



FIFTEENTH KERALA LEGISLATIVE ASSEMBLY

**COMMITTEE
ON
PUBLIC UNDERTAKINGS
(2023-2026)**

FORTY SIXTH REPORT
(Presented on 21st March, 2025)

**SECRETARIAT OF THE KERALA LEGISLATURE
THIRUVANANTHAPURAM
2025**

FIFTEENTH KERALA LEGISLATIVE ASSEMBLY

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FORTY SIXTH REPORT

On

**Kerala State Horticultural Products Development
Corporation Limited, Kerala State Warehousing
Corporation Limited & Kerala State Coir
Corporation Limited**

**(Based on the Reports of the Comptroller and
Auditor General of India for the year
ended 31st March, 2019)**

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**COMMITTEE ON PUBLIC UNDERTAKINGS
(2023-2026)**

COMPOSITION

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Legislature Secretariat:

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Shri Venugopal R., Joint Secretary

Shri Anil Kumar B., Deputy Secretary

Shri Mohanan O., Under Secretary.

INTRODUCTION

I, the Chairperson, Committee on Public Undertakings (2023-2026) having been authorised by the Committee to present the Report on its behalf, present this 46th Report on Kerala State Horticultural Products Development Corporation Limited, Kerala State Warehousing Corporation Limited & Kerala State Coir Corporation Limited based on the report of the Comptroller and Auditor General of India for the year ended 31st March, 2019 relating to the Public Sector Undertakings of the State of Kerala.

The aforesaid Report of the Comptroller and Auditor General of India was laid on the Table of the House on 10-6-2021. The Report, besides other things in their findings, brought to light some functional irregularities relating to the Kerala State Horticultural Products Development Corporation Limited, Kerala State Warehousing Corporation Limited & Kerala State Coir Corporation Limited. The Committee, in connection with the perusal of the report, took notice of the comparability of the audit paragraphs pertaining to such irregularities and decided to examine them altogether. The consideration of the audit paragraphs included in this report and the examination of the departmental witness in connection there to were made by the Committee on Public Undertakings (2021-2023) at its meetings held on 4-9-2023.

This Report was considered and approved by the Committee (2023-2026) at its meeting held on 18-3-2025.

The Committee place on record its appreciation for the assistance rendered to them by the Accountant General (Audit), Kerala in the examination of the Audit paragraphs included in this Report.

The Committee wishes to express thanks to the officials of the Agriculture and Industries Department of the Secretariat and the Kerala State Horticultural Products Development Corporation Limited, Kerala State Warehousing Corporation Limited & Kerala State Coir Corporation Limited for placing

the materials and information solicited in connection with the examination of the subject. The Committee also wishes to thank in particular the Secretaries to Government, Agriculture, Industries and Finance Department and the officials of the Kerala State Horticultural Products Development Corporation Limited, Kerala State Warehousing Corporation Limited & Kerala State Coir Corporation Limited who appeared for evidence and assisted the Committee by placing their views before the Committee.

Thiruvananthapuram,
21st March, 2025.

E. CHANDRASEKHARAN,
*Chairperson,
Committee on Public Undertakings.*

REPORT

ON

Kerala State Horticultural Products Development Corporation Limited (Hortcorp), Kerala State Warehousing Corporation Limited (Warehousing Corp), Kerala State Coir Corporation Limited (Coir Corp)

Audit Paragraph (2018-19)

Compliance Audit Observations relating to Public Sector Undertakings (other than Power Sector)

5.1 Compliance to the Government of Kerala guidelines for implementation of Enterprise Resource Planning initiatives by Public Sector Undertakings

Non-adherence to GoK guidelines for implementing e-governance initiatives affected timely implementation of ERP systems in seven PSUs. Five PSUs could not derive any benefit even after incurring ₹1.15 crore due to non-completion of their ERP systems.

The Government of Kerala (GoK) issued (September 2009) guidelines for implementation of e-governance initiatives in the State, detailing therein the procedures to be followed in the development of software systems. In this backdrop, Enterprise Resource Planning (ERP) systems¹ implemented after September 2009 by 8 randomly selected Public Sector Undertakings (PSUs) out of 17 were examined in order to assess the level of compliance to the guidelines by these PSUs. Of the selected PSUs, ERP systems were commissioned in Kerala State Coir Corporation Limited (COIR CORP), Travancore Titanium Products Limited (TTPL) and Travancore Cochin Chemicals Limited (TCCL) with varying degrees of success. Implementation was in different stages of completion in Kerala State Horticultural Products Development Corporation Limited (HORTICORP), The Kerala State Cashew Development Corporation Limited (CASHEW CORP), Kerala State Warehousing Corporation (WAREHOUSING CORP) and Kerala

¹ A packaged business software system that allows an enterprise to automate and integrate the majority of its business processes, share common data and practices across the entire enterprise and produce and access information in a real time environment.

Electrical and Allied Engineering Limited (KEL). The implementation of ERP system was a failure in Foam Mattings (India) Limited (FOMIL). The status of ERP implementation in the selected PSUs is given in the **Appendix 7**. The Audit findings in this regard are discussed below:

5.1.1 Leadership and Coordination of the implementation process

The e-governance guidelines (the Guidelines) stipulated that organisations implementing e-governance projects shall appoint a nodal officer who, even if not from the IT wing, should at least be not more than one level below the Head of the Organisation. As per the guidelines, the Nodal Officer plays a pro-active role in implementation of ERP systems and is responsible for change management in the event of any adverse situation.

Audit, however, observed that except TCCL, none of the PSUs instituted a formal mechanism for ensuring involvement of top management in the implementation of ERP. Three PSUs (CASHEW CORP, WAREHOUSING CORP and KEL) appointed nodal officers from the lower managerial level as coordinators and the ERP projects in these PSUs were yet to be completed long after their projected target dates due to absence of active role of the top management. For instance, in two PSUs, development process was stalled for long periods of time² merely due to failure of the PSUs to test the beta versions³ of software modules. In the case of TTPL and COIR CORP, the role of Nodal Officer was entrusted to Manager (IT) and System Analyst respectively. Such an arrangement was, however, absent in FOMIL and HORTICORP and the ERP systems in these PSUs were not yet completed (November 2019).

The GoK replied (September/ October 2020) that WAREHOUSING CORP appointed a nodal officer from the lower level due to lack of technically qualified personnel. HORTICORP appointed an Accounts Officer as nodal officer.

2 WAREHOUSING CORP-January 2014 to March 2017; CASHEW CORP-December 2011 to October 2016.

3 An early version of software made available for testing and feedback.

The reply only validates the audit observation that non-appointment of properly qualified and suitably senior nodal officers as required in the Guidelines affected the timely implementation of ERP systems in the PSUs.

5.1.2 Development of Detailed Project Proposal

The Guidelines stipulated that all IT enabled projects should invariably have a detailed project proposal (DPP) prepared either in-house or by taking external help from a Total Solution Provider⁴ (TSP)/ professional consultancy agency. The proposal shall consist of User Requirements Specification (URS), Functional Requirements Specification (FRS⁵), Technical Analysis and an Implementation Plan. None of the PSUs, however, prepared DPPs/ its components resulting in the following issues:

5.1.2.1 Non-preparation of URS and FRS

As per the Guidelines, URS and FRS should be prepared by functional experts within the organisation by defining the user requirements exhaustively and practically feasible process reforms should be included in the FRS. Tenders for software development should be invited based on FRS which, in turn, shall form the basis for development of System Requirements Specification (SRS) to be delivered by the Implementing Agency (IA).

Audit observed that since the user requirements were not exhaustively identified through URS by the PSUs themselves, no process reforms could be identified and brought out through FRS. The PSUs assigned the work of developing SRS to the IAs without identifying the user requirements and FRS. The SRS developed by the IAs, hence, suffered from the following shortcomings which affected the development process:

- WAREHOUSING CORP did not conduct URS study before inviting tender. It was observed that the Payroll and Warehouses modules developed by the IA (CDAC) at a cost of ₹ six lakh had unresolved issues such as integration of Leave Management System and Income Tax

⁴ So approved by GoK.

⁵ Defines how URS is to be achieved.

modules with Payroll module, incorporation of payment mode of electronic transfer, verification of balance sheet and linking user management with Payroll etc. for which the PSU paid an additional amount of ₹2.23 lakh to the IA. Also, the requirement of 'ability to make back dated accounting entries' in Accounts module was not included in the original requirements. Inclusion of this at a later stage caused delay in implementation. Audit also noticed that the requirement for various kinds of MIS reports at Head Office, Regional Offices and Zonal Offices was not finalised even though the project was nearing completion.

The GoK replied (September 2020) that the computerisation project was completed in March 2020.

The fact remains that the shortcomings in the development process due to non-adherence to the Guidelines delayed the completion of the project by eight years.

- In HORTICORP, the URS was not prepared either by the PSU or by the IA. As a result, the system implemented did not meet the requirements like entry of physical damage of stock in the software, entering physical stock manually and inclusion of many standard reports called for by the Head Office even after four years of implementation of the pilot phase. This is despite the fact that 88 per cent (₹66.91 lakh) of the contract amount has been incurred (October 2019) though as per the agreement, the IA was eligible for 50 per cent.

