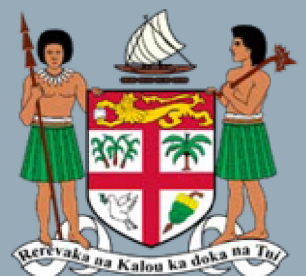




OFFICE *of the* AUDITOR GENERAL
Republic of Fiji

REPORT OF THE AUDITOR-GENERAL OF THE REPUBLIC OF FIJI

Crown Land Lease System



PARLIAMENT OF FIJI
PARLIAMENTARY PAPER NO.58 OF 2024



OFFICE of the AUDITOR GENERAL
Republic of Fiji

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and sustainability through our audits

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To provide an environment where
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2013 CONSTITUTION OF THE
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AUDIT
ACT 1969

ENVIRONMENT
MANAGEMENT ACT

NDP AND OTHER
LEGISLATION

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File: 102

21 May 2024

The Honorable Ratu Naiqama Lalabalavu
Speaker of the Parliament of the Republic of Fiji
Parliament Complex
Gladstone Road
SUVA

Dear Sir

AUDIT REPORT ON CROWN LAND LEASE SYSTEM

In accordance with section 152(13) of the Constitution of the Republic of Fiji, I am pleased to transmit to you my report on Crown Land Lease System – IT Audit Report.

A copy of the report has been submitted to the Minister of Finance who as required under section 152(14) of the Constitution shall lay the report before Parliament within 30 days of receipt, or if Parliament is not sitting, on the first day after the end of that period.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Finau Seru'.

.....
Finau Seru Nagera

Auditor-General



The Office of the Auditor-General – Republic of Fiji

The Office of the Auditor-General is established as an Independent Office by the Constitution of the Republic of Fiji. Its roles and responsibilities include carrying out performance audits to determine whether an entity is achieving its objectives effectively, economically, and efficiently and in compliance with relevant legislation. These audits are carried out by the Auditor-General on behalf of Parliament.

The Office of the Auditor-General notes the impact of its reports to Parliament on the ordinary citizens and strives for accuracy and high-quality reporting including recommendations which are not only value-adding to the entity subject to audit but its customers and the public as well.

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Acronyms

Abbreviation	Meaning
ASP.NET	Web Framework for building Websites and Web Applications
AWP	Annual Work Plan
BCP	Business Continuity Plan
CLLS	Crown Land Lease System
COBIT	Control Objective on Information Technology
DOS	Disk Operating System
DRP	Disaster Recovery Plan
FGIS	Fiji Geospatial Information System
FLIP	Fiji Land Information Portal
FSC	Fiji Sugar Corporation
GIS	Geospatial Information System
IDI	INTOSAI Development Initiative
INTOSAI -P	International Organization of Supreme Audit Institutions - Principles
IS	Information Systems
ISAAS	Information System and Assurance Standards
ISACA	Information Systems Audit and Control Association
ISSAI	International Standards of Supreme Audit Institutions
IT	Information Technology
ITC Services	Information Technology Computing Services Limited
LMR	Land Management Records
MLMR	Ministry of Lands & Mineral Resources
MYLEASE INFO	Application for Lessee on Lease Accounts
NDA	Non-Disclosure Agreement
OSLA	Online State Land Application
SAI	Supreme Audit Institution
SLA	Service Level Agreement
SLAP	State Land Administration Portal
TOAD	Tool for Oracle Application Developments
WGITA	Working Group on IT Audit
WGITA-IDI	IDI Handbook on IT Audit for Supreme Audit Institutions

Executive Summary

Introduction

The Office of the Auditor General conducted an Information Technology (IT) audit on the Crown Land Lease System (CLLS) under the responsibility of the Ministry of Lands and Mineral Resources (MLMR) through the IT Unit. The IT Unit which is a part of the Geospatial Information Management Unit of the Ministry is the executing unit that controls and maintains the CLLS database. The CLLS is specifically used for recording details of all crown land leases including lease status whether its active or not and lease rental records. The system was initially implemented as a Disk Operating System (DOS-Aven) in the 1990's and later upgraded to the oracle system in 2007 which is still in operation to date. This audit was undertaken upon the request of the MLMR to assess the efficiency and effectiveness of the CLLS in managing Crown and State land leases, including lease status and rental records. Refer **Appendix 1** for the MLMR's request for an audit.

Audit Focus

The IT audit delved onto the efficiency and effectiveness of the current state of the CLLS focusing on IT Domains outlined in the IT Audit Manual for Supreme Audit Institutions aligned to the COBIT Framework. The IT Domains included IT Governance, IT Operations, Information Security, Business Continuity and Disaster Recovery and Application Control.

The audit was based on the systems records provided from 1 January 2020 to 28 October 2023.

Overall Audit Conclusion

The results of the audit concluded that the Crown Land Lease System is obsolete, therefore, ineffective, and inefficient to accurately maintain the Crown land lease and State land records. These has contributed to the incorrect calculation of lease interests on arrears over the years.

Significant Findings

The unclear Governance Framework applied have impacted the IT Operations and Application Controls which do not guarantee the proper security and safeguard of the Crown land and State land records due to the series of anomalies highlighted in this report. These irregularities have resulted in the inaccurate calculation of interests charged annually against the lessees overdue premium balances. It was evident that some lessees with expired leases were charged interests during the renewal period. The discrepancy of charging interests on expired leases has been happening over the last three decades. Revenue received on expired leases were recorded only in CLLS and not accounted in the Government Financial Management Information System (FMIS), understating revenue collected annually.

General Recommendation

Overall, there is an urgent need to review and upgrade the entire system so that the accuracy of data input, processed data, and data output are guaranteed and appropriately stored to provide reliable information to the Ministry.



AUDITING STANDARDS

We have conducted this audit in accordance with the International Standards of Supreme Audit Institutions for INTOSAI, WGITA-IDI Handbook on IT Audit for Supreme Audit Institution, ISSAI 5300 for IT Audit professional in conducting IT Audits, Information Systems Audit and Control Association (ISACA), Control Objective on Information Technology Framework 2019(COBIT).

REFERENCE TO COMMENTS

Comments provided by the Ministry of Lands and Mineral Resources have been incorporated in this report.

SUBJECT MATTER AND SCOPE

To assess the efficiency and effectiveness of the Crown Land Lease System on the MLMR Information Technology (IT) Operations and related IT governance controls to safeguard the crown land and state land records.

AUDIT OBJECTIVE AND SCOPE

To determine whether the Crown Land Lease System is effectively handling all Crown land and State land lease records while benchmarking against the five identified IT Domains of the WGITA-IDI Handbook IT Audit Manual, assessing the efficiency and effectiveness of CLLS and ensuring good governance and sustainability of the system.

AUDIT CRITERIA

To assess the efficiency and effectiveness of CLLS, criteria is drawn from the WGITA – IDI Handbook on IT Audit for Supreme Audit Institutions, the COBIT Framework, OAG IT Audit Manual, State Lands Act 1945, State Lands (Leases and Licenses) Regulations 1980, CLLS System Functionality, CLLS User Manual, AWP Application Development 2023-2024 and other documents provided to audit.

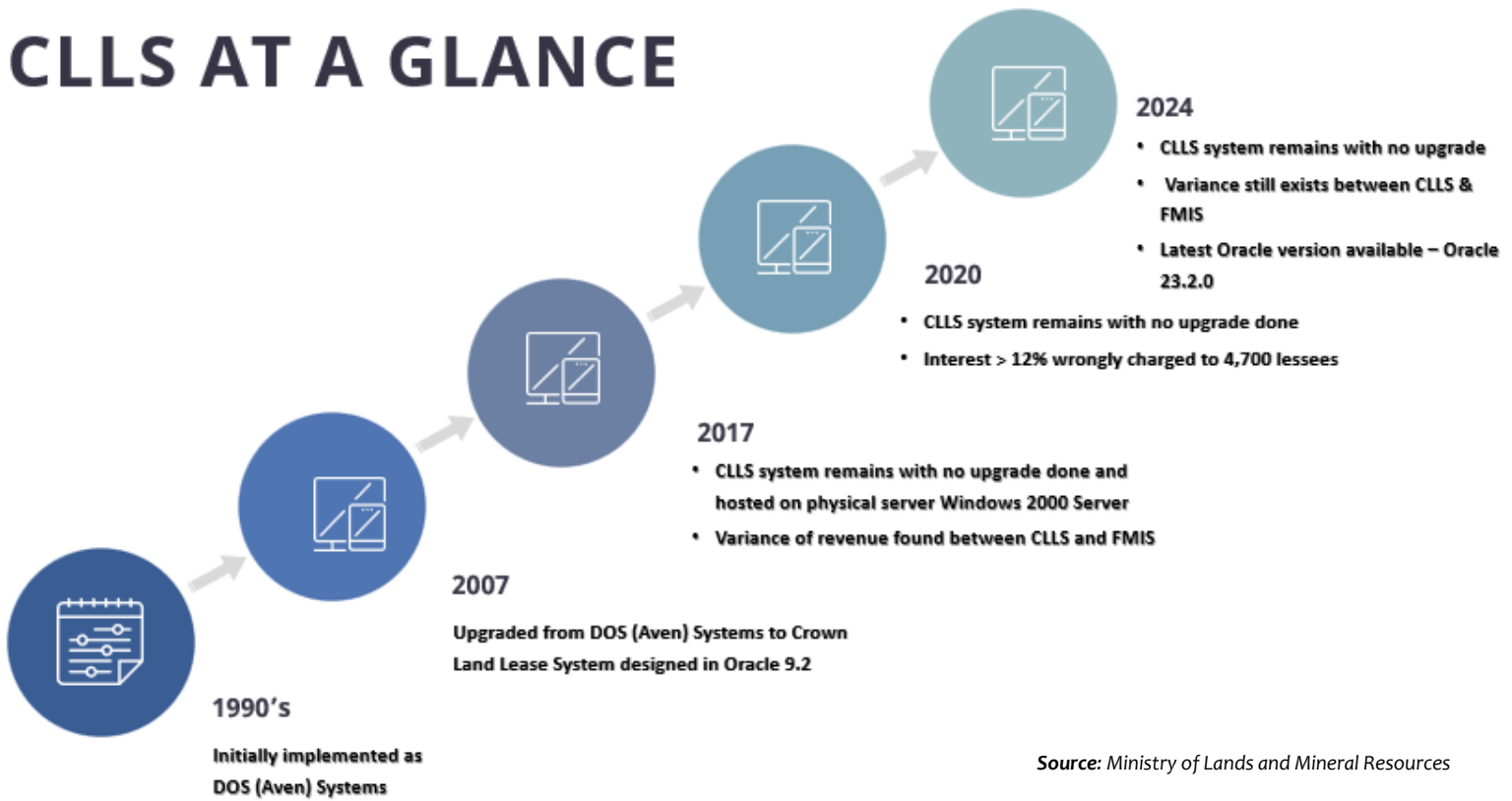
AUDIT METHODOLOGY

Our auditing methodology enables us to carry out effective and efficient audits to probe against issues of accountability, transparency and probity to make recommendations on internal controls. Audit techniques used for gathering evidence and conducting audit analysis included the following:

- Documentary reviews of information provided by the Ministry;
- Interview of key personnel at the Ministry; and
- Analysis of data provided by the Ministry.

