



**INFORMATION SYSTEM AUDIT REPORT
LAND ADMINISTRATION & REVENUE
MANAGEMENT INFORMATION SYSTEM
(LARMIS)
AUDIT YEAR 2016-2017**

AUDITOR GENERAL OF PAKISTAN

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PREFACE

The Auditor General conducts audit subject to Articles 169 and 170 of the Constitution of the Islamic Republic of Pakistan 1973, read with sections 8 and 12 of the Auditor General's (Functions, Powers and Conditions of Service) Ordinance 2001. The audit of Land Administration & Revenue Management Information System (LARMIS) was carried out accordingly.

The Directorate General Audit Sindh conducted Information System audit of the Land Administration & Revenue Management Information System from 6th March 2017 with a view to reporting significant findings to stakeholders. Audit examined the sufficiency, effectiveness, efficiency of internal controls designed to ensure that the systems and applications are appropriate to the entity's needs, are efficient and are adequately controlled. In addition, audit also assessed, on test check basis whether the management complied with applicable laws, rules and regulations in developing and managing LARMIS. The audit report indicates specific actions that, if taken, will help the management to improve the system. The observations included in this report have been finalized in the light of discussion in the exit meeting.

The report is submitted to the Governor of Sindh in pursuance of Article 171 of the Constitution of the Islamic Republic of Pakistan for causing it to be laid before the Provincial Assembly.

Dated:

(Javaid Jehangir)
Auditor-General of Pakistan

Abbreviations & Acronyms

ADB	Asian Development Bank
ADP	Annual Development Plan
BOR	Board of Revenue
BPR	Business Process Reengineering
DR	Disaster Recovery
EA	Executing Agency
FY	Financial Year
GDP	Gross Domestic Product
GIS	Geographic Information System
GoS	Government of Sindh
GoP	Government of Pakistan
HR	Human Resource
IA	Implementing Agency
ICT	Information, Communication and Technology
ISACA	Information System Audit & Control Association
IT	Information Technology
KPI	Key Performance Indicators
LAN	Local Area Network
LARMIS	Land Administration and Revenue Management Information System
M&E	Monitoring and Evaluation
MIS	Management Information System
NADRA	National Data and Registration Authority
NDA	Non-Disclosure Agreement
PD	Project Director
PMU	Project Management Unit
PRC	Provincial Record Cell
SHMA	Sidat Hyder Murshid Associates
SQL	Structured Query Language

EXECUTIVE SUMMARY

The Directorate General Audit Sindh conducted Information System Audit of Land Administration & Revenue Management Information System (LARMIS) from March to May 2017. The main objectives of the audit were to express an opinion as to whether 1) the systems and applications are appropriate to the entity's needs, are efficient, and are adequately controlled to ensure valid, reliable, timely, and secure input, processing, and output at all levels of a system's activity, 2) the processing facility is controlled to ensure in time, accurate, and efficient processing of applications under normal and potentially disruptive conditions, 3) the controls are in place on the client (computer receiving services), server, and on the network connecting the clients and servers. The audit was conducted in accordance with the International Standards of Supreme Audit Institutions (ISSAI).

Land Administration & Revenue Management Information System has been developed with the aim to revolutionize the record keeping in revenue transactions and to establish a one window operation in revenue administration, as any applicant will be moving his/her application for issuance of any certificate, registration deed, or recording any change in the record of rights through information centers established in every District all over Sindh. Such application or transaction deed shall be electronically processed through an automated system catering to verification of titles and pecuniary interest of the government attached with the property under transaction. The proposed project will bring the required transparency in the entire revenue administration and land record.

The results of audit indicated that the access to the system and data was not provided. Due to this, data analysis could not be performed. Besides, it was observed that strategies, policies, procedures were not available. There were shortcomings in procurement management. The management did not implement Third Party audit & evaluation consultant recommendations and suggestions. The evaluation and monitoring activities were not performed. Procedure adopted by the management for international trainings was not transparent.

It is mainly recommended that strategies, policies and procedures may be framed for smooth operations of the system and to help the concerned staff in

performing their duties. It will create consistency in operations. Procurement and contract management was not up to the mark, which needs to be refined and made efficient and effective. The recommendations of management consultant/third party auditors must be adhered to for improving the efficiency and effectiveness of the system. It will increase the overall benefits to the stakeholders.

1. INTRODUCTION

The Director General Audit Sindh conducted Information System audit of Land Administration & Revenue Management Information System to ascertain that the systems and applications are appropriate to the entity's needs, are efficient, and are adequately controlled to ensure valid, reliable, timely, and secure input, processing, and output at all levels of a system's activity. The audit was conducted during March to May 2017.

1.1 Approval by competent forum

The project Computerization & Establishment of Land Administration & Revenue Management Information System (LARMIS) was initially approved at total cost of 921.812 million by PDWP forum on 26-01-2008. However it had very limited scope and was ill conceived. Moreover, due to discontinued leadership & funding, only a project management unit was established under the project in 2011 and no other progress could be achieved.

A revised plan was prepared in consultation with NADRA namely "Land Administration & Revenue Management Information System (LARMIS)" The revised project was approved by the PDWP Forum of the Planning & Development Department in November 2011 and it received assent of the Honorable C.M Sindh on 30th December 2011. The revised Administrative Approval was accorded vide No.13-02-10-PMU/R&S/BOR/2963/2015 dated 16-03-15 at total cost of Rs.4.997 billion.

