to integrate the PFMS with the FMIS. Though the development of PFMS had been completed and all payments effected by the Department, it is still loaded in stand-alone computers operating with Personal Oracle 8i as the back end. As the Consultant failed to integrate the PFMS as a module of the FMIS, developed with Oracle 9i as the back end operating in Windows network version, it could not be effectively put to use for sharing data. As such, the Cheque drawing officers cannot verify the availability of Budget provision while passing the bills for payment and the details of estimate entered in PFMS are to be again entered in Plantation Management Module of FMIS.

CCF (FMIS) stated (June 2006) which was also endorsed by Government (August 2006) that PFMS operating on Oracle 9i had since been developed

[#] Detailed Design Document

and integrated with FMIS. However, a verification of the system at DFO, Thiruvananthapuram revealed that PFMS was still installed in a separate server and only a provision for uploading the estimate into FMIS was provided and there was no integration of the packages.

1.3.4 Improper extension of contract for FMIS

No justification for the additional payment of Rs 12.80 lakh towards maintenance warranty

Though M/s RITES was to develop and operationalise FMIS by 13 April 2004 including one year post implementation support, an additional agreement had been executed on 21 February 2006 for extension of the period of contract from 36 months to 62 months at an additional payment of Rs 12.80 lakh. It was observed that the extension of contract from 01 August 2005 was irregular as the Department stated in letter dated 18 January 2006 addressed to M/s RITES that the delay in implementation of FMIS was due to the Consultant's inefficiency leading to the development of poor quality software and their inability to rectify the mistakes pointed out by the clients. Hence there was no justification for the extension of contract involving an additional payment of Rs 12.80 lakh towards modification and maintenance support.

The extension of contract during February 2006 with retrospective effect from 01 August 2005 was also not in order, as two-third of the extended period was already over by the time the agreement was executed and the Department would not benefit from the services of additional programmers for one year promised by the consultants at the proposal stage.

Government stated (August 2006) that the extension of the contract for FMIS was justifiable because M/s RITES had to provide new deliverables like FDA Module, Retail Sales Module, security issues, large database management, etc., in addition to maintenance and these were not envisaged in the original contract. The reply indicates the failure to define the user needs of the department while finalizing the System Requirements Specification(SRS).

1.3.5 Irregular Appointment of FMIS Manager

Appointment of FMIS Manager was irregular and the Department did not benefit from the expenditure of Rs 62.45 lakh towards remuneration

The agreement for KFP stipulated that a Forest Information System Manager should be appointed for the entire project period for rendering technical assistance to the Department in the development of FMIS. The services of a Programmer from M/s RITES was spared for appointment as FMIS Manager with the generally assigned task of coordinating with KFD and various consultancies engaged to facilitate the development of FMIS. A remuneration of Rs 11.92 lakh was payable to the Consultant during the first year. Enhanced payment based on cost of living index applicable to Central Government employees, was also payable during the extended period. Audit observed that as the Expression of Interest for the post of FMIS Manager published in January 1998 was primarily for engaging an individual, not a firm/Company the selection of a firm instead of an individual, resulted in the payment of enhanced salary including *pro rata* overhead charges of M/s RITES.

Terms of agreement for engaging the FMIS Manager signed on 07 December 1998, stated that M/s RITES shall be disqualified from providing goods, work or services for any project resulting from or closely related to its service. However, the same Consultant (M/s RITES) was entrusted with the contract

for development of PFMS as per another agreement executed on 07 December 1998. This was irregular as the Department had already shortlisted M/s RITES for the development of PFMS. While rendering services as FMIS Manager, M/s RITES was also entrusted the work of development of FMIS Software as per agreement dated 20 April 2001. This agreement was also irregular as it was the responsibility of M/s RITES, functioning as FMIS Manager to ensure on behalf of KFD that trouble free software was delivered by M/s RITES.