The GoK replied (September 2020) that URS and FRS were prepared by IA under the guidance of KELTRON officials due to absence of technical person in HORTICORP.

The reply was not acceptable as the PSU did not furnish the URS and FRS during the course of audit. Further, the additional documents furnished⁶ by the PSU in support of the GoK reply did not substantiate the claim regarding preparation of URS or FRS.

⁶ The PSU furnished copy of three documents, viz., User Manual (553 pages), project summary (15 pages) and transaction flow chart of District Procurement Centre, Thiruvananthapuram (two pages).

- Due to absence of exhaustive user requirement study in the beginning, COIR CORP had to bring in a number of additional features during the course of development for which an extra amount of ₹2.30 lakh was paid. Conversely, though the PSU did not require a Training module, the ERP system included it as it was not backed by a user requirement study. Thus, the module could not be utilised despite spending ₹0.50 lakh for it.

COIR CORP replied (June 2020) that FRS was prepared before publishing the tender and the same was included in the tender document. Also, the additional requirements were for meeting regulatory requirements like Goods and Services Tax (GST) which were not applicable when tenders were invited.

Audit, however, observed that COIR CORP provided an outline of functional requirements in the tender document which was not comprehensive due to absence of detailed user requirement study. Hence, additional features, which were functional in nature⁷, had to be included later.

5.1.2.2 Absence of Technical Analysis

As per the Guidelines, technical analysis shall be carried out based on the URS and different alternatives for connectivity, operational platform (Operating System, RDBMS⁸etc.) and risks associated therewith. Audit, however, observed that none of the PSUs carried out any detailed technical analysis of the proposed ERP systems which led to the following issues:

- HORTICORP, during the implementation of ERP proposed to link weighing machines located in outlets with the ERP system so as to facilitate real time data on stock position of vegetables and fruits. An amount of ₹5.20 lakh was expended for upgrading existing weighing balances at outlets with GPRS modem to make them compatible with the ERP system. However, the power backup capability of the weighing machines was not assessed. As a result, the ERP system could not be implemented in retail/ mobile outlets as the upgraded machines could be

⁷ The additional features included were GST features, creation of credit and debit notes, changes in leave and loan management, salary based on punching system, inclusion of three new reports, training personnel dashboard and despatch document/ workflow management.

⁸ Relational Database Management System.

used only for two to three hours continuously. Though the manufacturer of the weighing machine suggested additional battery backup to solve this, HORTICORP did not entertain the same as it needed additional investment.

The GoK replied (September 2020) that initially the entire system worked efficiently, but the efficiency of the system dropped due to power back up issues which could not be addressed due to huge investments.

The reply confirmed that there was absence of technical analysis which hindered online monitoring of sales in retail outlets.

- WAREHOUSING CORP decided (July 2017) to use the existing Tally financial accounting package even after implementation of the ERP system. Hence, generation and export of XML⁹ files from the Accounts Module of ERP system to the Tally package was attempted while developing the ERP system. It was, however, not found feasible and the Accounts Module had to be modified accordingly. The time and effort expended on integration of Tally with the ERP did not have the backing of any technical analysis. Further, the proposal for using Tally financial accounting package along with ERP system lacked justification as ERP system was implemented as an integrated software solution for materials, marketing and finance functions.

The GoK replied (September 2020) that the computerisation project was completed in March 2020.

The fact remains that the shortcomings in development process due to non-adherence to the Guidelines delayed the completion of the project by eight years.

- As per the Guidelines, free and open source based software¹⁰ should be used, wherever possible. Audit, however, observed that only CASHEW CORP used open source platform¹¹ in its ERP system while other PSUs

9 extensible Markup Language (XML) is a markup language that is designed to transport and store data in a specific format.

10 It is a type of computer software in which source code is released under a license in which the copyright holder grants users the rights to study, change and distribute the software to anyone and for any purpose.

11 PGSQL/Apache/Linux.

used proprietary¹² platforms¹³. Three PSUs (KEL, HORTICORP and WAREHOUSING CORP) spent ₹2.95 lakh towards license fee for proprietary software.

COIR CORP stated (June 2020) that MS SQL was selected due to its better data management and security features. FOMIL stated (June 2020) that technical analysis was not done due to non-awareness of procedure and absence of competent IT personnel.

The fact remained that the selection of proprietary software was not followed by any technical analysis.

5.1.2.3 Absence of Implementation Plan

As per the Guidelines, an implementation plan containing an estimate prepared on the basis of 'total cost of ownership', the expected benefits quantified based on higher revenue generation or cost reduction and the time schedule for the pilot phase and final rollout for the project shall be prepared.

Audit, however, observed that the PSUs did not envisage any definite objective for implementation of ERP systems. In the absence of the implementation plan, Audit could not assess the outcome or impact of ERP projects that were completed and the opportunity cost of those that were delayed beyond the target date.

5.1.3 Application Development and Project Rollout

5.1.3.1 Invitation of tender

As per the Guidelines, application development involving a third party agency shall be through a transparent tendering process based on FRS, detailed technical architecture, implementation plan and information security policy of Kerala State IT Mission (KSITM)/ Computer Emergency Response Team-IN

¹² It is a closed-source, non-free computer software for which the software's publisher or another person retains intellectual property rights, usually copyright of the source code and patent rights.

¹³ RDBMS like MS SQL and Oracle.

(CERT-IN). The PSUs, however, did not comply with this stipulation and entered into tendering with bare minimum specifications of the functional processes to be covered by the software.

5.1.3.2 Prequalification Criteria

The Guidelines stipulated that there shall be a prequalification process to shortlist the bidders. As per the Central Vigilance Commission (CVC) guidelines, the average annual financial turnover of the bidders is to be included as one of the prequalification criteria in the tender document to ensure the financial soundness of the firm. CVC guidelines also stipulated that all important tender evaluation criteria need to be specified in unambiguous terms in the bid documents so that the evaluation of bids can be made without any subjectivity.

Audit, however, observed that two PSUs (CASHEW CORP and WAREHOUSING CORP) did not include any prequalification criteria in the tender. Of the five¹⁴ PSUs which included prequalification criteria in the tender, the criteria stipulated by FOMIL, TCCL and COIR CORP did not include parameters for ensuring financial soundness of the bidders while that of FOMIL were too vague to ensure participation of only ERP vendors.

Similarly, WAREHOUSING CORP, COIR CORP and TTPL did not include the evaluation criteria, subsequently used for prequalifying the bids, in their tender documents.

The absence of or ambiguous prequalification criteria led to selection of inexperienced Implementation Agencies resulting in non-implementation/ delayed implementation of the ERP systems by the Implementing Agencies.

Both COIR CORP and TCCL stipulated successful implementation of the software in their respective sectors as a prequalification criterion which led to the selection of experienced IAs and successful implementation of the ERP.

¹⁴ HORTICORP awarded the work on nomination basis.

The GoK replied (September/October 2020) that WAREHOUSING CORP and TTPL carried out technical evaluation of the bids received and selected the lowest firm from the technically qualified bidders. The main focus of TCCL was on robustness of software, proximity of its transaction flows to the business practices and technical expertise of the bidder.

COIR CORP replied (June 2020) that the experience of the firm was stipulated as criteria instead of fixing turnover. Also, the financial statements of the last five years were scrutinised.

The fact, however, remains that the CVC guidelines were not complied with by the PSUs with adverse impact on implementation of the ERP systems.

5.1.3.3 Evaluation of bids and award of work

The following deficiencies were noticed in bid evaluation and award of work in the case of six out of eight PSUs:

- As per CVC guidelines (July 2007), tendering process is a basic requirement for the award of contract as any other method, especially award of contract on nomination basis, would amount to a breach of Article 14 of the Constitution guaranteeing right to equality. It was noticed that HORTICORP selected the IA in an arbitrary manner in a meeting (July 2015) in which the representative of the IA also participated. HORTICORP justified the selection of IA stating that the manufacturer of the weighing machines used by it advised to award the work to the IA for best results. It is pertinent to note that the project was currently dormant due to software and technical issues (November 2019).

The GoK did not offer any reply in this regard.

- The Guidelines stipulated that the estimated cost of an IT project should be assessed based on 'total cost of ownership' and that cost comparison among various software should include cost of all necessary licenses and recurring expenses for first three years. Costs related to licensing and annual maintenance (varying from 10 to 12 per cent) were, however, considered by TCCL, TTPL and KEL only.

5.1.3.4 Service Level Agreements

As per the Guidelines, System Requirements Specification (SRS), detailed acceptance test plan based on the SRS, application software with fully documented source code and all necessary licenses are the deliverables expected from the IA. Accordingly, a detailed Service Level Agreement¹⁵ (SLA) needs to be entered into with the IA covering all the aspects of development, implementation and maintenance of the software.