1.0 Introduction

CLLS AT A GLANCE



Source: Ministry of Lands and Mineral Resources



TOTAL NUMBER OF LEASES
20,274

01

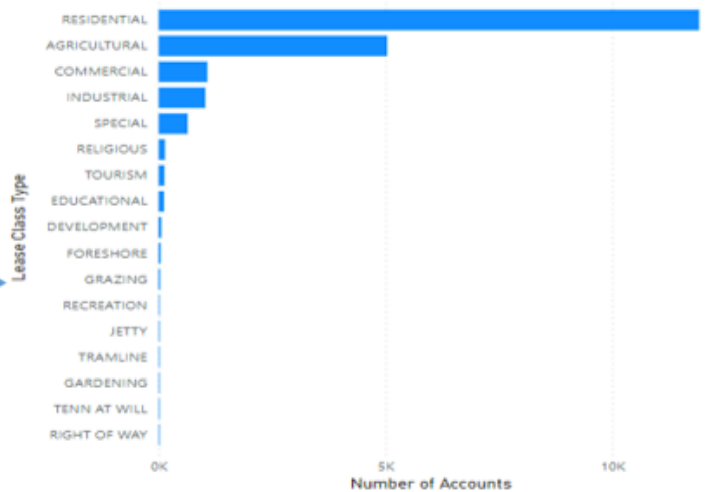


TOTAL EXPECTED REVENUE
As of 28th October 2023
\$38,552,238

02

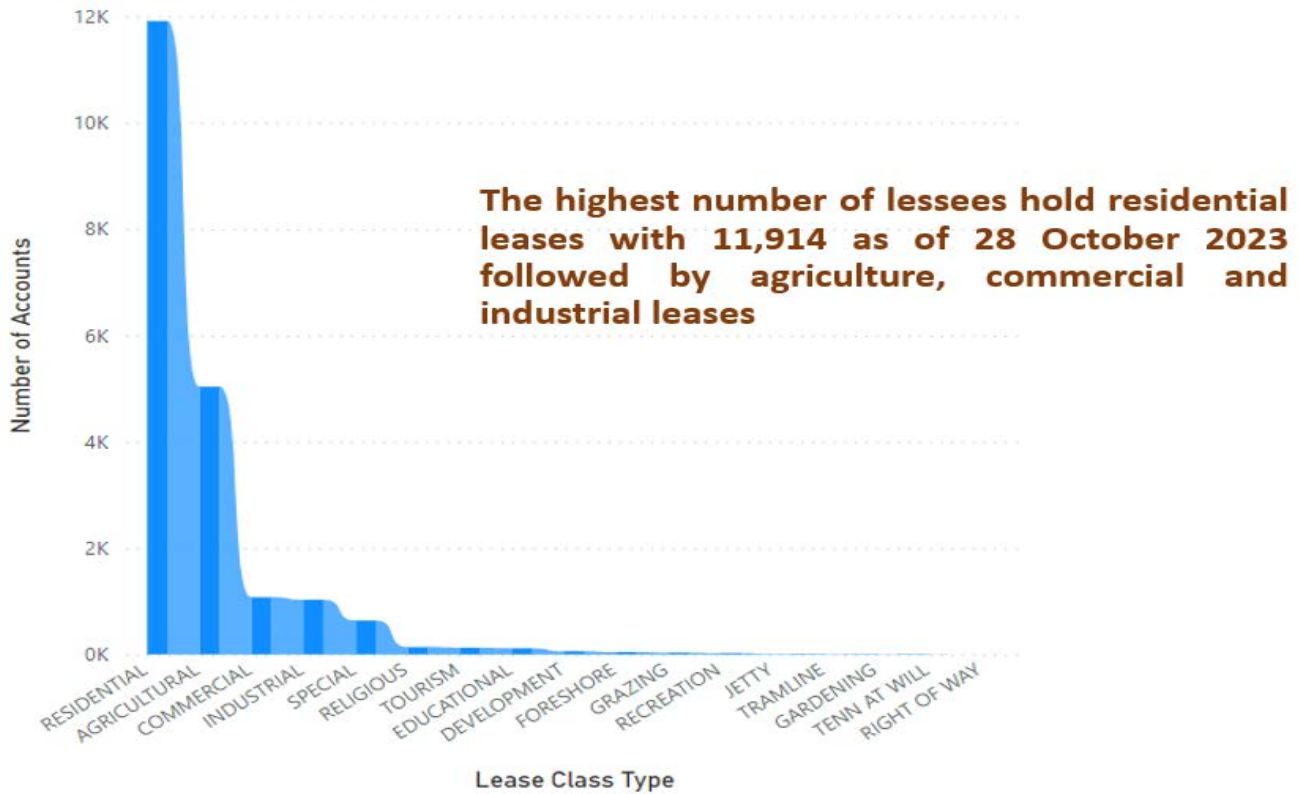
TOP FOUR LEASE CLASS TYPES ARE RESIDENTIAL, AGRICULTURAL, COMMERCIAL AND INDUSTRIAL

03



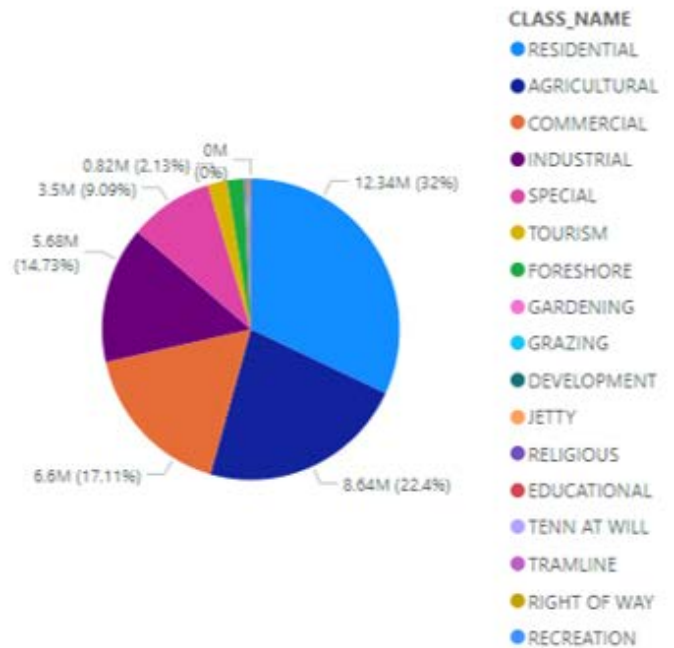
Source: Crown Land Lease System

Number of Accounts by Lease Class Type

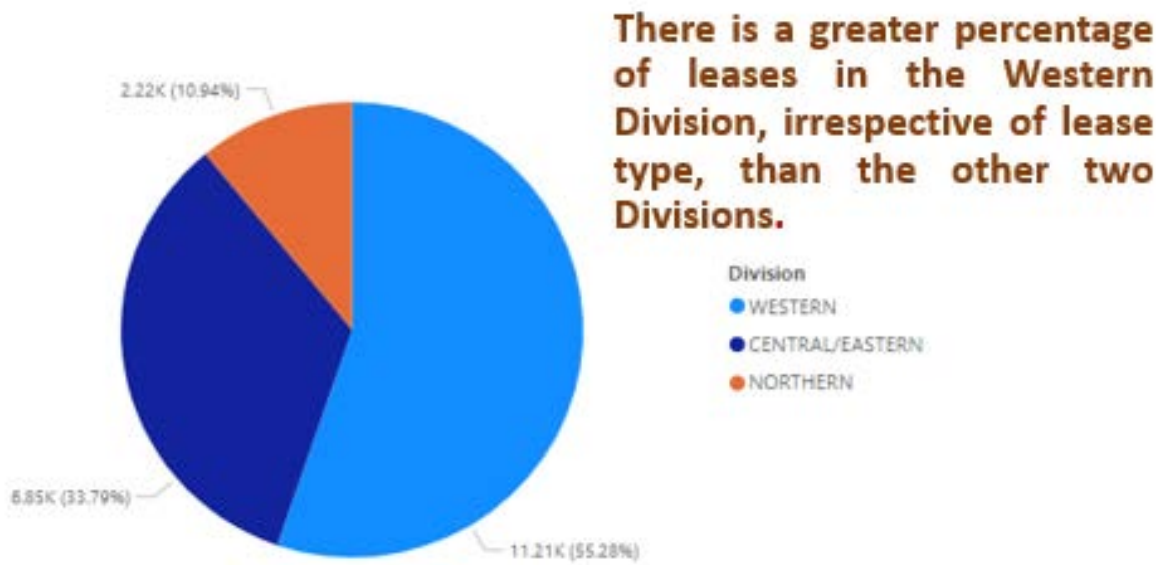


Source: Crown Land Lease System

Residential lease is the most prevalent type of lease documented in the CLLS with total revenue of \$12.4 million as of 28 October 2023 and 32% market share on State land leases



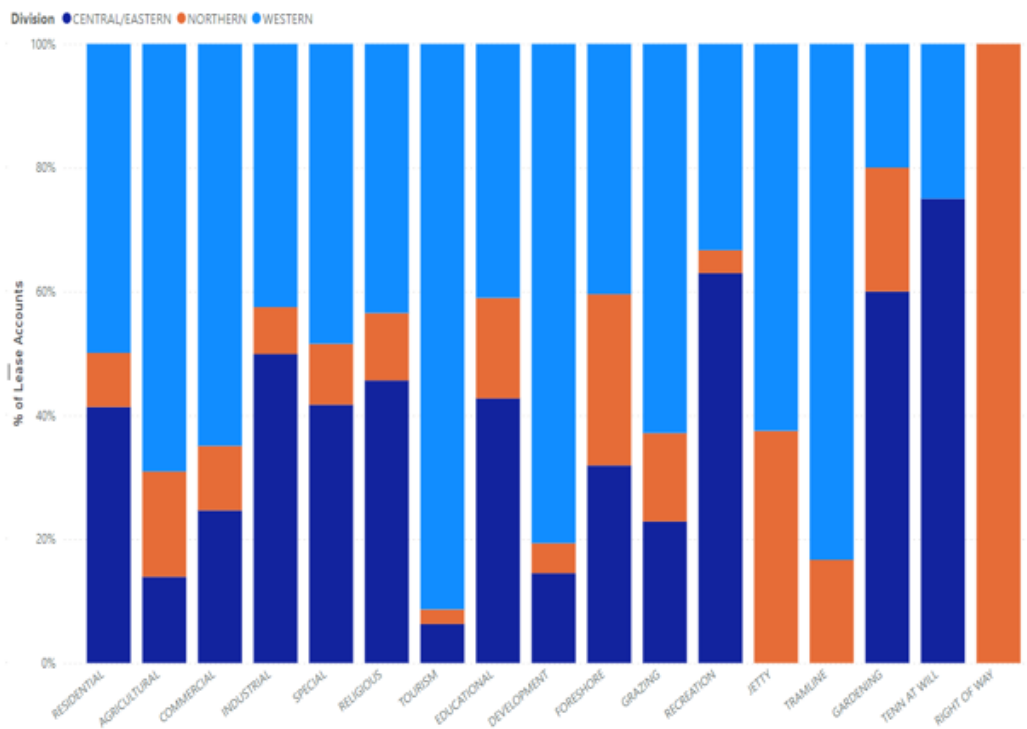
Source: Crown Land Lease System



Source: Crown Land Lease System

PERCENTAGE OF LEASE ACCOUNTS BY LEASE CLASS AND DIVISION

The Western Division has the highest number of leases for agriculture, residential, commercial, tourism, development, grazing, tramline and jetty.