The contract provided for seeking extension of the contract only on satisfactory discharge of work by the Consultant. A review of Annual Plan submitted by him revealed that the target dates were not synchronised with the dates for development of software and hence the Department could not install the software within the project period. But the Department went on extending the contract without scrutinising the Plans and progress reports or assessing his performance.

Government stated (August 2006) that the observation of Audit was noted and required to be examined in detail. Further remarks are awaited. As regards extension of contract, Government stated (August 2006) that the performance of the FMIS Manager was satisfactory to the Department and replacement of such a person would have adversely affected the progress of the FMIS programme. As observed in Audit and admitted by Government, there was a delay in developing PFMS and FMIS. This evidently showed that FMIS Manager failed to monitor the development of the System.

Thus by entrusting the contract for development of software as well as the responsibility for enforcing the timely submission of deliverables to the same firm, in violation of the terms of contract, the Department did not benefit from the consultancy for FMIS Manager though an expenditure of Rs 62.45 lakh was incurred from January 1999 to December 2003 towards remuneration.

1.4 Deficiencies in the implementation of FMIS

1.4.1 Absence of testing strategy

There was no record of testing of PFMS adopting well defined testing strategy

The Consultant submitted the Pilot version of the software during November 2000 for trial run. But an Evaluation Committee for testing the software was constituted only during February 2001. Further, due to delay in procurement of Oracle RDBMS, the testing of Software at pilot sites could not commence till July 2001. There was no record of testing the software thereafter adopting a well-defined testing strategy. However, full payment of contract value was effected by January 2003.

Premature payment of contract value before testing and operationalising FMIS was irregular

PFMS was initially developed on Client Server model. As servers were not installed at Pilot account rendering units, PC version of PFMS was developed to install it in stand-alone computers. Though Client server version was to be developed and tested later, there was no record of development and testing the Client Server version.

Terms of Reference (TOR) which formed part of the agreement executed on 20 April 2001 stipulated that FMIS should be tested with 3 months live data. The reports relating to testing submitted by the developers showed that data could not be entered in many input forms for want of input data and most of the outputs could not be generated. Under the circumstances there was no basis for acceptance of the software. Moreover, hardware required for operationalising the FMIS at all subordinate offices up to Range level and Oracle software was installed only during March 2004. However, payment for Phase 3 (Rs 18.50 lakh) was released during March 2004. Premature payment of contract value during March 2004 before testing and operationalising FMIS at all locations was irregular and resulted in the delay in rectifying problems leading to extension of contract.

Government stated (August 2006) that the payment was made only after satisfying the agreement conditions for payment viz., completion of specified works and submission and approval of respective reports. The reply is not tenable as the primary conditions for payment as per Phase 3 of the TOR viz., testing the modules at pilot sites with three months live data and implementing FMIS at all locations, etc., were not met before making the payment.

1.4.2 Failure of Implementing Officers

Instructions on completion of data entries/feed back was not adhered to by Implementing Officers

The Conservators of Forest were designated (April 2002) as the Implementing Officers of the FMIS, PFMS and GIS in offices under their jurisdiction. Five officers at Forest HQ were designated as Implementing Officers for offices functioning in the Forest HQ. A post of CCF (FMIS) was also created (July 2003) to supervise the implementation of FMIS. A scrutiny of files relating to the implementation of FMIS revealed that:

- (i) Apart from endorsing the directions of HQ to Divisions, the Circle level Implementing Officers did not take any action to assign the responsibility for internal reporting to any particular person to ensure prompt feedback to HQ. The Divisional Officers also endorsed the circular to Ranges and Section Clerks in the Division. These officers failed to monitor the prompt receipt of feed back.
- (ii) The Implementing Officers did not set any time frame for completing data entry in each Range Office and merging of data at Divisions/Circles.
- (iii) The Implementing Officers at Forest HQ also failed to ensure complete data capture in relation to the Modules applicable to them.