Audit observed that four PSUs (FOMIL, COIR CORP, KEL and HORTICORP) did not enter into any SLA with the respective IAs and therefore these PSUs did not have clear-cut guidelines regarding the service obligations of the IAs and the associated service deliverables during the implementation process. The remaining four PSUs (CASHEW CORP, WAREHOUSING CORP, TTPL and TCCL), through the SLAs, ensured that the SRS was prepared and source code of the developed system was handed over to it by the IA. Further, none of these SLAs provided for comprehensive acceptance testing including the final acceptance testing by an independent third party as stipulated by the Guidelines.

COIR CORP accepted (June 2020) that they did not enter into SLA with the IA, while FOMIL replied (June 2020) that they were unaware of the guidelines regarding SLA.

The fact remained that the PSUs did not comply with the Guidelines. The replies of the PSUs were also silent on the absence of provision for comprehensive acceptance testing. Absence of or incomplete SLA would result in inadequate mapping of deliverables expected from the implementation of ERP systems.

5.1.3.5 Acceptance Testing

The Guidelines stipulated that Acceptance Test Plan (ATP) along with sample data should be ready by the time the application software is developed and that testing is conducted by functional experts within the organisation. The Final Acceptance Testing (FAT) should be conducted by a professional agency appointed through a transparent process.

¹⁵ A Service Level Agreement is a contract between a service provider and its customers that documents what services the provider will furnish and defines the service standards the provider is obligated to meet.

Audit observed that documentation regarding in-house acceptance testing was not available in any of the PSUs nor did the PSUs involve any external agency for FAT since there were no agreement clauses regarding the same. Absence of ATP or FAT led to the following issues in four out of eight PSUs:

- **WAREHOUSING CORP** did not conduct acceptance testing of the modules completed by the IA in October 2012. In the absence of any testing reports, the IA could not further proceed with the development work for over four years (up to July 2017).
- **HORTICORP** released about 88 per cent of the contract price without any testing and acceptance procedure though the IA was eligible for only 50 per cent as per the work order¹⁶. **HORTICORP**, thus, paid an excess amount of ₹28.73 lakh without considering the stages of implementation. Further, the software was presently utilised only for generating invoices. The other functionalities such as real time monitoring of outlets, procurement, storage, accounting etc. envisaged in the project have not been achieved to date (January 2020).

The GoK replied (September/ October 2020) that **WAREHOUSING CORP** conducted the testing after revamping the project and all the modules were running. **HORTICORP** released 88 per cent of the contract price based on technical committee evaluation that ERP implementation attained 80 per cent progress.

The reply regarding **HORTICORP** was not acceptable as the payment made was not in line with the conditions specified in the work order. The failure to conduct ATP or FAT resulted in the delayed development and fine-tuning of the ERP software based on actual requirements.

¹⁶ Fifty per cent payment as advance along with work order, another 30 per cent after successful installation of hardware and software and acceptance of **HORTICORP** based on the recommendation of technical committee and balance 20 per cent after successful trial run.

5.1.3.6 Other Contract Management Issues

Audit also noticed contract management issues in various PSUs as stated below:

COIR CORP

- As per Rule 7.33 of the SPM, a minimum of 15 days should be given to submit the tenders. However, the PSU allowed only six days (30 April 2013 to 6 May 2013) which was not justified as there was no urgency.
- As per the tender conditions, the successful bidder was to furnish a performance bank guarantee for an amount equivalent to 10 percent of the quoted value. The PSU, however, did not insist for its compliance by the IA.
- Even though the Annual Maintenance Contract (AMC) for the ERP commenced three years ago, the PSU did not sign any agreement with the IA detailing the terms and conditions thereof.

COIR CORP replied (June 2020) that as it wanted to implement the project in the shortest possible time, the bid submission date was fixed short. Since the IA was not able to furnish bank guarantee, a deduction of 10 to 25 percent from bill amount was made which was released after six months of successful implementation of the project. Further, the software was under the warranty period of three years and an agreement was being entered into with the IA for future AMC.

However, COIR CORP did not comply with the provisions of the SPM and the tender conditions. By shortening the bid submission date, the PSU did not provide equal chance to all the prospective bidders to participate in the tender. The delay in entering into an agreement for the AMC would entail the risk of non/poor performance from the IA.

WAREHOUSING CORP

- As per the agreement with the IA (CDAC) in June 2019, the entire payment was to be released after the acceptance of individual modules. The agreement, however, did not provide for integration of individual modules, which was an essential characteristic of the ERP system.

The GoK replied (September 2020) that payment was released after acceptance of each module and final payment was made only after completion (March 2020) of the project.

The fact, however, remains that the integration of all individual modules was not specified as a payment milestone.

5.1.4 Procurement of Hardware

The Guidelines also stipulated that no e-governance initiative should plan for common IT infrastructure like server since the facility in the State Data Centre could be made use of and duplicate expenditure avoided.

Audit, however, observed that out of eight PSUs covered in audit, only CASHEW CORP explored the possibility of using State Data Centre (who offered free hosting) for their data storage needs. While TCCL used the existing server, COIR CORP was hosting database through Amazon Web Services and incurred ₹2.68 lakh (from March 2017 onwards) as hosting charges. In the case of remaining five PSUs, four PSUs (TTPL, FOMIL, WAREHOUSING CORP and HORTICORP) spent ₹9.49 lakh for procuring the server machines.

<p>CASHEW CORP has entered into an agreement with KELTRON for hosting its database in the Cloud VMs of State Data Centre, thus avoiding extra expenditure for own server.</p>

The GoK replied (September 2020) that WAREHOUSING CORP procured the server machine as per the advice of IA and the server was running without any issues. HORTICORP procured the hardware through KELTRON as there were no technical experts in the PSU.

COIR CORP replied (June 2020) that server space was not available in IT Mission when it approached them in 2013-14. In-house server was used for two to three years until it became non-functional. Amazon Web Services were availed by the company as their cost was cheaper compared to new server machine.

The replies were not acceptable as the procurement of hardware by PSUs was not in line with the Guidelines issued by GoK. Further, COIR CORP did not ascertain the availability of server space with the State Data Centre/ IT Mission before it opted for Amazon Web Services in 2017 or thereafter.

5.1.5 Security of Hardware and Data

Of the eight PSUs, ERP systems of six PSUs (TCCL, TTPL, WAREHOUSING CORP, COIR CORP, HORTICORP and KEL) were either fully or partially operationalised (i.e., some of the modules) and the PSUs used live production servers to host their data. The security of hardware and data assumed importance as any loss of data could cripple their operations from short to medium duration.

5.1.5.1 Information security policy

As per the Guidelines, an organisation should either use Information Security Policy published by KSITM (based on CERT-IN) or use a modified version to suit their requirement. Audit, however, noticed that none of the six PSUs adopted Information Security Policy of KSITM or prepared a modified version. The GoK replied (October 2020) that TTPL now formulated documented information security policy and necessary steps were being initiated by TCCL and WAREHOUSING CORP for the same.

5.1.5.2 Server security

As per the System Security Guidelines issued by CERT-IN, physical access to a server should be limited to only the administrator and other server operators. Audit, however, noticed that this was not ensured in five PSUs and only HORTICORP complied with this requirement. In fact, in TCCL and TTPL, main server and hot back-up server machines were kept in a room which was accessible to other staff for use of common printer kept therein. In WAREHOUSING CORP,

the server machine was kept in a photocopy room adjacent to the visitor's room. The GoK replied (October 2020) that TTPL and WAREHOUSING CORP have now ensured sever room security and entry was restricted to authorised persons only.

5.1.5.3 Database security

As per the Database Server Security Guidelines issued by CERT-IN, database server supplying information to a website should never be on the same machine as the web server. In the case of WAREHOUSING CORP and KEL, Audit, however, observed that the web server and database server were located in the same server machine. In WAREHOUSING CORP and HORTICORP, though the server was connected to the internet, the database was not protected by any firewall.

Audit also noticed that the ERP system of HORTICORP faced a ransomware¹⁷ attack in August 2016. Though all the files were decoded by the malware, they were restored from the backup server in KELTRON and an antivirus software was installed in the server in December 2016. The validity of the software, however, expired in December 2017 and the server remained without the protection of an antivirus software or a firewall since then.

The GoK replied (September/ October 2020) that implementation of firewall and related security systems which were part of the computerisation plan of WAREHOUSING CORP was progressing. In the case of HORTICORP, an antivirus software was installed for database security.

However, the ERP system implemented by WAREHOSUING CORP was functioning without any firewall protection. The other PSUs initiated action after the same were pointed out by Audit.

5.1.5.4 Data backup policy

It was observed that all the PSUs had either manual or automatic back-up systems. In the case of COIR CORP and CASHEW CORP, the responsibility for data backup was entrusted to their respective data storage service providers.

¹⁷ Ransomware is a type of malicious software that threatens to publish the victim's data or block access to it.

The other PSUs, however, did not have a documented data backup policy as stipulated by the System Security Guidelines.

The GoK replied (September/ October 2020) that TTPL formulated new IT policy which includes data backup policy and data of HORTICORP was backed up in backup server in KELTRON. The data of WAREHOUSING CORP would be backed up in the State Data Centre.