Source: Crown Land Lease System

1.1 Good Practices

The IT Section of the Ministry has demonstrated commendable initiative through the implementation of the Fiji Land Information Portal (FLIP) and Online State Land Application. FLIP serves as a supplementary application to the CLLS, facilitating the storage of crown and State land data through the utilization of Structured Query Language (SQL) platform, offering enhanced convenience in terms of features and interface design compared to Oracle. Additionally, FLIP provides online accessibility to MyLease Info App for lessees, enabling them to conveniently review their respective accounts.

The Ministry of Lands and Mineral Resources have also developed the State Land Administration Portal (SLAP) which is a SQL/ASP.NET based digital solution that is integrated with FLIP and the soon to be completed data entry modules that will replicate CLLS¹.

The Ministry has been having ongoing discussions with ITC is to ensure that connectivity and storage will be a priority for SLAP and the performance assessment measures in place for monthly reporting².

FLIP is currently in use, whilst the finished version for SLAP is anticipated to be completed within the next financial year – pending the management approved definitions of interest charged, reporting and state land administration operating processes³.

¹ MLMR Management Comments – 15/05/24

² MLMR Management Comments – 15/05/24

³ MLMR Management Comments – 15/05/24

1.2 Risk Assessment

This section lists risk levels by issues according to the relevant domain. Issues identified during the audit are assessed and classified into Low, Medium, and High risk. The risk table serves as a valuable tool for identifying, assessing, and managing risks effectively, enabling the Ministry to prioritize and address potential threats to the success and objectives of the CLLS.

Domain	No.	Issue	Risk Level		
			Low	Medium	High
Governance					
	1	Absence of IT Steering Committee		☀	
	2	Absence of IT Strategic Plan		☀	
	3	Capacity and Capability			☀
	4	Management of IT Risks		☀	
	5	Proper Governance Arrangements with ITC Services		☀	
	6	Absence of Business Continuity & Disaster Recovery Plan			☀
IT Operations					
	7	Obsolete Systems still in Use			☀
	8	Application Errors present in CLLS			☀
	9	Absence of Test Environment		☀	
	10	Identified Foreign Key Constraints Impacting Performance and Data Integrity in the CLLS			☀
Information Security					
	11	Absence of Information Security Policy		☀	
	12	Lack of proper Documentation on Backup Procedure for CLLS	☀		
	13	Anomalies in User Access in CLLS			☀
	14	Security of System at Risk without System Timeout		☀	
Application Control					
	15	Lack of Audit Trail in CLLS			☀
	16	Duplication in procedures for Calculation of Arrears			☀
	17	Weakness in Transaction Controls regarding Interest on Arrears			☀
	18	Expired Leases not Properly Captured in CLLS			☀

2.0 Audit Findings by Domains

2.1 IT GOVERNANCE



2.1.1 Absence of IT Steering Committee

The Ministry of Lands and Mineral Resources is currently in the process of implementing a new application known as State Land Administration Portal (SLAP) in order to digitalize the Land Administration Process. The Ministry has also implemented the Fiji Land Information Portal (FLIP) along with the Land Use Division Online State Land Application (OSLA) and the administration of the Crown Land Lease System (CLLS).

Audit noted that the Ministry does not have an IT Steering Committee, which is a foundational practice for IT Governance. Even though this practice is not mandatory, the current state of CLLS and the latest development of other applications necessitate the establishment of an IT Steering Committee consisting of IT personnel and senior executives to direct, review, allocate appropriate resources and oversee major IT initiatives.

Recommendations

It is recommended that the Ministry consider the establishment of an IT Steering Committee to oversee major IT initiatives and ensure that applications developed by the System Application Team is aligned to the business processes required for the Ministry.

Management Comments

- Support the recommendations for an IT Steering committee within the Ministry.
- Roles and responsibilities to be defined/developed.

2.1.2 Absence of IT Strategic Plan

The Fiji Geospatial Information System (FGIS) Quality System Procedure outlines the purpose of the GIS Unit with the inclusion of the IT Unit which includes:

- Management of the LMR Geospatial Data
- Database design for LMR Management (Planned and Ad Hoc)
- Provide IT and system support to MLMR staff
- Vanua - GIS Project Administration and Maintenance

The document outlines the responsibilities of the IT Unit in conjunction with the Geospatial Information Management Business Plan and the Annual Work Plan of the System Application Unit. The audit noted that the Ministry does not have an IT Strategic Plan to steer IT – related decision-making, with IT tasks not being prioritized and executed within the framework of an overarching IT Strategic Plan.

The absence of an IT Strategic Plan can result in a lack of direction, inefficient resource allocation, missed opportunities, misalignment with business objectives, and increased risk and security vulnerabilities. It is important that the Ministry develop an IT Strategic Plan to mitigate these potential consequences and ensure the effective use of IT resources.

Recommendations

It is recommended that the Ministry:

- **Prioritize the development of a comprehensive IT Strategic Plan that outlines clear objectives, goals, and strategies aligning with the overall business objectives.**
- **Needs an IT Strategic Plan in place to ensure a clear direction, efficient resource allocation, identification of missed opportunities, alignment with business goals, and mitigation of risks and security vulnerabilities.**

Management Comments

The Lands Department IT is guided by the policies and guideline set by ITC for overall IT issues. However, there is a need for an IT Strategic Plan for digital transformation for the Ministry.

2.1.3 Capacity and capability

The capacity and capability of staff to handle systems is of great importance. Having staff members who are well-trained and knowledgeable about the systems they work with ensures smooth operations and efficient problem-solving.

While the system application team consisted of a Senior Systems Analyst and two interns on acting appointments, the audit noted that the resources was not sufficient to effectively handle the

workload and demands, considering other applications that is currently being developed in – house by the Ministry.

It was also noted that proper training was not provided to the intern staff that are currently managing the backend of CLLS through the administration of TOAD application. Without proper training, the challenges in understanding the functionalities and intricacies of the TOAD application can lead to inefficiencies, errors, and potential risks to the system's stability and security.

Recommendations

It is recommended that the Ministry:

- **Allocate adequate resources to the Application Support Team and provide them with the necessary hardware, software, and tools to perform their work efficiently and effectively.**
- **Provide relevant training for the professional development of the Application Support Team to ensure the smooth functioning of the applications they support.**

Management Comments

Recommendations are supported to have highly skilled IT Team in terms of resources, staffing and training that is able to realize the goals of digital transformation effectively.

2.1.4 Management of IT Risks

The management of IT risks involves identifying, assessing, addressing, and monitoring potential risks that could impact an organization's IT infrastructure and operations. By implementing effective risk management strategies, the Ministry can enhance their cybersecurity measures, improve IT operations, and strengthen their overall risk and security posture. It is essential to have a proactive approach to managing IT risks to mitigate potential threats and ensure the smooth functioning of IT systems.

Audit noted that the Ministry did not have an IT Risk Management Policy to adequately identify, evaluate, and mitigate potential IT risks. In response, the Ministry formulated a Draft Risk Management Policy in 2022 to recognize potential threats that may impact the Ministry's operations. Despite the policy's inclusion of implementation guidelines, the audit revealed that, at the time of assessment, the IT Unit did not maintain an IT Risk Register to document existing IT risks within the Ministry, including those related to the performance of the CLLS.

Recommendations

It is recommended that the Ministry:

- **Develop an IT Risk Management Policy to effectively identify, assess and address potential IT risks.**
- **Align the IT Risk Management Policy to the Risk Management Policy that has been developed for the Ministry.**

Management Comments

The Ministry agrees with the recommendations. The IT Team will need to develop a separate IT Risk Management Policy. This will cover not only CLLS data, but any information that is captured digitally.

2.1.5 Proper Governance Arrangements with ITC Services

The Crown Land Lease System has been hosted at ITC Services from 2007 with ITC Services managing the daily backup, the monitoring and maintenance of Oracle software license and the management of the CLLS server administration.

Audit noted the following:

- The Ministry has a Non-Disclosure Agreement with the ITC Services for hosting of CLLS at the Government Data Centre⁴. The Non-Disclosure Agreement was not provided during the audit.
- There was no upgrade done by ITC Services for the current Oracle version hosting CLLS to the latest Oracle version after the in – house evaluation by ITC services that applications running on Oracle will move to other platforms.
- There was no support provided by ITC Services for the upgrade of the current Oracle version of CLLS. ITC Services only maintains a contract on the maintenance and support of the current Oracle version of CLLS. Without any support provided for the upgrade, there will be compatibility issues and security susceptibilities which could result in performance degradation, potential system crashes, and difficulties in integrating with other software or systems.

Recommendations

It is recommended that the Ministry ensure the following:

- **The Non-Disclosure Agreement between the Ministry and ITC Services is reviewed accordingly while taking into considerations compliance of the NDA Agreement and the governance of CLLS.**
- **Ensure proper review, assessment, and feasibility of CLLS in terms of sustainable application platforms taking into consideration ITC Services capability of providing support on Oracle application and considering factors such as cost, compatibility, customization, and long-term support.**
- **Coordination with ITC Services in terms of the support available for Oracle platform and maximize support provided.**

Management Comments

The Ministry agrees with the recommendations. All development for the ongoing development for FLIP must be documented and service level agreement be reviewed annually.

⁴ Meeting Minutes between ITC Services and MLMR dated 16/02/24.

2.1.6 Absence of Business Continuity and Disaster Recovery Plan

A Disaster Recovery Plan (DRP) is a crucial tool for organizations to minimize the negative effects of a disaster on their operations, customers, and reputation. It also plays a vital role in ensuring the continuity of critical business functions and processes during and after a disaster.

Audit noted that the Ministry does not have a Business Continuity Plan and a Disaster Recovery Plan in place to mitigate any risks that may arise in the management of CLLS.

Without these essential plans in place, there is a heightened risk of data loss, extended downtime in the event of system failures or disasters, potential compliance violations, financial losses, and operational disruptions.

Recommendation

It is recommended that the Ministry develops a Disaster Recovery Plan and Business Continuity to mitigate risks, minimize disruptions, and safeguard the organization's operations and data.

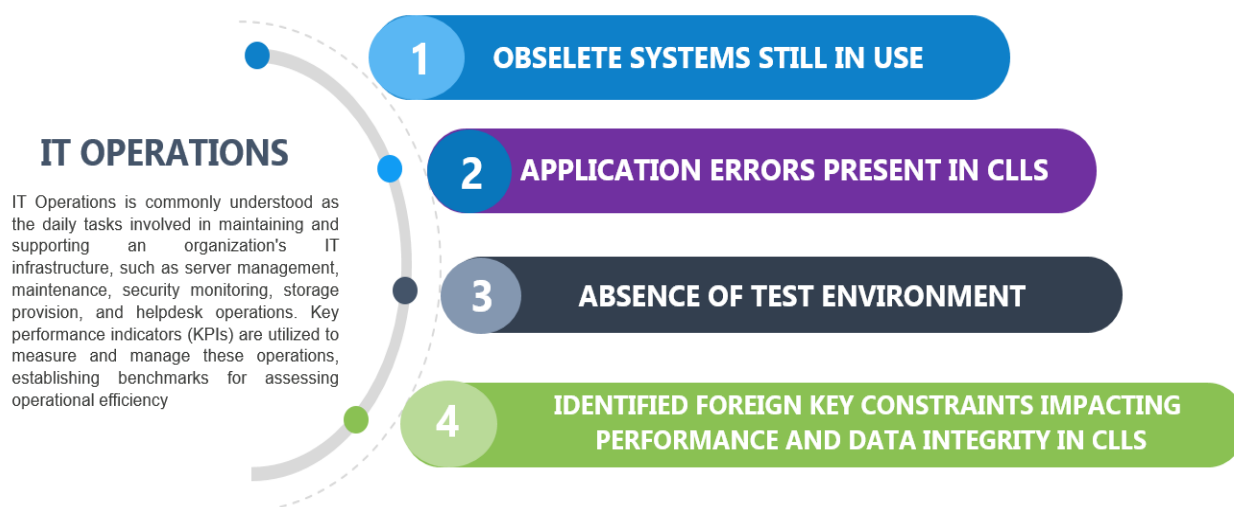
Management Comments

The Ministry agrees with the recommendations. The Disaster Recovery Plan and Business Continuity for CLLS must be developed and its content tweaked once SLAP is commissioned to take over CLLS.