This exposed the weakness of the internal control system in the Department in the monitoring of time schedules set by HQ/Circle Office. Frequent change of CCF in charge of FMIS during the course of implementation also contributed to the lopsided implementation of the System.

Government stated (August 2006) that as a separate unit of staff was not created for implementation of the system at all levels, there was difficulty in adhering fully to the time schedules prescribed by various offices. This

avertment is not tenable as data entry operators were engaged on daily wage basis for the purpose.

1.4.3 Idling of computers procured for FMIS

Servers and thin clients costing Rs 96.08 lakh were idling since November 2003 due to delay in operationalising FMIS

Between 2000 and 2004 the Department procured 63 Servers, 403 personal computers (PCs) and 178 thin clients and accessories such as printers, UPS, etc., costing Rs 4.45 crore for the development and implementation of FMIS. The details of additional PCs procured during 2005-06 at Circle level were not available at Forest HQ. The servers and thin clients costing Rs 96.08 lakh procured during November 2003 were idling at different offices including HQ due to delay in operationalising FMIS.

Government admitted (August 2006) that the thin clients were not being utilized and stated that once the FMIS software is fully made operational, they would be utilized.

1.4.4 Failure to introduce Office Automation at Forest HQ

Office intranet was not set up to exchange information among users

In terms of the agreement with M/s.RITES, an Office Intranet was to be set up at HQ as part of FMIS. However, only a single Local Area Networking (LAN) comprising one High-end server, one Mid-range server and one Low-end server with facility to connect 149 users had been set up at HQ. But no Intranet had been set up with facility to exchange information among users. No useful purpose is served by procuring High-end server costing Rs 3.48 lakh and Oracle 9i with 30 user licence at a cost of Rs 5.73 lakh and additional networking at a cost of Rs 9.70 lakh in the absence of facility for information exchange.

Government stated (August 2006) that the hardware facilities required for a full fledged networking system was in place but only partially utilized as the FMIS was in the operational stage and the required technical manpower was not in position.

1.4.5 Deficiencies in Human Resource Development

Though training is imparted to existing staff to upgrade their skills to fulfil the job requirements, the Department did not revise qualifications for recruitment to the post of Clerk, Forester/Range Officer, etc., so as to induct computer skilled persons into service. It was noticed during audit at Forest School at Arippa that FMIS did not form part of the course content in their training programmes for new recruits/promotees. The Department had not devised a plan to impart training to nearly 134 existing typists for effectively utilizing their service for data entry and discontinue the practice of engaging daily wage computer operators.

Government stated (August 2006) that action was being taken to prescribe computer qualifications for entry level staff and that the feasibility of making this criterion for promotions were being examined by the department. It was also stated that FMIS is being included in the course curriculum of the training programmes.

1.4.6 Absence of regular IT support team

No regular IT support team to oversee the implementation of FMIS

FMIS Manager, appointed to oversee the implementation of FMIS was relieved on 31 December 2003 before operationalising the FMIS. No technical staff was appointed in the Department in his place to oversee the implementation of FMIS and to safeguard IT assets. Though the Department was having large number of servers/computers no person had been designated as System Administrator, Database Administrator and Network Administrator. A proposal (July 2005) for creating 33 technical posts and 24 ministerial posts, in addition to FMIS Manager, was awaiting sanction of Government.

1.4.7 Engaging of Data Entry Operators without justification

Engaging Data Entry Operators incurring expenditure of Rs 43.48 lakh lacked justification

During February 2001 and May 2001 the Chief Conservator of Forests (WBP) issued directions to the effect that no daily wage operator should be employed to operate the computers. It was also stressed that the intention of supplying computers was to create awareness among them before FMIS was finally implemented and consequently engaging of Computer Operators would act as a deterrent for FMIS implementation. However, the CCF (WBP) sanctioned funds amounting to Rs 43.48 lakhs for engaging Data Entry Operators (DEOs) for FMIS data entry work during 2004-05 and 2005-06 contrary to earlier decision.