COIR CORP replied (June 2020) that data backup was done by the IA on weekly basis. However, the PSUs except TTPL were yet to formulate a documented data backup policy as required under the Guidelines which may weaken the regular data backup procedures and audit trail.

5.1.6 Other Related Issues

5.1.6.1 Training, documentation and change management

The Guidelines stipulated that all users and stakeholders of the new system shall be imparted knowledge about the new systems to ensure proper use and operation of applications and infrastructure. The Guidelines read with Regulation No. 161 of Regulation on Audit and Accounts issued by the CAG of India also required that all documentations such as the URS, FRS, SRS, design documents, change control documents, training materials, source code etc. shall be kept under safe custody of the IT Division so that maintenance and change management are carried out smoothly.

It was observed that COIR CORP did not maintain change control documents, source code etc. while none of the prescribed documents were available in KEL. Though all the PSUs entered into agreements/ issued work orders with specific clauses for imparting training in the new software, computer illiteracy was a major impediment in ERP implementation in the case of WAREHOUSING CORP and KEL.

The GoK replied (September/October 2020) that the IA of KEL imparted training, but there was high reluctance from employees due to poor computer literacy which delayed the implementation. WAREHOUSING CORP was providing training to their employees.

COIR CORP replied (June 2020) that they have demanded the IA to provide change control and source code.

However, COIR CORP completed the project in February 2014, but the request was made to the IA only after it was pointed out by Audit.

5.1.6.2 Role of KELTRON as a Total Solution Provider in HORTICORP

As per Government Order (February 2000), role of TSPs in IT project implementation was limited to aid the clients in preparation of feasibility studies, technical evaluation of bids, preparation of SRS, assisting in tendering process, onsite support after implementation etc. The TSPs were also required to follow all the instructions in the Guidelines scrupulously, lest it would result in revocation of their TSP status. KELTRON was the TSP in the case of HORTICORP. Audit, however, observed that:

- **HORTICORP** decided to appoint its IA on nomination basis without following transparent tendering process in a meeting (July 2015) where representatives of both IA and KELTRON were present. Though it was the duty of KELTRON as TSP to point out the non-compliance to the Guidelines regarding selection of IA, KELTRON did not object to the non-compliance.

The GoK replied (October 2020) that tendering process was not followed as the supplier of weighing machine suggested the IA as they had integrated ERP software of the IA.

The reply was not acceptable as the Guidelines stipulated that application development involving a third party agency shall be through a transparent tendering process.

- KELTRON also failed to advise **HORTICORP** regarding the use of common IT infrastructure, usage of free and open source software and to ensure that proper system study and technical analysis were carried out prior to project rollout.

The GoK replied (October 2020) that upgradation/procurement of the weighing machine and its installation was only the scope of work. KELTRON proceeded with the procurement of these facilities only after the receipt of completion certificate of the pilot phase of project from **HORTICORP**.

The reply was not tenable as the scope of work of KELTRON as TSP included turn-key implementation of ERP initiative in **HORTICORP**.

Recommendation 5.1: The GoK/PSUs may ensure that the Guidelines for implementation of e-governance initiatives are complied with while implementing ERP systems so that such projects are completed in a time bound manner and intended benefits achieved.

[The Audit paragraph 5.1 contained in the Report of the C & AG for the year ended 31 March, 2019.]

The notes furnished by the Government on the audit paragraph are given in Appendix II

Discussion and findings of the Committee

COIR CORP

5.1. Compliance to the Government of Kerala guidelines for implementation of Enterprise Resource Planning initiatives by Public Sector Undertakings.

The Committee enquired about the ERP implementation in Kerala State Coir Corporation Limited (COIR CORP). The Director, COIR CORP informed the Committee that ERP system in COIR CORP was completed in 2014 which was implemented within a period of six months and although some lapses were pointed out in the audit, it is still functioning successfully.

To a query of the Committee about Nodal Officer, the concerned official informed that in COIR CORP, Nodal Officer is a System Analyst and as per the guidelines, the Nodal Officer should be an officer immediately below the Managing Director.

5.1.2.2 Absence of Technical Analysis

The Committee noted that as per guidelines, technical analysis should be carried out after preparing URS based on connectivity, operating system and the risk associated with. But the COIR CORP did not follow the path. The Committee sought an explanation regarding this. The Managing Director informed the Committee that the ERP system was supposed to be done in open source platform but in COIR CORP it was done at a cost of ₹20 lakh in MS SQL software due to lack of knowledge of the officials at that time. He added that as per the AG's audit reference, a letter was issued to comply with the guidelines of the State Government and a consultant firm has been appointed as per the instructions of the Government and payment has been made to them and the project will be completed within a year.

The Committee accepted the reply. Hence no remarks.

5.1.3. Application Development and Project Rollout

5.1.3. Invitation of tender

The Committee observed that COIR CORP did not comply with the guidelines for the application development involving a third party agency and entered into tendering with a bare minimum specification of the functional process to be covered by the software. In the Government reply it was stated that even though there were minor deviations in the early stage, Corporation implemented ERP within the stipulated time in 2014 and even after 9 years it is functioning well.

The Committee observed that the Department admitted their fault in the tender procedure and instructs that such trends should not be repeated in future.

Observations/Recommendations

1. The Committee observes that as per the guidelines, pre-qualification criteria should be included while inviting tenders for the selection of bidder for the development of software by assessing experience, financial position etc. But COIR CORP did not include pre-qualification criteria while inviting tenders and resulted in the selection of a less experienced Implementing Agency.

5.1.3.4. Service Level Agreements

The Committee noted that COIR CORP has not entered into Service Level Agreement (SLA) with the respective Implementing Agency. In the Government reply, the COIR CORP admitted that they should have entered into SLA with the Implementing Agency, but they have Annual Maintenance Contract with Implementing Agency and their service was satisfactory.

The Committee observed that COIR CORP did not comply with the guidelines and the absence of incomplete SLA would result in inadequate mapping of deliverables expected from the implementation of ERP system. Hence the Committee recommends that COIR CORP should follow the guidelines for implementing this type of project in future.

Observations/Recommendations

2. The Committee observes that COIR CORP has not entered into Service Level Agreement with the respective implementing agency and the absence of incomplete SLA would result in inadequate mapping of deliverables expected from the implementation of ERP system. Hence the Committee recommends that the COIR CORP should enter into a detailed Service Level Agreement with the implementing agency covering all the aspects of development, implementation and maintenance of software in case of implementing this type of project in future.

HORTICORP

To a query of the Committee, the Regional Manager informed that he has been assigned to implement the ERP system in HORTICORP and accordingly the ERP has been prepared in collaboration with IT Mission and as per the guidelines of State Government, the ERP system will be implemented along with Startup Mission which is in the processing stage. He added that funds for implementation of RFB have been received from the State Horticultural Mission and the same is being processed.

The concerned officer added that the accounting system is done in Tally Software and by extending Tally node all over the State and complete data has been consolidated and printed at the State Level.

The Managing Director stated that KELTRON was entrusted to implement the ERP in 2015 and after the transfer of funds, the work was evaluated only in 2020 and by that time the technology was outdated and the warranty had expired.

The Committee enquired about the responsible official who transferred the fund to KELTRON for implementation of ERP. The Managing Director, HORTICORP informed that Shri. Babu Thomas, who has retired from service, was the Managing Director at that time and he had not taken any initiative to implement the ERP. He added that Tally software is currently being used in all districts.

To a query of the Committee about Tally software, the Managing Director informed that Tally software was customised by the Corporation for its use so that transactions could be monitored in the Head Office of each district. Since it was a software commonly used for accounting in all offices, only the cost of customisation would have to be spent.

The Committee opined that HORTICORP should have consulted IT Mission to solve the problems related to ERP implementation and the officers who avoided responsibility after paying the amount should be identified. The official from Accountant General Office commented that the guidelines stipulated that software like Tally should not be used in ERP.

The Managing Director stated that Tally is used only as an accounting system and is not being used in ERP. The Regional Manager added that RIDF has an online project of ₹50 lakh and after the completion of that project, online purchases will be possible through ERP system and then all the operations of the Corporation can be transferred to online system.

To a query of the Committee about the dues to farmers, the concerned official informed that dues till 31st July were paid. He added that KELTRON had received 85% of the total project amount from the Corporation without assuring any service and they had to rely on KELTRON due to lack of technically skilled employees. The Finance Department official reported that the amount allocated to HORTICORP from Department for implementing ERP was given to KELTRON without issuing a work order, violating the condition that only 20% of the project amount should be given as advance. The Regional Manager added that the Managing Director who handed over the amount to KELTRON has retired from service.

The Committee observed that the Managing Director of HORTICORP paid 85% of the amount to KELTRON in advance without executing any agreement or issuing work order. Therefore, the Committee suggested to demand an explanation from KELTRON for receiving 85% of the project cost without doing any work.

The Committee observed that the Government appoint the officers who had retired from service as Senior Officers/Managing Directors of Corporations and Boards and they are lavishing the Government money without any responsibility to the general public and the existing laws. So the Committee recommended to cease appointing retired officers in such posts.