Audit Conclusion on IT Governance Issues

Based on the issues identified in IT Governance domain, it can be concluded that the essential structures, processes, policies and plans for effective IT governance, risk management, relevant resources and continuity planning are lacking. Addressing these gaps is crucial to ensure the Ministry's IT functions are aligned with business goals, risks are managed effectively, and there is resilience in the face of potential disruptions.

2.2 IT OPERATIONS



2.2.1 Obsolete Systems Still in Use

The Crown Land Lease System (CLLS) is specifically used for recording details of all Crown Land leases including lease status whether active or not and lease rental records. The system was initially implemented as DOS (Aven) in the 1990's and later upgraded in 2007 to the Oracle System which is in operation until to date.

The CLLS is hosted within the ITC Services Data Center. Presently, the system is deployed on a virtual server residing on a physical server running the Windows 2000 Server operating system. The database component of the CLLS was developed using Oracle version 9.2.

Audit noted that the operating system of the physical server that is hosting CLLS is Windows Server 2000, an outdated operating system. Windows 2000 has been obsolete and is no longer supported by Microsoft since 2005. Refer to **Appendix 2**.

In addition, the Oracle 9.2 version utilized in the development of CLLS is now considered outdated and no longer supported by Oracle. Oracle Corporation discontinued premier support for Oracle 9.2 in 2007. Refer **Appendix 3**.

Due to the incompatibility of the CLLS web application with Windows 11 Operating System, the system assistants continuously need to upload the CLLS database data to the Fiji Land Information Portal (FLIP) on a daily basis to process, store and extract the Crown lease and State land records for the convenience of end – users of the application. FLIP is a web application built on Structured Query Language (SQL) database that facilitates the incompatibility of the CLLS web application forms with Windows 11 Microsoft Edge.

The above findings indicated that the CLLS is running on an outdated operating system and database version. The risks associated in using obsolete and unsupported software can result in system downtime and crashes, rising maintenance costs and support, decline in productivity and system becoming vulnerable to exploiters because security updates, patches and upgrades are not provided.

Recommendations

It is recommended that the Ministry conduct the following:

- Upgrade the CLLS server to the latest Windows Server operation system.
- Upgrade the database version of CLLS to the latest Oracle database version available.
- Ensure appropriate Non-Disclosure Agreements are in place with ITC Services on the support in regard to server maintenance.
- Ensure appropriate Service Level Agreements are in place with Oracle vendor for better support of Oracle.
- Review and make assessments on the sustainability of Crown Land Lease System based on the current status of the Operating System and database version of Oracle hosting CLLS.

Management Comments

The Ministry agrees with the recommendations. However, since 2017 the Ministry has taken it upon themselves to develop - well within the resources available - a new system to anticipate the eventual event when CLLS ceases to function.

The Development of the Service Level Agreement for the new State Land Administration Portal (SLAP) will be in the hands of the digital transformation team and vetted and approved by the Ministry IT steering committee.

2.2.2 Application errors present in CLLS

Error messages are messages displayed to users by an operating system or application when an unexpected situation occurs. In most cases, error messages are displayed using operating system or application dialog boxes. Error messages are necessary when user intervention is required or to convey important warnings.

Audit noted a total of 13 errors generated while accessing the system menus and submenus of the CLLS as summarized below into four main error categories.

Table 1.1: List of Error Messages currently in CLLS

No	Message	Cause	Total as per error message
1	FRM-40735: WHEN-NEW-ITEM-INSTANCE trigger raised unhandled exception ORA-06502	Application design error. The current trigger raised an exception (other than FORM_TRIGGER_FAILURE), but it did not handle the exception.	5
2	FRM-41361: Cannot navigate out of current form in Enter-Query mode	You are in Enter-Query mode and trying to navigate to another form when using Open Form.	2

No	Message	Cause	Total as per error message
3	FRM-40831: Truncation occurred; value too long for field CATEGORY_NAME	Application design error. A trigger, query, or user exit read a value into an item that is not long enough to hold the entire value. The item truncated the value.	1
4	REP-0736: There exist uncompiled program unit(s)	Reports are not compiled properly, or a different schema is getting connect to instead of the CLM schema	3
5	FRM-40010: Cannot read from CLL_REP_FRM_PAY_ARR	Form cannot read from the directory source or system	2

Source: Crown Land Lease System

Refer to **Appendix 4** for samples of screenshots of the above error messages.

Recommendations

It is recommended that the Ministry conduct the following:

- Rectify all errors generated by the system with steps properly documented.
- Review and make assessments on the sustainability of Crown Land Lease System based on the current impact of such errors.

Management Comments

- The Ministry agree with recommendations to rectify all errors, however any rectifications on the current Oracle version of which CLLS is on risks data loss and system crash.
- The Ministry agree with the recommendations to review and make assessments on sustainability of Crown Land Lease System based on the current impact of such errors

2.2.3 Absence of Test Environment

A software testing environment plays a crucial role in the development process by allowing creators to trial run software, identify bugs, and assess product quality. By simulating a live environment, developers can address issues before they impact users, ensuring a smoother production stage. This process helps analyze the software from different perspectives like security, performance, user experience, and functionality, ultimately leading to a more robust and reliable end product for users.

Audit noted that the Ministry does not have a test environment that is a replica of CLLS in which proper tests to the system could be conducted along with risk mitigation, improving quality, functionality testing, performance testing, and security testing.

Recommendation

It is recommended that the Ministry ensure there is a test environment for Crown Land Lease System.

Management Comments

The Ministry agrees with the recommendations. Test environments for CLLS may not be possible given the restricted nature of the versions for ORACLE. However, the test environment for SLAP has been incorporated and is being used to deploy the needful into the operational platform.

2.2.4 Identified Foreign Key Constraints Impacting Performance and Data Integrity in CLLS Database

Foreign key constraints play a crucial role in maintaining data integrity and ensuring relational consistency in a database. By enforcing referential integrity between tables, foreign key constraints help to establish and maintain the relationships between different entities in a database.

During the health check of the database, it was noted that there were 17 Foreign Key constraints identified from the health check report which caused poor performance on the CLLS database that can lead to potential issues such as data integrity problems or errors during data manipulation operations.

Recommendations

It is recommended that the Ministry ensures the following:

- **Column definitions in the referencing table match the columns in the referenced table to maintain data consistency and avoid potential issues with Foreign Key constraints.**
- **Review and potentially update the column definitions to align with the requirements of the Foreign Key constraint for proper data management.**

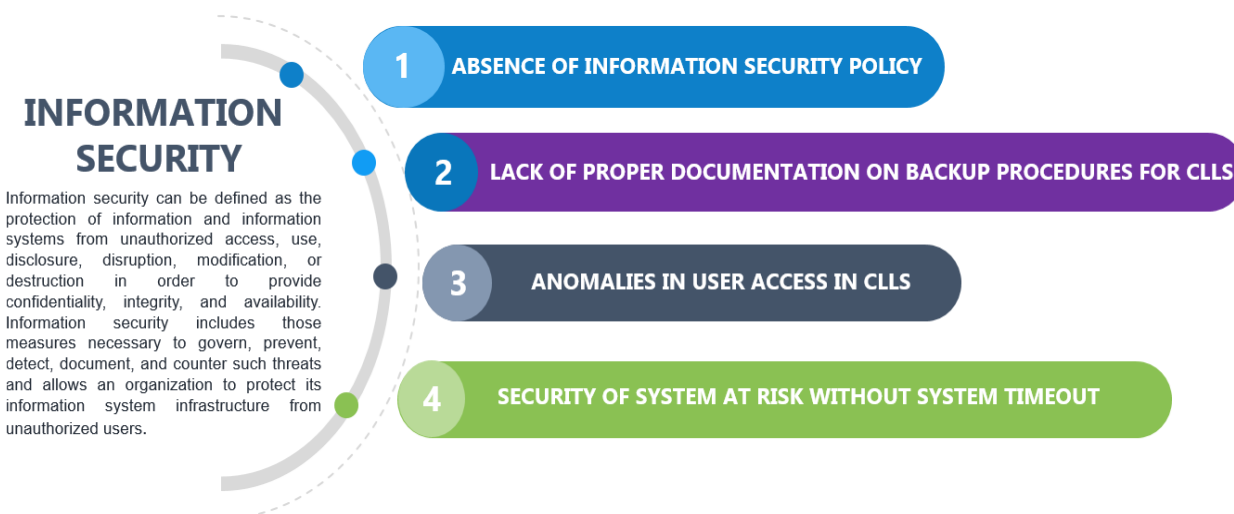
Management Comments

The Ministry agrees with the recommendations. For CLLS, this task will be detrimental to the aging ORACLE platform, however, SLAP has been very clear with the column definitions and formats that can be integrated with the GIS platforms and other platforms within Government which work predominantly with SQL.

Audit Conclusion on IT Operations Issues

Based on the issues identified in IT Operation domain, it is concluded that the Ministry is facing significant challenges in terms of outdated technology, system reliability, testing procedures, and data integrity. In terms of performance, the current system capacity and application state of CLLS does not meet the current need of the Ministry. Addressing these issues is crucial to improve system performance, reliability, and overall operational efficiency. Implementing modern systems, resolving application errors, establishing a test environment, and ensuring database integrity through foreign key constraints are essential steps towards enhancing the organization's IT infrastructure and operations.

2.3 INFORMATION SECURITY



2.3.1 Absence of Information Security Policy

Information security policy or IT security policy is a formal document that outlines the guidelines, expectations, and overall strategy employed by an organization to safeguard the confidentiality, integrity, and availability of its data. The purpose of an Information Security Policy is to establish a framework for protecting sensitive information and ensuring the secure operation of an organization's IT systems.

Audit noted that the Ministry does not have an Information Security Policy to safeguard the integrity and confidentiality of data in CLLS. Information Security Policy also acts as a guidance in terms of providing consistency in monitoring and enforcing compliance in a system.

Recommendation

It is recommended that the Ministry develops an Information Security Policy for protecting information generated from CLLS and enforcing compliance in the system.

Management Comments

The Ministry agrees with the recommendations.

IT Unit will have to develop the Security Policy for all its data and information hubs – not only for CLLS data– but also for all data that will eventually be on the Ministry’s SQL platform.

2.3.2 Lack of proper documentation on backup procedures for CLLS

Proper documentation of an application is essential for understanding, maintaining, collaborating, troubleshooting, and planning for its future. It enhances productivity, reduces errors, and enables efficient development and support processes.