In view of the fact that there was only partial data entry, that too in limited number of modules as noticed during audit and the absence of document relating to the extent of FMIS data entered by the DEOs engaged, the expenditure was not justified.

Government stated (August 2006) that the observations of Audit were noted and action had been initiated for getting the justifications from the concerned Divisional Officers. It was also stated that the progress of data entry work would be monitored at the FMIS wing level. Though the objective of engaging DEOs was to complete back data entry by 31 July 2004, there was only skeleton data entry in different modules as brought out later.

1.5 Audit observation on system development issues

1.5.1 Incomplete data in different modules.

FMIS comprises 15 Modules covering different and important areas of operation. Audit conducted during January/February 2006 revealed that data entry was only partial in 9 modules and there was no data in 6 modules in the Circle/Division /Range offices covered in audit.

As the Department did not evolve a detailed plan for module-wise implementation of the System the objective of MIS modules is defeated. The implications of the partial data entry in some of the modules are as follows:

1.5.1.1 Personnel Information System Module

The Module was developed to maintain easily accessible records relating to 6000 employees as the information such as strength of staff in different units, the period that a person had worked in a particular post, the persons who will

be retiring, etc., is scattered in different offices and it takes a lot of time to gather the details. It was seen that there was only partial data entry in the Circles/Divisions/Ranges covered in audit as shown in Appendix I. No attempt was made to collect Range level data by the Divisions, Division level data by the Circles and Circle level data by the Regional Offices and entire data by HQ. As such useful information such as vacancy position as on date, staff position, post wise seniority list, employees due for retirement, etc., could not be generated out of the System.

1.5.1.2 Offence Information System module

The System was developed to record and monitor the status of offences under Kerala Forest Act as it was time consuming to monitor the progress of the cases through quarterly progress reports. It was seen that there was only partial data entry in the Range Offices covered in audit as shown in Appendix I. As such the reports generated did not tally with the reports based on manual register and no useful reports could be generated out of the system. As the Division/Circle offices did not attempt to collect data from ranges to monitor the disposal of cases, the number of cases pending charging, number of days left for charging the case, details of *thondy* disposed, etc., could not be ascertained for appropriate follow-up action.

1.5.1.3 Court Cases Monitoring System Module

The System was developed to closely watch the progress in filing counter affidavits and appeals to conduct cases effectively and also to spot the number of petitioners claiming the same area at a time. It was seen that there was only partial data entry in the Divisions as shown in Appendix I and the primary data such as date of filing counter affidavit, reason for not filing, date of next hearing, etc., crucial for effective monitoring was not seen entered/updated. The Circle Offices and HQ responsible for monitoring court cases did not have any data relating to court cases. Hence the reports such as Division-wise court cases pending, age-wise analysis of pending cases, cases pending counter affidavit, number of cases against a particular survey number, etc., could not be generated.

1.5.1.4 Fire Protection System Module

Fire protection activities such as clearing fire lines, engaging fire watchers and preparation of related estimates are to be carried out during December –May every year. But due to shortage of funds the work is carried out on priority basis. The System was developed for easy identification of fire prone areas and the extent of fire tracing done. It was seen that there was partial data entry in Range Offices as shown in Appendix I. The essential data such as the details of estimates, past incidence of fire, loss due to fire, etc., were not captured to generate useful reports. The Modules in Division/Circle Office did not contain any data. Hence the primary objective of identification of fire prone areas was not achieved.

1.5.1.5 Sales Management System Module

Income from sale of timber and firewood constituted the major part of revenue from forest (Rs 100 to 160 crore). The Module was developed to capture the

details of marking and felling of trees, lotting, auction and monitoring the current stock position, processing of bills, generating monthly returns, etc., at Range Office and Sales Depots with a view to reduce manual work and to avoid error in calculation. It was seen that in Range Office, Pathanapuram, the details of marking of trees were seen captured, but the details of felling were not entered. Due to partial data entry, the module could not be put to use to generate returns or to process bills. Further module wise details are given in Appendix I.