Observations/Recommendations

3. The Committee observed that KELTRON was entrusted to implement the ERP in 2015 and after the transfer of funds, the work was evaluated only in 2020 and by that time the technology was outdated and the warranty had expired. The Committee noted that the Managing Director of HORTICORP paid 85% of the amount to KELTRON in advance without executing any agreement or issuing work order. Therefore, the Committee suggested to demand an explanation from KELTRON for receiving 85% of the project cost without doing any work.

4. And as a PSU and as an accredited agency for doing similar work, KELTRON should discuss the matter with HORTICORP and advance received from HORTICORP should be settled amicably. The Principal Secretary of Industries Department should oversee the procedure and report to the Committee without delay.

5. The Committee opined that HORTICORP should have consulted IT Mission to solve the problems related to ERP implementation. The Committee recommends that the officers who avoided responsibility after paying the amount for implementing the ERP should be identified and stringent action should be taken against them. The Finance Department should look into the matter and to determine whether any amount be recovered from them.

6. The Committee observes that the Government appoint persons who had either retired from service or from private sector on contract basis as Senior Officers/Managing Directors of Corporations and Boards and they are extravagantly spending the Government money without any responsibility to the general public and the existing laws. It has also been taken into consideration that if any kind of irregularities are detected, there is a limit to recover the amount from such persons. Hence the Committee recommends that retired officers should not be appointed to such posts. Moreover the Committee urged to explain the prevailing procedure in recovering dues from such officials after demitting the office. And if not so, suitable measures should be taken by the Finance Department to prevent such loophole in future and report the same to the Committee at the earliest.

THE KERALA STATE WAREHOUSING CORPORATION LIMITED

To a query of the Committee about ERP implementation in Warehousing Corporation, the Nodal Officer informed that in 2014, C-DAC was tasked to develop a software covering all the activities of the Warehousing Corporation and after 8 years in 2022, the software was implemented. Change in activities of the Corporation during this period made it difficult to make changes in the software. Hence, currently the required data being taken from the existing software. The concerned officer added that when there was a demand to include GST, a software was developed in collaboration with the IT Mission and TALLY software is used as accounting software and which is not integrated with ERP. The concerned officer further informed that in 2021 all the warehouses were provided with computers and before that only four of the 57 warehouses in Kerala had computer facilities.

The Committee sought explanation regarding the financial loss of the institution due to delay in completion of the work. The Nodal Officer informed that the total cost of the software was ₹21 lakh and all the warehouses were computerized and connected with the head office. About 50 multilevel computer trainings were given to the employees of the Corporation to make them computer literate.

The official from Accountant General enquired whether various modules for accounting were included in the software implemented in the Corporation. The Nodal Officer informed that in ERP, the accounts module comes as a part of

Head Office module, which have many modules like Marketing, Administration, Establishment etc.

The Committee observed that the Warehousing Corporation have developed an accounting module, but the Corporation is now using TALLY software for accounting purposes. The Committee expressed its strong discontent about the matter.

The official from Accountant General enquired how the expenditure for ERP implementation increased from ₹17 lakh to ₹21 lakh. The Nodal Officer informed that as per the first agreement, ₹14 lakh was paid to C-DAC excluding the last module and when the work was suspended in 2014 and was taken up in 2017, C-DAC refused to work as per the old agreement and had to pay ₹7 lakh more.

To a query of the Committee about Nodal Officer during the time of ERP implementation, the concerned official informed that she herself was the Nodal Officer. She added that during that period, senior officers were not proficient in computer and out of the three people with qualification in computer in the organization, she serving as the Assistant Manager with MCA qualification was appointed as Nodal Officer and has continued in the post till date. She added that lapses in ERP implementation occurred due to the lack of understanding about file handling as she had only 4 years of experience in the Corporation at the time of appointment as Nodal Officer.

The Committee sought explanation regarding the inclusion of GST in ERP. The Nodal Officer informed that there is a proposal to introduce a new billing system by including GST and when this matter was discussed with the IT Mission and the Start-up Mission, it was informed that since it was not possible to modify the existing software, the data can be taken from this software and a new software could be prepared. The concerned officer further informed that the Warehousing Corporation functions on its own fund and they already had a server and the firewall and related security systems were installed a year ago.

The Nodal Officer informed that the Corporation is now preparing the GST bills manually in Excel and is planning to introduce a new software incorporating the provision for GST, utilizing the real time data in the existing software.

She added that they are planning to execute this system with the help of Start-up mission and also utilizing the warehouse management system of Central Warehousing Corporation anticipating a meagre amount for the completion of the project.

Observations/Recommendations

7. The Committee observes that although C-DAC was entrusted in 2014 to develop software capable of performing all the functions of the Warehousing Corporation, it was completed only after 8 years. The Committee opines that due to non-appointment of suitable Senior Nodal Officer who is well experienced in the day to day functioning of the Corporation and non-preparation of URS as per the guidelines, ERP system could not be implemented in time. Hence the Committee recommends to follow strict adherence to the guidelines in such cases in future.

8. The Committee noted that Corporation is now planning to introduce a new software incorporating the provision for GST by utilising the real time data in the existing software. Therefore the Committee recommends that FRS, URS should be prepared before developing the new software and all guidelines regarding this should be followed. The Committee also recommends to furnish a detailed report after implementing the project.

9. The Committee observes that despite having module for accounting in ERP, TALLY software is still being used for accounting in the Corporation. The Committee is concerned that the use of Tally for accounting even after giving several trainings to all the officers of the Corporation is a misuse of the financial system and manpower of the Warehousing Corporation. Therefore, the Committee recommends to avoid TALLY software and implement the ERP in fullfledged manner.

E. CHANDRASEKHARAN,

Chairperson,

Committee on Public Undertakings

Thiruvananthapuram,
21st March, 2025.

APPENDIX-I**SUMMARY OF MAIN CONCLUSIONS/RECOMMENDATIONS**

Sl No.	Para No.	Department Concerned	Conclusions/Recommendations
(1)	(2)	(3)	(4)
1	1	Industries	The Committee observes that as per the guidelines, pre-qualification criteria should be included while inviting tenders for the selection of bidder for the development of software by assessing experience, financial position etc. But COIR CORP did not include pre-qualification criteria while inviting tenders and resulted in the selection of a less experienced Implementing Agency.
2	2	Industries	The Committee observes that COIR CORP has not entered into Service Level Agreement with the respective implementing agency and the absence of incomplete SLA would result in inadequate mapping of deliverables expected from the implementation of ERP system. Hence the Committee recommends that the COIR CORP should enter into a detailed Service Level Agreement with the implementing agency covering all the aspects of development, implementation and maintenance of software in case of implementing this type of project in future.
3	3	Agriculture	The Committee observed that KELTRON was entrusted to implement the ERP in 2015 and after the transfer of funds, the work was evaluated only in 2020

			and by that time the technology was outdated and the warranty had expired. The Committee noted that the Managing Director of HORTICORP paid 85% of the amount to KELTRON in advance without executing any agreement or issuing work order. Therefore, the Committee suggested to demand an explanation from KELTRON for receiving 85% of the project cost without doing any work.
4	4	Agriculture	And as a PSU and as an accredited agency for doing similar work, KELTRON should discuss the matter with HORTICORP and advance received from HORTICORP should be settled amicably. The Principal Secretary of Industries Department should oversee the procedure and report to the Committee without delay.
5	5	Agriculture	The Committee opined that HORTICORP should have consulted IT Mission to solve the problems related to ERP implementation. The Committee recommends that the officers who avoided responsibility after paying the amount for implementing the ERP should be identified and stringent action should be taken against them. The Finance Department should look into the matter and to determine whether any amount be recovered from them.
6	6	Agriculture	The Committee observes that the Government appoint persons who had either retired from service or from private sector on contract basis as senior

			<p>officers/Managing Directors of Corporations and Boards and they are extravagantly spending the Government money without any responsibility to the general public and the existing laws. It has also been taken into consideration that if any kind of irregularities are detected, there is a limit to recover the amount from such persons. Hence the Committee recommends that retired officers should not be appointed to such posts. Moreover the Committee urged to explain the prevailing procedure in recovering dues from such officials after demitting the office. And if not so, suitable measures should be taken by the Finance Department to prevent such loophole in future and report the same to the Committee at the earliest.</p>
7	7	Agriculture	<p>The Committee observes that although C-DAC was entrusted in 2014 to develop software capable of performing all the functions of the Warehousing Corporation, it was completed only after 8 years. The Committee opines that due to non-appointment of suitable Senior Nodal Officer who is well experienced in the day to day functioning of the Corporation and non-preparation of URS as per the guidelines, ERP system could not be implemented in time. Hence the Committee recommends to follow strict adherence to the guidelines in such cases in future.</p>
8	8	Agriculture	<p>The Committee noted that Corporation is now planning to introduce a new software incorporating the</p>

			provision for GST by utilising the real time data in the existing software. Therefore the Committee recommends that FRS, URS should be prepared before developing the new software and all guidelines regarding this should be followed. The Committee also recommends to furnish a detailed report after implementing the project.
9	9	Agriculture	The Committee observes that despite having module for accounting in ERP, TALLY software is still being used for accounting in the Corporation. The Committee is concerned that the use of Tally for accounting even after giving several trainings to all the officers of the Corporation is a misuse of the financial system and manpower of the Warehousing Corporation. Therefore, the Committee recommends to avoid TALLY software and implement the ERP in fullfledged manner.