Audit noted that the backup procedures for CLLS were not properly documented. While the backup of CLLS is done by ITC Services, the Ministry did not have proper documentation of the processes involved that would help the Ministry on system restoration in the event of a system failure.

Recommendation

It is recommended that the Ministry review the current Data Backup and Storage Guideline Policy and ensure that the backup of CLLS is included and outlined in the policy.

Management Comments

The Ministry agrees with the recommendations.

The review of the backup and storage guidelines will warrant them to be automated, hence the SLAP will be employing the automated backup and storage guidelines – provided the policy is agreed upon and approved.

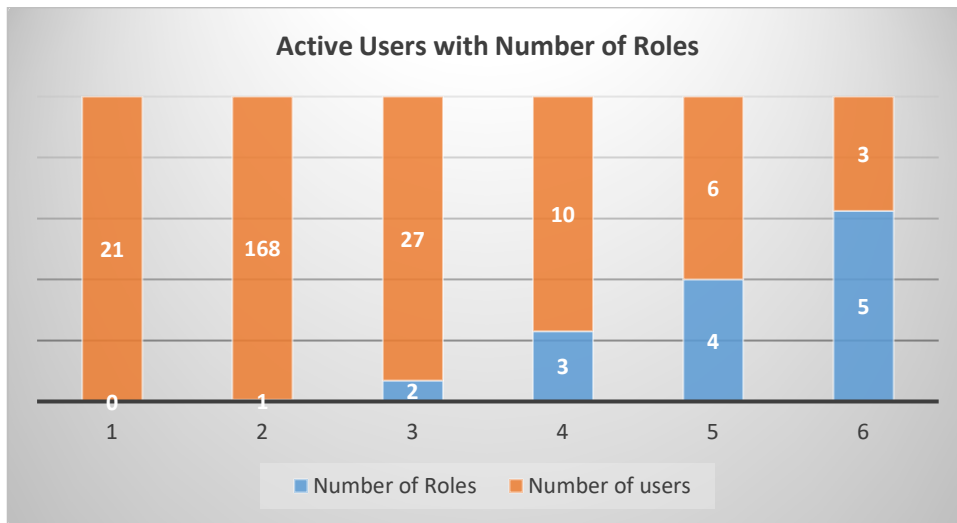
2.3.3 Anomalies in User Access in CLLS

Overall, user access controls are essential for protecting data, maintaining confidentiality, meeting regulatory requirements, preserving system integrity, and ensuring accountability within an organization's IT environment.

Audit noted the following anomalies for users in CLLS:

- There were 21 CLLS active users without clear identified roles and module granted in the system.
- Out of the more than 200 users in CLLS, there were 46 users that had more than one role. Refer to the **Graph 1.1** for details.

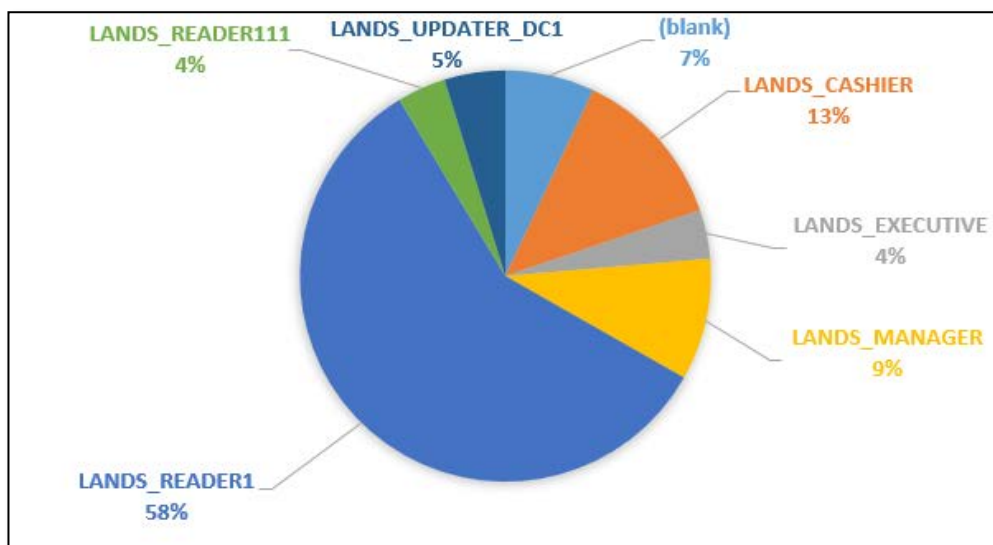
Graph 1.1: Active users with Number of CLLS Roles



Source: Crown Land Lease System

- There were 30 users that had Lands Manager Access. Users with Lands Manager privileges can access the References Module which is used to maintain the integrity of the tables in the database. Any changes at the Reference Module will be reflected at the front – end applications of CLLS.

Graph 1.2: Percentage of users according to roles



Source: Crown Land Lease System

The above highlighted the serious lack of controls in place in the administration of users in CLLS.

Recommendation

It is recommended that the Ministry conduct the following:

- Assess the current users of the system and properly assign permissions to the system.
- Properly assign roles and remove any duplications of user roles.
- Review users with Lands Manager access and properly assign to relevant users only.
- User access and activities should be regularly monitored.

Management Comments

The Ministry agrees with the recommendations.

CLLS users at the moment are being limited to only the data entry staff (registry, cashiers, and executive assistants) for data input. All consumers of the information are being catered for on Fiji Information Portal (FLIP).

With State Land Administration Portal (SLAP), all users are being categorized by their level of influence on the data dependent on their employment positions.

2.3.4 Security of System at Risk without System Timeout (Recurring Issue)

System timeout is essential for maintaining system security and efficient as it helps to automatically log out inactive users, preventing unauthorized access and protecting sensitive data. Additionally, system timeouts help conserve resources, reduces the risk of system overload, crucial for ensuring the overall performance and security of a system.

There was a total of 15,745 active sessions from 2February 2023 to 6 December 2023 that had null values recorded for LOGOFF_DAY, LOGOFF_TIME and ELAPSED_MINUTE. This indicated that the system could not properly record the times users access the system while maintaining valid system timeout in the process.

This indicated that the system was unable to accurately track the access times of users and maintain a valid system timeout. This issue could potentially impact the security and monitoring capabilities of the system, as it may not be effectively tracking user activity and enforcing appropriate session timeouts.

Recommendations

It is recommended that the Ministry:

- Review and update the system's logging and session management mechanisms, addressing null values in logoff day, logoff time, and elapsed minutes.

- Ensures proper logging procedures, accurate access times, and correct timeout settings are crucial for system security and functionality improvement.

Management Comments

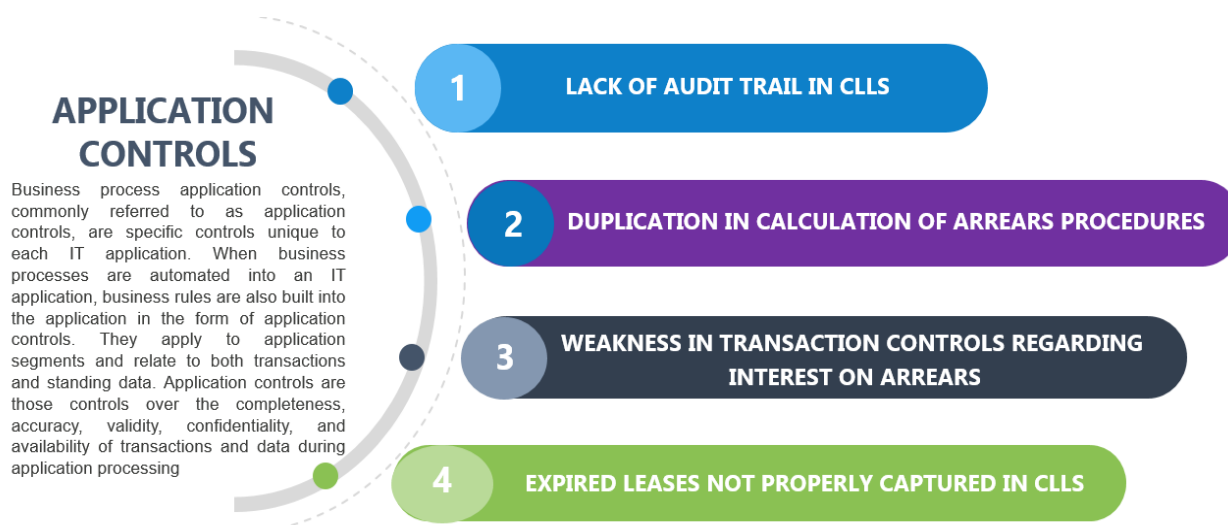
The Ministry agrees with the recommendations.

Logs on CLLS have not been able to perform as needed due to versioning and the systems failure to communicate with the hardware being used to access the legacy system.

Audit Conclusion on Information Security Issues

Based on the issues identified on Information Security domain, it is concluded that the Ministry is facing significant vulnerabilities in terms of data security, backup processes, user access control, and system security. There is also a lack of prioritization on information security compliance and proper administration of users. Addressing these issues is crucial to mitigate risks, protect sensitive information, and ensure the overall security and integrity of the organization's systems and data. Developing and implementing an Information Security Policy, documenting backup procedures, improving user access controls, and implementing system timeouts are essential steps towards enhancing the Ministry's security position.

2.4 APPLICATION CONTROL



2.4.1 Lack of Audit Trail in CLLS

Audit trails essential for maintaining compliance, ensuring transparency, holding individuals accountable, enhancing security, and facilitating problem resolution within an organization. They provide a reliable and documented trail of activities, which is crucial for maintaining trust, mitigating risks, and demonstrating good governance.

Audit noted that the audit trail function has not been enabled in CLLS. The audit trail feature is available as part of the system features of Oracle but not activated to capture activities performed by users of the system. Refer **Figure 1.1** below.

Figure 1.1: Audit Trail Configuration in CLLS

NAME	VALUE	DEFAULT	DESCRIPTION	SES_MODIFIABLE	SYS_MODIFIABLE
audit_sys_operations	FALSE	YES	enable sys auditing	NO	NO
audit_trail	NONE	YES	enable system auditing	NO	NO

Source: Crown Land Lease System

For this, audit could not identify certain changes done to the reference module which is used to maintain the tables in the database and properly analyze changes made to the system.

Recommendations

It is recommended that the Ministry consider enabling the audit trail function of the system so that changes made to the database are properly captured for monitoring of user activities.

Management Comments

The Ministry agrees with the recommendations. Although difficult in CLLS, SLAP will employ activity log table organic to all SQL databases.

2.4.2 Duplication in Calculation of Arrears Procedure

Procedures in Oracle programming provide a way to encapsulate and reuse code, improve performance by reducing network traffic, and enhance security by controlling access to database objects. They are commonly used for tasks such as data manipulation, data validation, business logic implementation, and complex calculations within the Oracle database environment.

There are three valid procedures for calculation of arrears namely Arrears VAT Old, Arrears VAT and Arrears VAT 2. Audit noted that all three procedures were active and enabled at the backend of the CLLS application, however, audit could not substantiate which of the three procedures is the default procedure for the calculation of arrears. Refer to the Arrears Procedure in **Table 1.2**.

Table 1.2: Arrears Procedure Table

Owner	Type	Name	Status
OP\$LANDS	PROCEDURE	ARREARS_VAT_OLD	VALID
OP\$LANDS	PROCEDURE	ARREARS_VAT1	VALID
OP\$LANDS	PROCEDURE	ARREARS_VAT2	VALID

Source: Crown Land Lease System

The above finding indicated that the changes made to the procedures at the backend of CLLS were not monitored.