Government stated (August 2006) that the FMIS modules were still in the implementation stage and that a time frame had been prepared for data entry in each module and steps were being taken to ensure completion of data entry at the earliest.

1.5.2 Absence of data in certain modules

There was absolutely no data entry in the following six modules in any of the offices covered in audit.

- 1 Natural Forest Management System
- 2 Civil Infrastructure System
- 3 Industrial Raw Material & NWFP System
- 4 Participatory Forest Management System
- 5 Plantation Management System
- 6 Research Project Management System

In the absence of data entry in these modules the Department could not ascertain the extent of different types of forest area, area leased out, lease rent due, extent of plantation, expected yield and revenue from the plantations, total quantity of industrial raw materials agreed to be supplied and actually supplied, etc.

Government attributed (August 2006) this to the absence of basic data and errors in the modules and stated that the observations made by Audit were noted and that action was being taken to complete data entry within a time frame.

1.5.3 Failure to install Geographical Information System module

GIS module could not be implemented

The objectives of FMIS included the development of user friendly spatial data analysis modules using Geographical Information System (GIS) tools. This involves digitization of toposheets with satellite imageries for various Divisions/Circles. Plantation, Natural Forest and Civil Infrastructure modules should have clearly defined interfaces for GIS. The Module could not be implemented till date, as M/s RITES failed to deliver any support for operationalisation at field level. The GIS module developed was also not

Operating System (OS) independent and necessary connectivity to other FMIS Modules had not been provided.

Government admitted (August 2006) that the GIS module was not fully operationalised and added that an OS independent module would be released shortly.

1.5.4 Under utilization of PFMS

PFMS facilitates preparation of vouchers from bills submitted, verification of estimates/allotments and accounting of receipts and also adjustment of advances issued for various purposes. The System is intended to replace manual registers such as Letter of Credit Register, Work and Estimate Registers and Cash Book and to prepare monthly accounts to be rendered to Accountant General (Accounts and Entitlements). Audit of the utilisation of PFMS revealed a number of lapses as follows:

1.5.4.1 Absence of instructions to users of PFMS

Computerization of accounts would involve discontinuance of the maintenance of Cash Book, Work Register, Estimate Register, Letter of Credit Register, etc., and forwarding of computer generated monthly accounts and connected schedules to the Accountant General. But the Department had neither issued any instructions nor taken necessary steps to amend relevant rules in the Acts/Codes/Manuals.

Government stated (August 2006) that the System had not yet stabilised for the discontinuance of conventional method of financial accounting and parallel run was in progress. In the absence of specific instructions Sub Offices are depending on manual accounting, making PFMS largely irrelevant except for sending monthly accounts.

1.5.4.2 Non-utilization of the PFMS software for the intended purpose

PFMS software was not utilised for the intended purpose

PFMS envisaged transfer of data from Division to Circle office and from Circle to Regional Office and finally to Headquarters office after merging data at Division, Circle and Regional level. Despite specific direction of CCF (FMIS) issued in October 2004 to forward Circle level merged data, the officers did not resort to electronic transfer of data for such consolidation. Even the Forest HQ (Statistical wing) was using MS Excel to consolidate the progress reports received from the lower formations. This involved repeated data entry at various stages defeating the very purpose of computerization. Even though the computerization of accounts cost Rs 1.73 crore the top management did not take any step to utilize the software for the intended purpose.