**GOVERNMENT OF KERALA
INDUSTRIES (E) DEPARTMENT**

**STATEMENT OF REMEDIAL MEASURES TAKEN ON THE COMPLIANCE AUDIT OBSERVATIONS RELATING TO
KERALA STATE COIR CORPORATION LIMITED AND FOAM MATTINGS (INDIA) LIMITED IN THE REPORT OF
THE COMPTROLLER & AUDIT GENERAL OF INDIA ON PUBLIC SECTOR UNDERTAKINGS FOR THE YEAR ENDED 31 MARCH, 2019**

Para No.	AUDIT PARA	REMEDIAL MEASURES TAKEN
5.1	<p><i>Compliance to the Government of Kerala guidelines for implementation of Enterprise Resource Planning initiatives by Public Sector Undertakings :</i></p> <p>The Government of Kerala (GoK) issued (September 2009) guidelines for implementation of e-governance initiatives in the State, detailing therein the procedures to be followed in the development of Software Systems.</p> <p>The implementation of Enterprise Resource Planning (ERP) system was a failure in Foam Mattings (India) Limited (FOMIL).</p>	<p><u>Kerala State Coir Corporation Limited</u></p> <p>Kerala State Coir Corporation Limited has successfully implemented and running the ERP since 2014.</p> <p><u>Foam Mattings (India) Limited</u></p> <p>Foam Mattings (India) Limited (FOMIL) informed the Government that, non-availability of competent IT personnel in the Company deeply affected implementing ERP system successfully.</p>

5.1.1	<p>Leadership & Co-ordination of the implementation process:</p> <p>The e-governance guidelines (the Guidelines) stipulated that organizations implementing e-governance project shall appoint a nodal officer who, even if not from the IT wing, would at least be not more than on level below the Head of the Organization. As per the guidelines, the Nodal Officer plays a proactive role in implementation of ERP systems and is responsible for change management in the event of any adverse situation.</p> <p>Audit, however, observed that except TCCL, none of the PSUs instituted a formal mechanism for ensuring involvement of top management in the implementation of ERP.</p> <p>In case of COIR CROP the role of Nodal Officer was entrusted to the System Analyst, such an arrangement was, however, absent in FOMIL and the ERP systems in these PSUs were not yet completed (November 2019).</p> <p>FOMIL replied (June 2020) that a nodal officer was not appointed due to lack of any competent IT personnel.</p> <p>The reply only validates the audit observation that non-appointment of properly qualified and suitably senior nodal officers as required in the Guidelines affected the timely implementation of ERP systems in the PSUs.</p>	<p><u>Kerala State Coir Corporation Limited</u></p> <p>The System analyst who is one of senior officer was appointed as Nodal Officer in Coir Corporation. It has been reported that, the ERP was timely implemented in Coir Corporation.</p> <p><u>Foam Matings (India) Limited</u></p> <p>Lack of competent IT personnel in FOMIL affected the successful implementation of ERP system in the company. The post (Junior Officer Computer) was later filled by Kerala Public Service Commission. This officer will be appointed as a nodal officer for implementing similar projects in future. It is also reported by FOMIL that, since the installation of ERP was not completed in the stipulated time, the company has initiated legal action against the firm.</p>
5.1.2	<p>Development of Detailed Project Proposal:</p> <p>The Guidelines stipulated that all IT enabled project should invariably have a Detailed Project Proposal (DPP) prepared either in-house or by taking external help from a Total Solution provider (TSP)/ Professional Consultancy Agency. The proposal shall consist of User Requirements Specification (URS), Functional Requirements Specification (FRS), Technical Analysis and an implementation Plan. None of the PSUs, however, prepared DPPs/ its Components resulting in the following issues:</p>	<p>Coir Corporation had prepared the FRS and SRS before publishing the tender. There was an implementation plan also.</p>

<p>5.1.2.1</p>	<p><u>Non-preparation of URS & FRS:</u></p> <p>As per the Guidelines, URS & FRS should be prepared by functional experts within the organization by defining the user requirements exhaustively, and practically feasible process reforms should be included in the FRS. Tenders for software development should be invited based on FRS which, in turn, shall form the basis for development of System Requirements Specification (SRS) to be delivered by implementing Agency (IA).</p> <p>Audit observed that since the user requirements were not exhaustively identified through URS by the PSUs themselves, no process reforms could be identified and brought out through FRS. The PSUs assigned the work of developing SRS to the IAs without identifying the user requirements and FRS. The SRS development by the IAs, hence, suffered from the following shortcomings which affected the development process.</p> <p>As no URS was prepared in FOMIL, demands for changes cropped up immediately after the installation of the software. Reports & Invoices generated through the system did not meet the statutory and business requirements and the software remained non-functional despite incurring ' 8.19 lakh (80 per cent of the contract amount).</p> <p>FOMIL replied (June 2020) that due to lack of competent officials it was not aware of the procedures to be followed. Due to absence of exhaustive user requirement study in the beginning, COIR CORP had to bring in a number of additional features during the course of development for which an extra amount of ' 2.30 lakh was paid. Conversely, though the PSU did not require a Training module, the ERP system included it as it was not backed by a user requirement study. Thus, the module could not be utilised despite spending ' 0.50 lakh for it.</p> <p>COIR CORP replied (June 2020) that FRS was prepared</p>	<p><u>Kerala State Coir Corporation Limited</u></p> <p>Coir Corporation had prepared the FRS & SRS before publishing the tender in the website. This is available under 19.1 (Page 10-14) of the tender document. The additional features brought in various modules were done based on the new requirements of the company which came in after the implementation of ERP in 2014. For example, the changes in the existing documents related to GST rules, reports based on GST etc. It has been reported that, these requirements were not in 2013 when the Company had invited the tender. The functional requirements in the tender were only outline information. However Coir Corporation held detailed discussion with the IA regarding such requirements.</p> <p><u>Foam Mattings (India) Limited</u></p> <p>Since there was no competent person in the company who is well versed with IT related matters during that time, the implementing agency was instructed to study the requirements of company and prepare customised software. Since the installation of FRP was not completed in the stipulated time, the company has initiated legal action against the firm.</p>
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5.1.2.2	<p>before publishing the tender and the same was included in the tender document. Also, the additional requirements were for meeting regulatory requirements like Goods & Services Tax (GST) which were not applicable when tenders were invited. Audit, however, observed that COIR CORP provided an outline of functional requirements in the tender document which was not comprehensive due to absence of detailed user requirement study. Hence, additional features, which were functional in nature, had to be included later.</p>	
<p>5.1.2.2</p> <p>Absence of Technical Analysis:</p> <p>As per the Guidelines, technical analysis shall be carried out base on the URS and different alternatives for connectivity, operational platform (Operating System, RDBMS etc) and risks associated therewith. Audit, however, observed that none of the PSUs carried out any detailed technical analysis of the proposed ERP systems which led to the following issues:</p> <p>As per the Guidelines, free and open source based software would be used, wherever possible. Audit, however, observed that only CASHEW CORP used open Source platform in its ERP system while other PSUs used proprietary platforms. Three PSUs (KEL, HORTICORP and WARE HOUSING CORP) spent 2.95 lakh towards licence fee for proprietary software.</p> <p>COIR CORP stated (June 2020) that MS SQL was selected due to its better data management and security features. FOMIL stated (June 2020) that technical analysis was not done due to non-awareness of procedure and absence of competent IT personnel.</p> <p>The fact remained that the selection of proprietary software was not followed by any technical analysis.</p>	<p>Kerala State Coir Corporation Limited</p> <p>Coir Corporation selected MS SQL due to its better data management and security features. According to Coir Corporation, this is supported by the fact that even after 9 years of implementation the ERP is running smoothly in the Company.</p> <p>Foam Mattings (India) Limited</p> <p>The process involved in coir industry is complicated when compared to other industries; a customised software was required suiting the complicated production, wages (including CIRC wages) calculation, etc. Hence, the Company entrusted an agency to study and prepare customised software suiting their particular requirements. According to FOMIL this was done in good faith. Since the installation of ERP was not completed within the stipulated time, the company has initiated legal action against the firm.</p>	