Recommendations

It is recommended that the Ministry conduct the following:

- Review the Arrears VAT procedure and remove duplicate procedures if conflicting.
- Document any changes made at the backend regarding assessment of procedures.
- Remove or disable unwanted or unnecessary procedures from the system.

Management Comments

The Ministry agrees with the recommendations.

With confirmation from LMR Management, the procedure to cater for VAT, Interest and Rent calculation will be employed.

For CLLS, it may encourage the early demise of the platform since its outdated nature and the towering communication incompatibility.

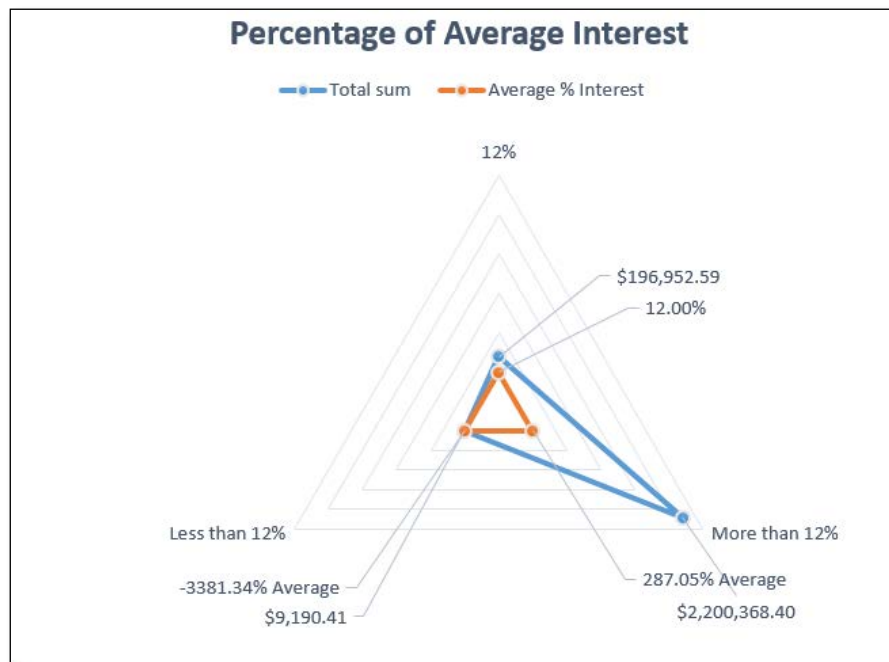
2.4.3 Weakness in Transaction Controls Regarding Interest on Arrears

In the State Lands (Leases and Licenses) Regulations 1980 under Section 21 (k), it states “that in the event of any rent being outstanding for a period of more than one month from the date upon which such rent is due, such outstanding rent may bear interest until payment at the Government interest rate of 12% per annum”.

The following were noted on transaction controls:

- Interests were added to lessee accounts that were in arrears as of 31 December each year, regardless of the account balance, credit balance, or account expiration. The system automatically adds interests to lessee accounts on 1 January annually.
- There were no controls and error handling mechanisms in place to effectively flag incorrect automated transactions.
- From 2020 to 2023, interests on arrears added to several lessees accounts were either more or less than 12%.
- The percentage of interest ranged from -240,000% to 865,200% instead of the 12% configured in the system. For 2020, there were 4,700 lessees charged with interest of more than 12% totalling \$2,200,368 with an average percentage interest rate of 287% while 89 lessees were charged interests of less than 12% amounting to \$9,190 with an average percentage rate of -3,381%. Refer to **Graph 1.3** below.

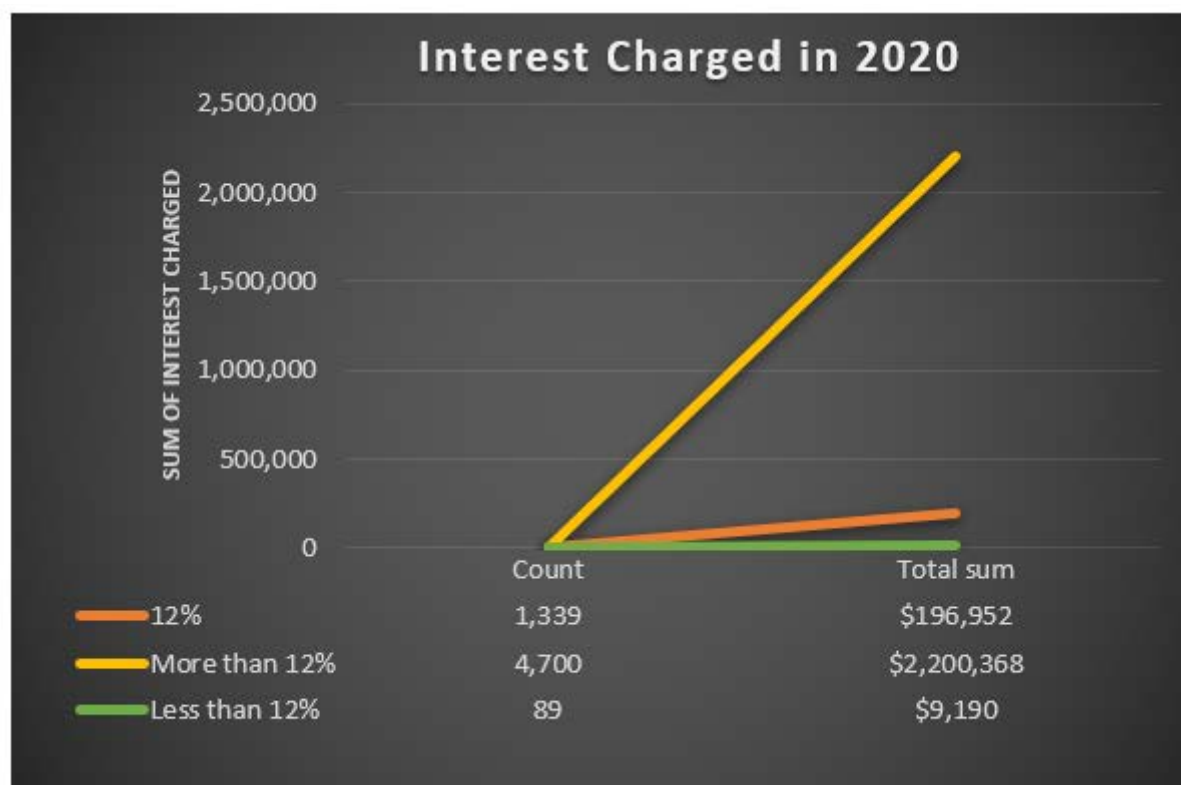
Graph 1.3: Percentage of average interest



Source: Crown Land Lease System

- In 2020, only 1,339 lessees or 7% of the total 18,058 were charged with the correct interest rate of 12%. With the difference in the interest rates charged, the new account balances generated by the system are inaccurate thus affecting the correctness of the opening balances of the lessee accounts. Refer **Graph 1.4** below.

Graph 1.4: Interest Charged in 2020



Source: Crown Land Lease System

- The system lacks an error handling feature to manage exceptions for accounts with credit balances or expired accounts, as interest on arrears should only be added to outstanding accounts as stated in Section 21 (k) of the State Lands (Leases and Licenses) Regulations 1980.
- For the calculation of arrears procedure, two variables report date of type DATE and date parameter of type VARCHAR2 was initialized to NULL with no validation on the input format which could lead to runtime errors.

Recommendations

It is recommended that the Ministry conducts the following:

- Review and appropriately adjust accounts that have been affected by the issues highlighted.
- Coding and scripts that effect the interests added onto the arrears should be reviewed.

- All lessee accounts should be reconciled at the beginning of a new calendar year in order to make proper adjustments to correct the accounts that have been charged with the wrong interest rate.
- Review error handling mechanisms to ensure data integrity of CLLS.
- Effectively review and validate input mechanisms on Calculation of Arrears procedure focusing on the date parameter format along with validation input.

Management Comments

The Ministry agrees with the recommendations. For CLLS, this can be employed at the risk of expediting the systems demise. However, for SLAP, the necessary reviews are planned to be conducted before the SLAP release.

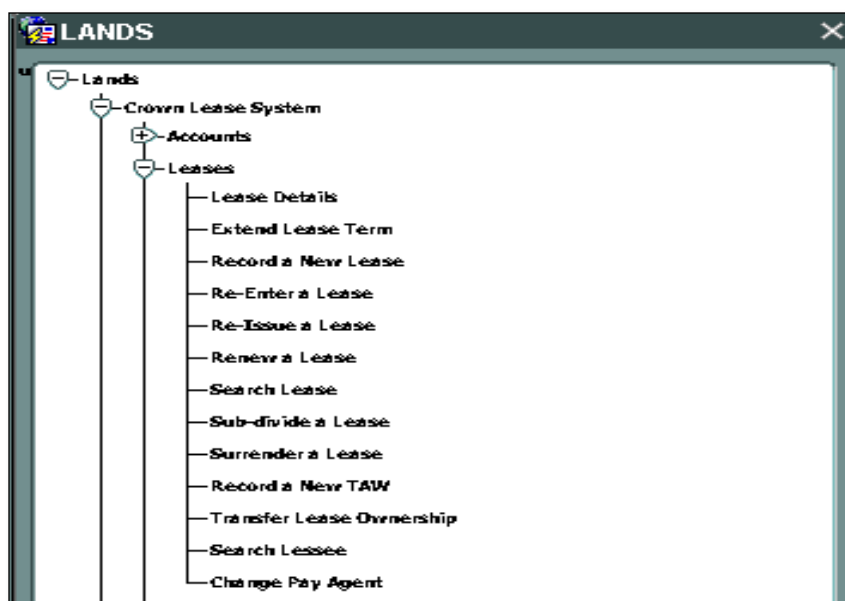
2.4.4 Expired Leases Not Properly Captured in CLLS

The Ministry receives one-off payments for large listings of lessees such as the Fiji Sugar Corporation, Post Fiji, and Housing Authority. For some payments received from FSC, the accounts that were updated in the system were expired leases.

The following were noted for expired leases:

- The CLLS was not configured to capture expired leases. Payments received on expired leases, like FSC, were batched into individual accounts using the Record Batch Payment menu, with rent from expired leases not considered as revenue.
- There were no menu options in the CLLS application in which details of expired leases can be properly recorded as the Ministry continued to receive land rents. Refer **Figure 1.2** below.