Government stated (August 2006) that the software package developed for PFMS did not have provision for data merging at various levels and data integration is envisaged only at Chief Conservator of Forests (Development) level at forest headquarters. It was also stated that consolidation of data at State level and generation of reports on Plan and Non Plan could not be carried out as the System Administrator and System Analyst were not in place. The reply is not acceptable as the back up and restore module in PFMS facilitate back up of data to be submitted to the next level office and the Conservator of Forest's office can restore the data received from lower formations keeping in view the hierarchical reporting system. Moreover the Circular issued by the CCF(FMIS) in October 2004 also stipulates such merger of data

1.5.4.3 Delay in rendering accounts.

Accounts rendering units did not make proper use of PFMS

All Forest Divisions are required to submit accounts for each month to Accountant General (A&E) by the 10th of the succeeding month. The PFMS software was conceived as an on-line system where the details of vouchers are to be entered as and when a transaction takes place. But all the accounts rendering offices covered in audit were writing the Cash Book manually and thereafter feeding the data into the computer. For example there was no data relating to January 2006 at DFO, Punalur as on 12 January 2006. In the absence of daily data entry of transactions and its confirmation by the Supervisor on the same day, all the schedules to be sent along with the accounts could not be generated through the system and the schedules like schedule of work expenditure and the statement of forest advances were word-processed and sent along with the computerized accounts.

There was substantial delay in rendering monthly accounts to AG undermining the primary objective of PFMS

Due to the failure to enter transactions on a day to day basis there was substantial delay in the receipt of monthly accounts in the Accountant General's Office from all the 99 accounts rendering units. The delay was between 10 and 20 days on 217 occasions, between 20 and 30 days on 39 occasions and the delay exceeded 30 days on four occasions during the years 2003-04 and 2004-05. The delay in sending the monthly accounts persisted even during 2005-06 and the accounts for the period July to December 2005 were delayed on three or more occasions by 36 accounts rendering units including 12 offices which delayed the monthly accounts for all 6 months.

Government stated (August 2006) that the lapses of the accounts rendering officers were seriously noted and passed on to the Chief Conservator of Forests (Development) for taking immediate action.

1.6 Audit Findings on General IT Controls

1.6.1 Absence of long term plan

There was no documented policy, approved by top management, regarding IT objective or long term IT Plan. The development of FMIS was in fact a pre-condition set by International Development Agency for extending credit to Kerala Forestry Project.

Government stated (August 2006) that action was being taken to formulate an IT policy for the Forest Department based on the new forest policy to be framed for the department keeping in view the IT policy of the Government of Kerala.

1.6.2 Absence of IT Steering Committee

An IT Steering committee comprising representatives of senior management, user management, and IT functions was not constituted to oversee the IT functioning.

Government stated (August 2006) that a monitoring committee at CCF level was in place for overall monitoring of consultancies awarded and that it needed reconstitution.

1.6.3 Absence of IT Strategy

The development of FMIS covering all areas of operation in the Department was taken up as a part of Kerala Forestry Project. But no proper feasibility study was conducted for computerization of the Department down to Division level. According to SRS computerisation of different areas was taken up keeping in view the several constraints faced by the Department in collecting information from the subordinate Offices scattered throughout the State.

The System was initially designed to computerize Offices up to Division level. It was only at the prototype stage that the need for Range level data capture was thought of. This involved redesigning of the DDD to permit data entry at Range level causing delay in implementation.

Though the terms of reference as well as agreement for the development of software stipulated that the modules for Bio Diversity Information, Non-Forest and Private Area Information should be developed, the modules were not attempted stating that it was more difficult and these were not required at initial stage. In the absence of an IT strategy, Department did not have a clear idea even regarding scope of the system.

1.6.4 Absence of policy for Change Management.

Between March 2004 and December 2005 nine versions of FMIS were released, with a direction to test software within the dates specified therein. These directions are contrary to the standard procedure where testing should precede acceptance. In the absence of responses from all Implementing Officers, it is evident that the previous versions 1.1 to 1.6 were not fully tested before releasing the latest version 1.7 to Implementing Officers.