1.2.3	<p>Absence of Implementation Plan:</p> <p>As per the Guidelines, an implementation plan containing an estimate prepared on the basis of total cost of ownership, the expected benefits quantified based on higher revenue generation or cost reduction and the time schedule for the pilot phase and final rollout for the project shall be prepared. Audit, however, observed that the PSUs did not envisage any definite objective for implementation of ERP systems. In the absence of the implementation plan, Audit could not assess the outcome or impact of ERP projects that were completed and the opportunity cost of those that were delayed beyond the target date.</p>	<p>Kerala State Coir Corporation Limited</p> <p>Coir Corporation had clear objectives which were also put in writing in Tender documents. The objectives were fulfilled timely. The implementation period was 6 months. ERP is used in Head Office, 3 factory divisions and all showrooms of Coir Corporation. There is real time access to various data related to Production, Purchase, Sales, Finance, Personnel departments of Coir Corporation. It is reported that, Coir Corporation has successfully implemented and running the ERP since 2014.</p> <p>Foam Matings (India) Limited</p> <p>FOMIL reported that, as per their work order it was strictly mentioned to complete the software installation to ensure successful running within 90 day from the date of work order. It was also instructed that a thorough study of the process and operations should be undertaken before finalizing the modules. A two year service guarantee was also incorporated in the work order.</p>
5.1.3	<p>Application Development and Project Rollout:</p>	<p>Kerala State Coir Corporation Limited</p>
5.1.3.1	<p>Invitation of tender:</p> <p>As per the Guidelines, application development involving a third party agency shall be through a transparent tendering process based on FRS, detailed technical architecture, implementation plan and information security policy of Kerala State IT Mission (KSITM) / Computer Emergency Response Team-IN (CERT-IN). The PSUs, however, did not comply with this stipulation and entered into tendering with bare minimum specifications of the functional processes to be</p>	<p>There were minor deviations in the early stage, which is requested to be condoned. It is also to be considered that, Coir Corporation implemented ERP within the stipulated time in 2014 and even after 9 years it is functioning well.</p>

	covered by the software.	<p>Foam Mattings (India) Limited</p> <p>Tender procedures for installing the ERP system was done floating tender document. Lack of competent authority to scrutiny the technical aspects caused issues.</p>
5.1.3.2	<p>Prequalification Criteria:</p> <p>The Guidelines stipulated that there shall be a prequalification process to shortlist the bidders. As per the Central Vigilance Commission (CVC) guidelines, the average annual financial turnover of the bidders is to be included as one of the prequalification criteria in the tender document to ensure the financial soundness of the firm. CVC guidelines also stipulated that all important tender evaluation criteria need to be specified in unambiguous terms in the bid documents so that the evaluation of bids can be made without any subjectivity.</p> <p>Audit, however, observed that the criteria stipulated by FOMIL, TCCL and COIR CORP did not include parameters for ensuring financial soundness of the bidders while that of FOMIL were too vague to ensure participation of only ERP vendors. Similarly, WAREHOUSING CORP, COIR CORP and TTPL did not include the evaluation criteria, subsequently used for prequalifying the bids, in their tender documents.</p> <p>The absence of or ambiguous prequalification criteria led to selection of inexperienced implementation Agencies resulting in non-implementation / delayed implementation of the ERP Systems by the Implementing Agencies.</p> <p>COIR CORP relied (June 2020) that the experience of the firm was stipulated as criteria instead of fixing turnover. Also, the financial statements of the last five years were scrutinised. The fact, however, remains that the CVC guidelines were not complied with by the PSUs, with adverse impact on implementation of the ERP Systems.</p>	<p>Kerala State Coir Corporation Limited</p> <p>Instead of Turnover, Coir Corporation stipulated successful implementation of the software in the Coir Industry as prequalification criteria. The minimum experience stipulated was 10 years. However, the financial statements of last 5 years from the date of tender were also scrutinised and on the basis of same profit making, financially sound IA was selected. The Company was able to successfully implement the project.</p> <p>Foam Mattings (India) Limited</p> <p>According to FOMIL, since the Company was not having an IT person with knowledge of prequalification criteria, tender was floated mentioning specific requirement of ERP system suitable for their process.</p>

5.1.3.3	<p>Evaluation of bids and awards of work:</p> <p>The following deficiencies were noticed in bid evaluation and award of work:</p> <p>FOMIL selected the IA though the firm did not meet the criteria of having supported ERP systems of at least tow PSUs in Kerala and twenty-five-year experience in IT Sectors prescribed for the technical qualification of the bidders. As per the Stores Purchase Manual (SPM), price bids if technically qualified bidders alone shall be opened. FOMIL, however, opened the price bids of all the four bidders including that of two technically disqualified bidders and evaluated them.</p> <p>FOMIL replied (June 2020) that 25 years' experience criteria was overlooked. The bid of the firm that had implemented ERP projects in government aided agencies were considered as equivalent to PSUs.</p> <p>The reply was not tenable as the evaluation was not in line with the criteria stipulated in the tender document.</p> <p>The Guidelines stipulated that the estimated cost of an IT project should be assessed based on total cost of ownership and that cost comparison among various software should include cost of all necessary licences and recurring expenses for first three years. Costs related to licensing and annual maintenance (varying from 10 to 12 per cent)</p> <p>FOMIL replied (June 2020) that the failure to incorporate maintenance cost in the tender was due to lack of expertise/absence of an IT Official.</p>	<p>Kerala State Coir Corporation Limited</p> <p><i>(No remarks are there against Coir Corporation in this Para)</i></p> <p>Foam Mattings (India) Limited</p> <p>As per the tender conditions, the bidder should have supported ERP in two Public Sector Units and the bidder submitted certificates from Alleppey Coir Cluster Development Society and Kerala Coir Mats and Mattings Co-operative Society. Considering a client who is funded by Govt of India that too in the same sector as a credential of IA, this was done in good faith, especially in the complicated process involved in coir sector. Also Nova Soft has submitted a letter stating that they were appointed as the IT consultant by Coir Board (Government of India) for providing Technical expertise for implementing Business solution for the entire Coir Industry and they were awarded as Best BDS Award from Coir Board for providing excellent IT service to the coir industry in the year 2010.</p> <p>Since the installation of ERP was not completed in the stipulated time, the company has initiated legal action against the firm.</p>
5.1.3.4	<p>Service Level Agreement:</p> <p>As per the Guidelines, System Requirements Specification (SRS), detailed acceptance test plan based on the SRS, application software with fully documented source code and all necessary licenses are the deliverables expected from the IA. Accordingly, a detailed Service Level Agreement (SLA)</p>	<p>Kerala State Coir Corporation Limited</p> <p>Coir Corporation admitted that, they should have entered into SLA with the IA but they also reported that, the Company has Annual Maintenance Contract with the IA and their service is satisfactory.</p>

5.1.3.5	<p>needs to be entered into with the IA covering all the aspects of development, implementation and maintenance of the software.</p> <p>Audit observed that PSUs (FOMIL & COIR CORP) did not enter into any SLA with the respective IAs and therefore these PSUs did not have clear-cut guidelines regarding the service obligations of the IAs and the associated service deliverables during the implementation process.</p> <p>COIR CORP accepted (June 2020) that they did not enter into SLA with the IA, while FOMIL replied (June 2020) that they were unaware of the guidelines regarding SLA. The fact remained that the PSUs did not comply with the Guidelines. The replies of the PSUs were also silent on the absence of provision for comprehensive acceptance testing. Absence of or incomplete SLA would result in inadequate mapping of deliverables expected from the implementation of ERP systems.</p>	<p style="text-align: center;"><u>Foam Mattings (India) Limited</u></p> <p>Even though FOMIL had not entered in to a service level agreement, the Company had given a detailed work order with a clause of guarantee for two years specifically mentioning that if the system fails by any reason or doesn't meet Company's requirements, the same has to be replaced/rectified at the cost and risk of implementing agency.</p>
	<p>Acceptance Testing:</p> <p>The Guidelines stipulated that Acceptance Test Plan (ATP) along with sample data should be ready by the time the application software is developed and that testing is conducted by functional experts within the organisation. The Financial Acceptance Testing (FAT) should be conducted by a professional agency appointed through a transparent process. Audit observed that documentation regarding in-house acceptance testing was not available in any of the PSUs nor did the PSUs involve any external agency for FAT since there were no agreement clauses regarding the same. Absence of ATP or FAT led to the following issues in PSUs:</p> <p>FOMIL released about 80 per cent of the contract price without conducting any testing. Even though the IA claimed successful completion of ERP, various departments in FOMIL raised complaints/ demanded changes in the software which the IA did not carry out. As a result, FOMIL was not for</p>	<p style="text-align: center;"><u>Kerala State Coir Corporation Limited</u></p> <p>The payment to IA for the development and implementation of ERP in Coir Corporation was made according to the progress and after detailed checking of modules developed and implemented. The testing was held in house. The same was documented properly.</p> <p style="text-align: center;"><u>Foam Mattings (India) Limited</u></p> <p>As per the work order of FOMIL, 50% payment will be given as advance along with work order and 30% after installing the software and 10% after user training and balance 10% retention money for a period of 2 years as performance guarantee. But Company didn't paid advance of 50% along with work order. The payment was done only after IA's claim.</p>