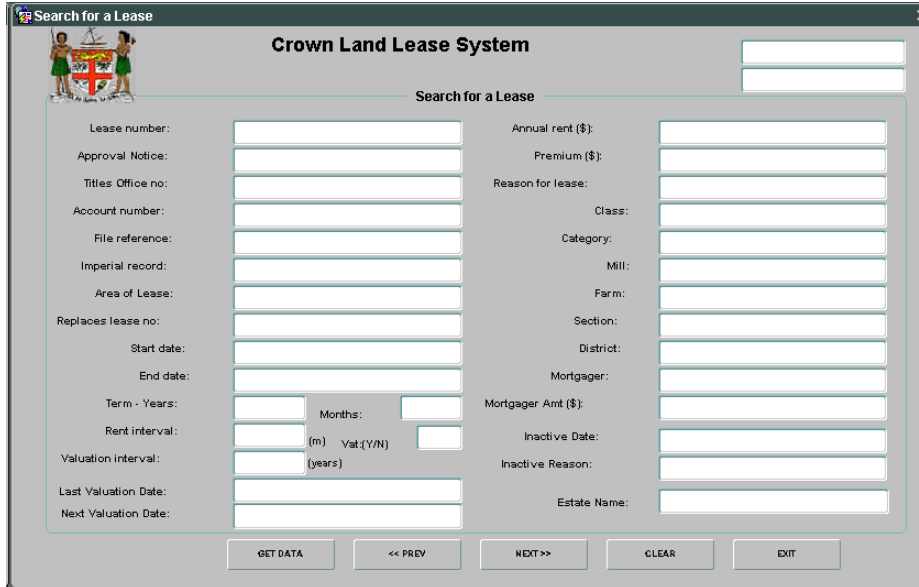
Figure 1.2: CLLS Lease Menu Options Available



Source: Crown Land Lease System

- The CLLS commit button to activate the status of leases from active to Inactive (Expired lease) was not functioning in Oracle forms when there was system upgrade for end – users from Windows 7 to Windows 10. Refer to **Figure 1.3** for CLLS Screenshot.

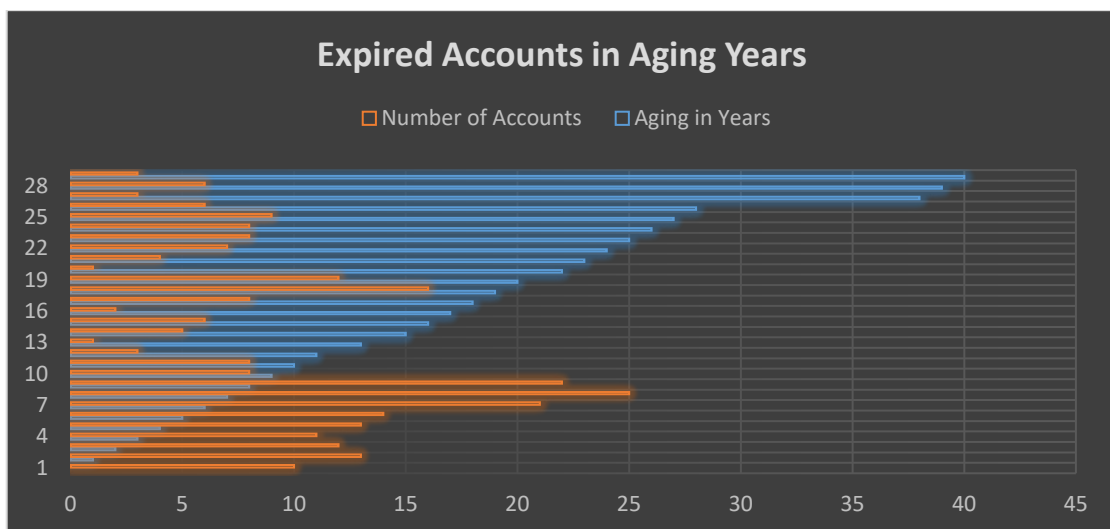
Figure 1.3: Commit button missing in Search for a Lease Page



Source: Crown Land Lease System

- In 2022 and 2023, payments received from FSC for 149 accounts included 141 accounts for expired leases. The expired accounts totalled 455 transactions amounting to \$97,331.
- Interest on arrears was still being applied to expired accounts. Among the 141 expired accounts for FSC, 41 accounts had interest added despite being expired.
- The expired accounts from CLLS have been expired for a period ranging from 6 to 40 years. Refer **Graph 1.5** below.

Graph 1.5: Aging of Expired Leases



Source: Crown Land Lease System

It is recommended that the Ministry ensure the following:

- The application is customized to effectively capture and handle expired leases while ensuring that rental on expired leases is appropriately accounted for and classified.
- Reintroduce the system commit button for inactive accounts to allow for the proper recording of details, especially after system upgrades. Address any compatibility issues with Oracle forms to ensure smooth functionality.
- Review and reconcile the payments received from FSC for the 149 accounts, particularly focusing on the 141 expired accounts with 455 transactions totalling \$97,331. Ensure accurate classification and handling of these transactions.
- Evaluate the status of the expired accounts, which have been expired for a significant period (6-40 years). Consider appropriate actions for these accounts, such as closure or further investigation.
- Address the issue of interest being added to account for expired leases, especially for the 41 accounts among the 141 expired accounts for FSC. Refer to *Appendix 5*.

Management Comments

The Ministry agrees with the recommendations.

For CLLS this feature could easily disrupt the current “data entry only” nature.

However, with SLAP, it is to be incorporated and tested before being embedded into SLAP.

Audit Conclusion on Application Control Issues

Based on the issues identified on the Application Control domain, it is concluded that the output data is incomplete and inaccurate as there were errors in the output data for balances of lease accounts and the proper addition of interest onto accounts that are on arrears.

Additionally, there is lack of error handling mechanisms in place within the system, effective enough to capture transactional errors thus providing assurance of data integrity and accuracy.

The business process rules are also not aligned in terms of expired leases as audit noted that interest was also added onto accounts that were expired contrary to the State Lands (Leases and Licenses) Regulations 1980 under Section 21(k) and the absence of a clear escalation process for resolving data discrepancies and errors exacerbates the risk of unresolved issues impacting financial reporting and compliance.

3.0 APPENDICES

APPENDIX 1: Reasons for the Audit



Ministry of Lands & Mineral Resources

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iTaukei Trust Fund Complex
Nasese, Suva
(South Wing Ground Floor & First Floor)

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Government Buildings, Suva, Fiji
Ph: (679)3313555 Fax: (679) 3239754
Website: www.lands.gov.fj

MEMORANDUM

From: The Permanent Secretary for Lands & Mineral Resources **Phone:** 3313 555
To : The Auditor General **Date:** 23/08/2023
Re : AUDIT OF THE CROWN LAND LEASING SYSTEM (CLLS)

This memorandum serves to formalize our request for the need to have the Ministry Crown Land Leasing System (CLLS) audited.

The Crown Lands Lease System (CLLS) is specifically used for recording details of all crown land leases including lease status whether its active or not and lease rental records. The system was initially implemented as DOS (Aven) in the 1990's and then later in year 2007 was upgraded to the oracle system and in operation till to date.

The Ministry in a couple of years back have been trying to either revamp or acquire a totally new system that is conducive to the continuous increase in data needs, compatible with other Government System such as the Financial Management Information System (FMIS) and is able to meet the Ministry reporting requirements.

Whilst the Ministry is doing its best to maintain and upkeep the use of the CLLS, there are still some concerns on the effectiveness of the system which is evidently seen in the continuous issues being raised by your Auditors in the Ministry Audit report. In many instances the Ministry has been reactive in addressing flaws identified and at the same time explore how best the Ministry can professionally maintain and handle the CLLS.

As discussed during the Audit Act consultation, the Ministry is looking forward to Office of Auditor's General's assistance in having the CLLS audited.

Request is submitted for your kind consideration, please.

Thank You.

Timoci Samisoni (Mr.)

For Permanent Secretary for Lands & Mineral Resources

APPENDIX 2: Windows Server 2000 – End of Life⁵

All releases

Release	Release date	End of life	Extended Support
Windows Server 2019 Datacenter	November 13, 2018	January 9, 2024	January 9, 2029
Windows Server 2019 Essentials	November 13, 2018	January 9, 2024	January 9, 2029
Windows Server 2019 Standard	November 13, 2018	January 9, 2024	January 9, 2029
Windows Server 2016 Datacenter	October 15, 2016	January 11, 2022	January 11, 2027
Windows Server 2016 Essentials	October 15, 2016	January 11, 2022	January 11, 2027
Windows Server 2016 Standard	October 15, 2016	January 11, 2022	January 11, 2027
Windows Server 2012 Standard	October 30, 2012	October 9, 2018	October 10, 2023
Windows Server 2012 Datacenter	October 30, 2012	October 9, 2018	October 10, 2023
Windows Server 2008 Small Business Server Standard	November 21, 2008		January 14, 2020
Windows Server 2000 Datacenter Server	November 13, 2000	June 30, 2005	July 13, 2010
Windows Server 2000 Server	March 31, 2000	June 30, 2005	July 13, 2010

⁵ Windows Server Lifecycle (EOL), Retrieved 20th October, 2023 from [EOL Windows Server | End of Life \(EOL\) | Microsoft | Lifecycle](#)

APPENDIX 3: Oracle Version 9.2 Support⁶



REMINDER: Premier Support for Oracle Database 9.2 ends in July 2007 (Doc ID 392222.1)

Last updated on JANUARY 06, 2023

APPLIES TO:

Oracle Database - Enterprise Edition - Version 9.2.0.1 to 9.2.0.8 [Release 9.2]
Oracle Database - Personal Edition - Version 9.2.0.1 to 9.2.0.8 [Release 9.2]
Oracle Database - Standard Edition - Version 9.2.0.1 to 9.2.0.8 [Release 9.2]
Oracle Database Cloud Schema Service - Version N/A and later
Oracle Database Exadata Express Cloud Service - Version N/A and later
Information in this document applies to any platform.

PURPOSE

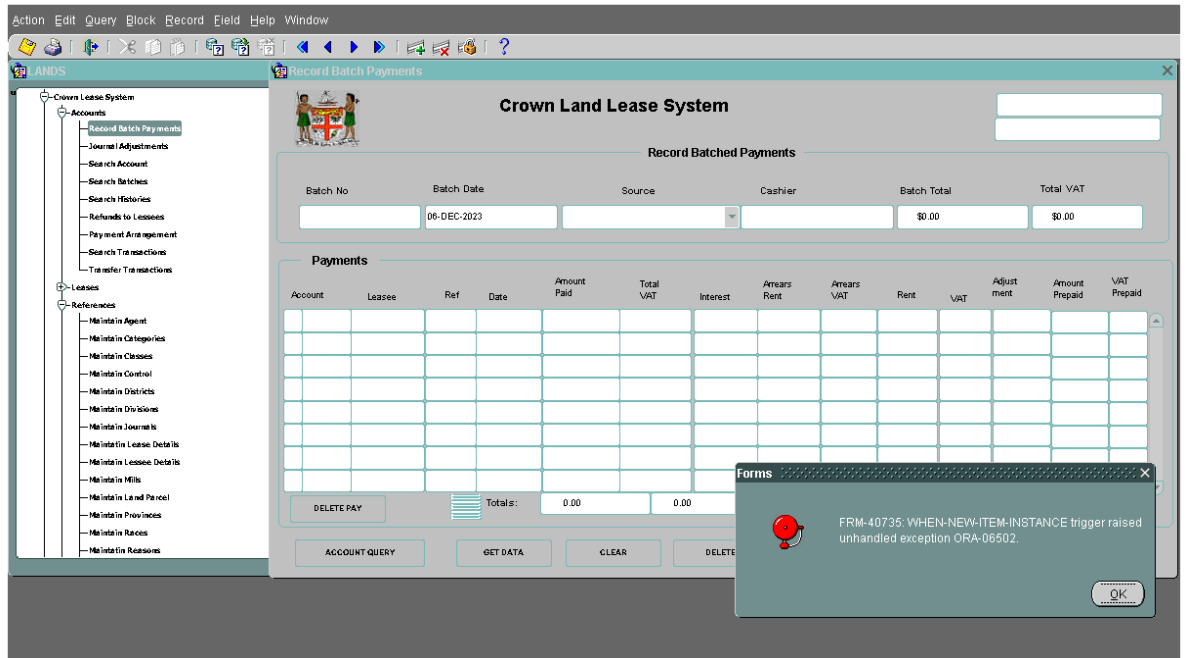
Inform customers of the end of Premier Support for Database 9.2 and give options for what they should do.