The Manual for monitoring Software revision, deployment at all locations and documentation of FMIS submitted by M/s RITES on 27 March 2004, *inter alia*, stipulated that the Department had to nominate an officer who would be responsible for the release of new versions of the software and for monitoring the versions of the FMIS software running at various offices. But the above directions were not followed by the Department.

While installing the software, the FMIS Specialists, a group of trained persons attached to Circle offices, failed to ensure that data already stored using an earlier version was restored using the later version leading to loss of whatever data entered earlier. This necessitated fresh data entry all over again. The release of successive versions at shorter intervals resulting in loss of data not only has an adverse effect on the users but also hampered implementation.

Government stated (August 2006) that a systematic procedure for the monitoring of software revision, release of new versions and implementation status at all locations in KFD could be monitored only when the System Administrator and System Manager of FMIS were in place.

1.6.5 Absence of Logical Access Control

Even daily wage data entry operators accessed the system using user id and password

Even though PFMS/FMIS had four layers of users and there was provision to allocate roles to each user type, the provision was seldom used. In some offices, the Clerk or even the daily wage computer operator accessed the system using the user-id and password of the super user. In some offices, the Clerk used the user-id and password of the Head Accountant/Junior Superintendent to access the system. The User Information Report did not contain any data relating to access rights of DEOs. The users of the PFMS software apparently were not aware of the risk that sharing of user-id and password would undermine the effectiveness of monitoring because the individual accountability is lost.

Government stated (August 2006) that logical access controls could not be made fully operational as the system requires familiarity among the users and that in the case of PFMS, strict instructions had been issued to all accounts rendering offices to practice this system. The reply is not tenable as Access Controls are to be introduced right from the date of installation of FMIS.

1.6.6 Absence of procedure for back up and restoration

No back up and restoration procedure resulting in loss of data

Every organization should have a proper strategy for back up and restoration of data keeping in view business requirements to resume business without disruption in the event of a disaster. Though the PFMS and FMIS contain provision for back up it was seen that the users failed to follow prescribed procedure. For example, no back up was taken in DFO, Punalur as Tape drive or CD writer had not been provided and the file size of the back up was too large to be copied into a floppy. PFMS was not put to use in DFO, Thrissur, from October 2005 onwards due to System failure and absence of back up to restore the data in another PC, leading to preparation of accounts manually.

Government stated (August 2006) that necessary hardware had been provided at all locations for taking back ups and training imparted to all specialists on restoration of data in case of eventuality. As there are only 32 FMIS specialists and FMIS is deployed in 188 locations, more staff need to be trained in this area.

1.7 Conclusion

FMIS/PFMS which were developed as part of the Kerala Forestry Project were plagued by undue delays in implementation. Due to failure of the Department in selecting a firm having adequate exposure in GIS and experience in software development, FMIS could not be fully operationalised so far. Consequently, the hardware procured for the purpose was idling and the management could not generate useful reports such as list of forest area leased out, forest vegetation types, list of endemic floras/faunas, post-wise vacancy position, employees due to retire, Division-wise number of offences pending charging, number of days left for charging, Division-wise Court cases pending, number of cases at counter affidavit stage and list of fire prone areas. Thus, despite investing Rs 14 crore the constraints in collecting information

still remained making the usefulness of the software very limited.

1.8 Recommendations

- All modules in FMIS should be thoroughly tested and accepted by adopting a standard documented testing methodology.
- All the 15 Modules in FMIS and PFMS should be interlinked with common master tables and with facility for online updating related tables.
- Draw up a module-wise implementation plan to operationalise FMIS after capturing essential back data with proper validation in respect of all offices upto range level
- Long term IT Policy should be framed and IT Steering Committee constituted to oversee IT functioning.
- Regular IT support team should be set up with adequate technical posts to reduce dependence on consultancy.
- Steps should be taken for the effective use of PFMS to discontinue manual records such as Cash Book, Works Register, Estimate Register, etc., and also to consolidate MIS at HQ level.
- Back up procedure should be strengthened.