	<p>litigation.</p> <p>The replies of Gok and FOMIL were not acceptable as the Guidelines mandated final acceptance test by an external agency selected through a transparent process. The failure to conduct ATP or FAT resulted in the delayed development and fine-tuning of the ERP software based on actual requirements.</p>	<p>of software installation with a request to release the agreed amount of 80%.</p>
5.1.3.6	<p>Other Contract Management Issues :</p> <ul style="list-style-type: none"> As per Rule 7.33 of the SPM, a minimum of 15 days should be given to submit the tenders. However, the PSU allowed only six days (30 April 2013 to 6 May 2013) which was not justified as there was no urgency. As per the tender conditions, the successful bidder was to furnish a performance bank guarantee for an amount equivalent to 10 per cent of the quoted value. The PSU, however, did not insist for its compliance by the IA. Even though the Annual Maintenance Contract (AMC) for the ERP commenced three years ago, the PSU did not sign any agreement with the IA detailing the terms and conditions thereof. <p>COIR CORP replied (June 2020) that as it wanted to implement the project in the shortest possible time, the bid submission date was fixed short. Since the IA was not able to furnish bank guarantee. A deduction of 10 to 25 percent from bill amount was made which was released after six months of successful implementation of the project. Further, the software was under the warranty period of three years and an agreement was being entered into with the IA for future AMC.</p> <p>However, COIR CORP did not comply with the provisions of the SPM and the tender conditions. By shortening the bid submission date, the PSU did not provide equal chance to all the prospective bidders to</p>	<p><u>Kerala State Coir Corporation Limited</u></p> <ul style="list-style-type: none"> Coir Corporation invited tenders on 30 April 2013 and the last date of submission of the tender was on 6th May 2013. The Company wanted to implement the project in the shortest possible time. They also got sufficient responses. As the ERP service provider was not able to furnish bank guarantee, Coir Corporation deducted 10%- 25% from the amount of bill of each module. The withheld amount was released only after 6 months of successful running of the module. The warranty period of the software was for 3 years. Annual Maintenance Contract for further support costs 10% of the value of the project. Coir Corporation has already entered into agreement with the IA for AMC. <p>The Coir Corporation assured that, lapses occurred in the initial stages will not be repeated and due care will be taken to follow the recommendations in the Audit Report in future.</p>

	<p>participate in the tender. The delay in entering into an agreement for the AMC would entail the risk of non/poor performance from the IA.</p> <ul style="list-style-type: none"> FOMIL <p>As per the tender conditions, no advance payment could be made to any suppliers. The SPU, however, agreed to pay 50 per cent advance along with work order while issuing work order to the IA. The conditions under which the PSU agreed to pay the advance, were not forthcoming from the records made available in audit.</p> <p>FOMIL replied (June 2020) that in the absence of subject expert with the company, management believed the IA and released the payment.</p>	<p style="text-align: center;"><u>Roam Mattings (India) Limited</u></p> <p>Even though an advance payment of 50% was mentioned in the work order, FOMIL didn't release that advance payment and the payment was only released after installing the software.</p>
5.1.4	<p><i>Procurement of Hardware :</i></p> <p>The Guidelines also stipulated that no e-governance initiative should plan for common IT infrastructure like server since the facility in the State Data Centre could be made use of and duplicate expenditure avoided.</p> <p>COIR CORP was hosting database through Amazon Web Services and incurred ₹ 2.68 lakh (from March 2017 onwards) as hosting charges. In the case of remaining five PSUs, four PSUs including FOMIL spent ₹ 9.49 lakh for procuring the server machines.</p> <p>FOMIL replied (June 2020) that the procurement of server was made without the knowledge that common state level facilities existed. COIR CORP replied (June 2020) that server space was not available in IT mission when it approached then in 2013-14. In-house server was used for two or three years until it became non-functional. Amazon Web Services were availed by the company as their cost was cheaper compared to new server machine.</p> <p>The replies were not acceptable as the procurement of</p>	<p style="text-align: center;"><u>Kerala State Coir Corporation Limited</u></p> <p>During the year 2013-14 Coir Corporation had approached IT mission for server space and IT mission informed that service space was unavailable. So Coir Corporation had to arrange the server system in house and this ran for 2-3 years. Coir Corporation considered buying a new server, when the in-house first server became non-functional. But when the cost of new server was compared with that of Amazon web services, the cost of Amazon web services was found cheaper and hence from 2017 onwards Coir Corporation is using the Amazon Web Services which according to the Company is cost effective.</p> <p style="text-align: center;"><u>Roam Mattings (India) Limited</u></p> <p>FOMIL reported that, they were unaware of a common state level facility to provide support for IT infrastructure and hence purchased a server in good faith for storing company data.</p>

	hardware by PSUs was not in line with the Guidelines issued by GoK. Further COIR CORP did not ascertain the availability of server space with the State Data Centre/ IT Mission before it opted for Amazon Web Services in 2017 or thereafter.	
5.1.5 5.1.5.1	<p>Security of Hardware and Data:</p> <p>Information Security Policy :</p> <p>As per the Guidelines, an organization should either use Information Security Policy published by KSIITM (based on CERT-IN) or use a modified version to suit their requirement. Audit, however, noticed that none of the six PSUs (including Coir Corporation) adopted Information Security Policy of KSIITM or prepared a modified version.</p>	<p><u>Kerala State Coir Corporation Limited</u></p> <p>The ERP system of Coir Corporation is hosted on Server of Amazon Web services. According to Coir Corporation, it is one of the widely used, reliable, secure and cost effective server. Further, in Coir Corporation the operations in ERP is controlled by assigning individual username and password and there is provision to assign rights in ERP to each employee.</p> <p><u>Foam Mattings (India) Limited</u></p> <p>FOMIL reported that, the company was not aware of information security policy of Kerala state IT Mission, then.</p>
5.1.5.2	<p>Server Security:</p> <p>As per the System Security Guidelines issued by CERT-IN, physical access to a server should be limited to only the administrator and other server operators. Audit, however, noticed that this was not ensured in PSUs.</p>	<p><u>Kerala State Coir Corporation Limited</u></p> <p>The ERP system of Coir Corporation is hosted on Server of Amazon Web services.</p> <p><u>Foam Mattings (India) Limited</u></p> <p>FOMIL has a separate server room, where access is restricted only to the Administrator.</p>
5.1.5.3	<p>Database security:</p> <p>As per the Database Server Security Guidelines issued by CERT-IN, database server supplying information to a website should never be on the same machine as the webserver.</p>	<p><u>Kerala State Coir Corporation Limited</u></p> <p>The ERP system of Coir Corporation is hosted on Server of Amazon Web services. According to Coir Corporation, it is one of the widely used, reliable, secure and cost effective</p>

		server.	<u>Foam Mattings (India) Limited</u> FOMIL reported that, the company was then not aware of the Database Server Security Guidelines issued by CERT-IN.
5.1.5.4	Data backup policy: COIR CORP replied (June 2020) that data backup was done by the IA on weekly basis. However, the PSUs except TTPL were yet to formulate a documented data backup policy as required under the Guidelines which may weaken the regular data backup procedures and audit trail.		<u>Kerala State Coir Corporation Limited</u> Responsibility for data backup in Coir Corporation was entrusted to IA. Weekly data backup is taken from the ERP by IA. <u>Foam Mattings (India) Limited</u> FOMIL reported that, since the ERP was not installed successfully in the Company, they couldn't plan for a data backup. But they used their server to save data.
5.1.6	Other related Issues :		<u>Kerala State Coir Corporation Limited</u> Coir Corporation reported that, they are maintaining Change Control Documents which is mainly through emails and Source code will be handed over to the company by IA shortly. Coir Corporation informed the Government that, they had enthusiastically took steps for implementing e-governance as per the guide lines. They had successfully implemented ERP in time bound manner and the same is working satisfactorily for the last 9 years. Minor deviations from the guidelines happened were due to certain unavoidable circumstances.
5.1.6.1	Training, documentation and change management: The Guidelines stipulated that all users and stakeholders of the new system shall be imparted knowledge about the new systems to ensure proper use and operation of applications and infrastructure. The Guidelines read with Regulation No161 of Regulation on Audit and Accounts issued by the CAG of India also required that all documentations such as the URS, FRS, SRS, Design Documents, Change Control Documents, Training Materials, Source Code etc., shall be kept under safe custody of the IT Division so that maintenance and change management are carried out smoothly.		

	<p>It was observed that COIR CORP did not maintain change control documents, source code etc.</p> <p>COIR CORP replied (June 2020) that they have demanded the IA to provide change control and source code.</p> <p>However, COIR CORP completed the project in February 2014, but the request was made to the IA only after it was pointed out by Audit.</p> <p><i>Recommendation 5.1 : The GoK/PSUs may ensure that the Guidelines for implementation of e-governance initiatives are complied with while implementing ERP systems so that such projects are completed in a time bound manner and intended benefits achieved.</i></p>	<p>Foam Mattings (India) Limited</p> <p>FOMIL reported that, as per the work order executed by them, it was mentioned that training should be provided to all concerned and time to time support on request. It was also mentioned in the payment terms that 10% of the cost will be released only after the completion of training. Since the installation of ERP was not completed within the stipulated time, the company has initiated legal action against the firm (IA).</p>
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