NOTE: this document has been reformatted to conform to current My Oracle Support authoring standards but none of the content of the note changed from the previous version.

⁶ Oracle My Oracle Support, Retrieved on 14th November, 2023 from [REMINDER: Premier Support for Oracle Database 9.2 ends in July 2007](#)

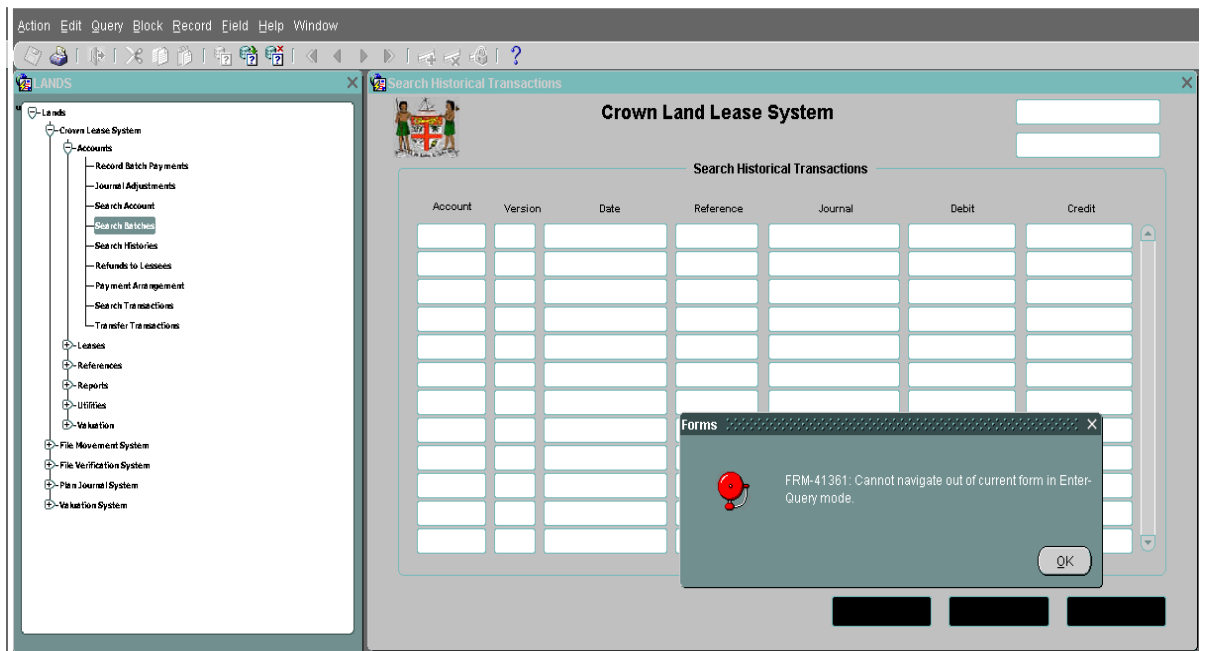
APPENDIX 4: Screenshots of Error Messages Sample in CLLS

1. FRM-40735: WHEN-NEW-ITEM-INSTANCE trigger raised unhandled exception ORA-06502



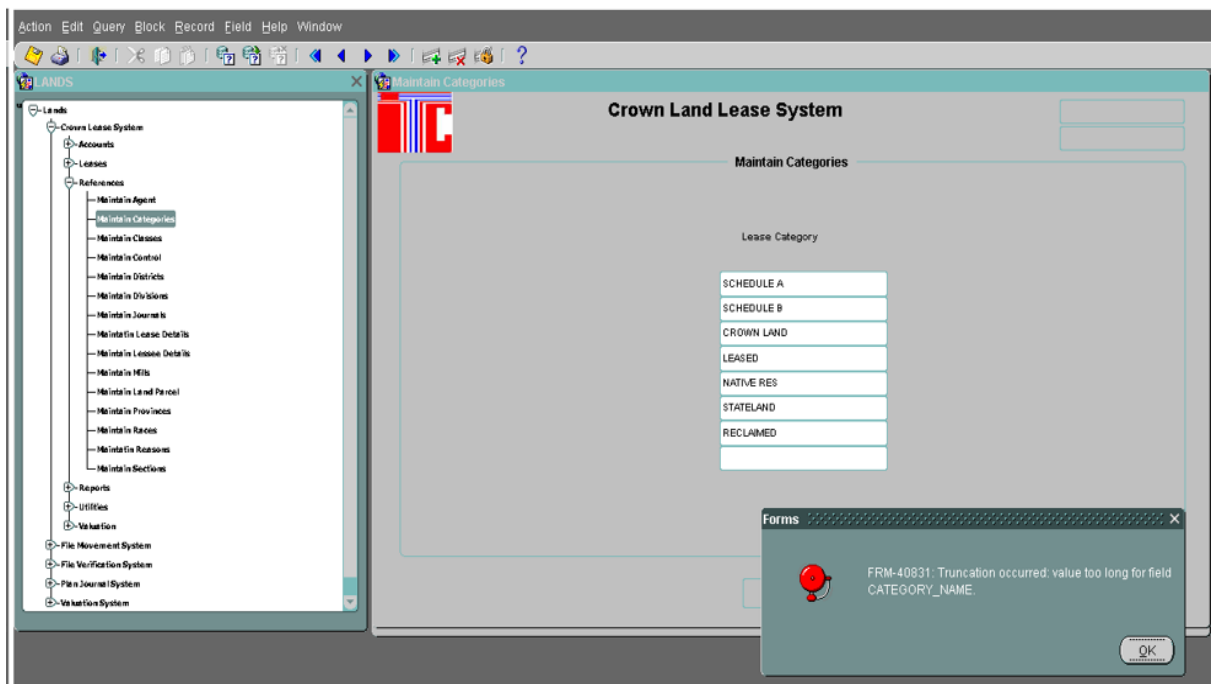
Source: Crown Land Lease System

2. FRM-41361: Cannot navigate out of current form in Enter-Query mode



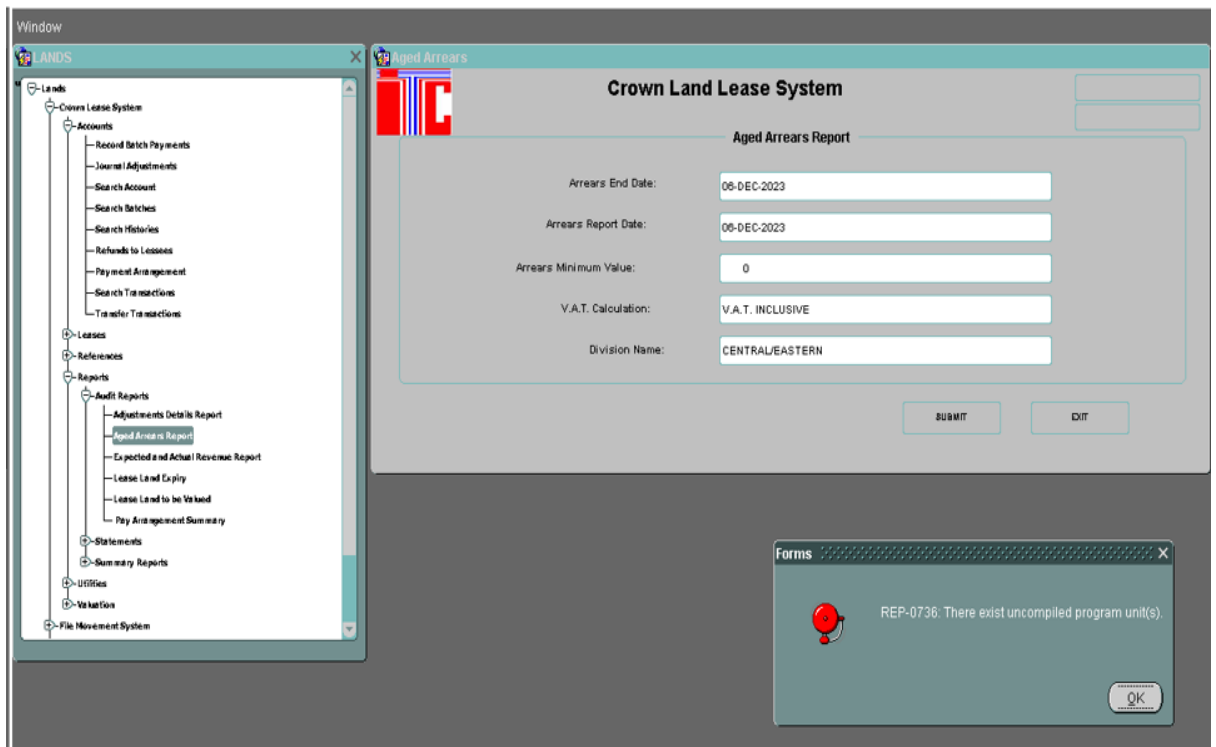
Source: Crown Land Lease System

3. FRM-40831: Truncation occurred; value too long for field CATEGORY_NAME



Source: Crown Land Lease System

4. REP-0736: There exist uncompiled program unit(s)



Source: Crown Land Lease System

APPENDIX 5: Expired Lease Paid Interest (Extracts)

No	ACCOUNT_NO	INACTIVE_DATE	RENT	VAT	INTEREST
1.	30464	15.Jun.2016	\$1,220.00	\$109.80	\$4,195.13
2.	21863	01.Jan.2015	\$2,800.00	\$300.00	\$1,047.70
3.	23002	01.Jan.2017	\$877.50	\$78.99	\$2,045.04
4.	20436	01.Jan.2024			\$876.02
5.	25376	15.Jun.2016	\$840.00	\$75.60	\$720.69
6.	24068	01.Jan.2024			\$557.98
7.	21494	11.Apr.2018	\$158.00	\$14.22	\$559.78
8.	20979	01.Jan.2024			\$100.93
9.	25963	01.Jan.2024			\$50.36
10.	24189	01.Jan.2024			\$4,606.27
11.	21045	01.Jan.2024			\$185.09
12.	25805	01.Jan.2024			\$13.08
13.	25383	01.Jan.2024			\$8,435.85
14.	20846	01.Jan.2024			\$742.24
15.	20976	01.Jan.2024			\$4,185.19
16.	21026	01.Jan.2024			\$55.10
17.	24246	01.Jan.2024			\$607.67
18.	24988	01.Jan.2024			\$163.24
19.	25882	01.Jan.2024			\$165.07
20.	20104	01.Jan.2024			\$364.91
21.	23050	01.Jan.2024			\$416.15
22.	25410	01.Jan.2024			\$375.64
23.	20352	01.Jan.2024			\$711.31
24.	23861	01.Jan.2024			\$363.38
25.	24379	01.Jan.2024			\$317.70
26.	30126	01.Jan.2024			\$1,689.49
27.	24002	01.Jan.2024			\$4,857.08
28.	21036	01.Jan.2024			\$169.59
29.	23989	01.Jan.2024			\$6,931.76

Source: Crown Land Lease System



OFFICE of the AUDITOR GENERAL
Republic of Fiji

www.oag.gov.fj