1.2 Timelines/Period of the Project

Year	Phasing as per PC-I	PSDP allocation	Releases	Expenditure
1 (F.Y. 2011-12)	151.454	524.250	524.250	151.454
2 (F.Y. 2012-13)	1,072.113	1,824.382	1,218.860	1,072.113
2 (F.Y. 2013-14)	1,579.805	2,036.337	1,617.586	1,579.805
4 (F.Y. 2014-15)	811.018	1,843.943	867.301	811.018
5 (F.Y. 2015-16)	1,383.063	1,322.782	828.262	429.107
Total	4,997.453	7,551.694	5,056.259	4,043.497

1.3 System Details of LARMIS

Category of information	Information												
1. Name of the auditee organization:	Project Management Unit – Board of Revenue Sindh												
2. Date on which information collected:	February 23, 2017												
3. Name of the IT Application and broad functional areas covered by the IT Application:	<p>Issuance of Computerized copy of Land Record Official Web portal for Land Record Search (sindhzameen.gos.pk) “Sindh Zameen” a mobile application for land records The applications are providing the services to search land record. Issuance of Computerized copy component is running at all 29 service Centres of Sindh (one established in each District HQ) from where land record on security papers can be received in a short time and respectable manner</p>												
4. Location(s) of the IT system installation(s)?	The software is installed at Data Centre, Karachi and Disaster Recovery Centre, Hyderabad and can be accessible from all People’s Service Centres established at district headquarters of Sindh												
5. IT system architecture:	Client Server												
6. Software used													
Operating system(s)	Microsoft Windows 2012 server												
Network software	CISCO Prime												
DBMS/RDBMS	MS SQL Server 2014 Enterprise												
Front end tool	MS Visual Studio												
Programming Language(s)	C#												
7. Date on which the system made operational	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">MM</td> <td colspan="4" style="text-align: center;">YYYY</td> </tr> <tr> <td style="width: 25%; text-align: center;">0</td> <td style="width: 25%; text-align: center;">4</td> <td style="width: 12.5%; text-align: center;">2</td> <td style="width: 12.5%; text-align: center;">0</td> <td style="width: 12.5%; text-align: center;">1</td> <td style="width: 12.5%; text-align: center;">6</td> </tr> </table>	MM		YYYY				0	4	2	0	1	6
	MM		YYYY										
0	4	2	0	1	6								
8. Total investment on the IT system project													
Hardware items	596 Million (27 Peoples Service Centres, Data Centre at Karachi and Disaster Recovery Centre Hyd, Provincial Record Cell Hyderabad, PMU @ Karachi, Call Centre& Committee Room @ Karachi)												

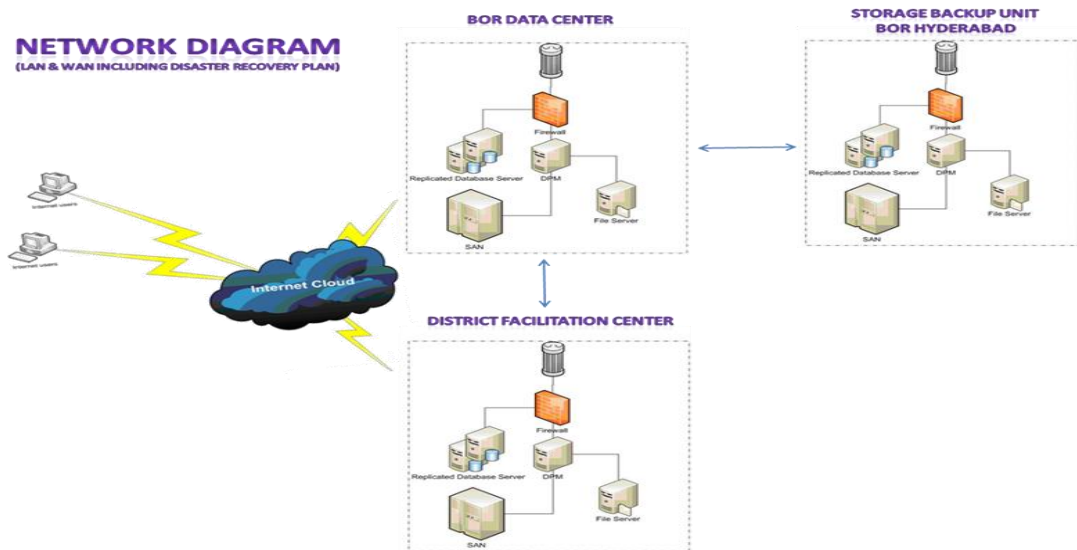
Category of information	Information
Proprietary software	Rs 4.1 million
Application System development cost	Rs 289.123 million
Man power training cost	The end user training has been conducted in the Committee Room of Project Management Unit, Board of Revenue Sindh by the technical team of Board of Revenue Sindh
9. The average volume of transactional data generated on a monthly basis	7.2 TB + 200 GB + 50 GB = 7.45 TB 7.45 TB Data set with three copies that makes 22.35 TB Growth: 70 GB per month
10. Does the organization transmit/receive data to/from other organizations:	This software uses “Verisys” service from NADRA to verify identity of applicants/ID cards
11. Input of the system	1. Past data pertaining to 1985 and onwards through 09 Data Entry firms 2. Current data through PRC Hyderabad in shape of forms which include Land Register, V.F-I, Village Form (VF-II), Village Form (VF-VI), Village Form (VF-VIIA), Village Form (VF-VIIB) of every Deh, as well as urban property record viz. property registers, city survey property cards.
12. Outputs of the system	1. Computerized land record of ownership right with security features

1.4 Objectives of the project (as per PC-I)

- i. Maintain Record of Rights (Ownership Title) through Electronic Documentation
- ii. Computerization and Generation of all Revenue/Village Forms, Taluka Forms and District Forms
- iii. Development of software to computerize urban property records
- iv. Development of software to computerize registration of deeds related to and property transactions
- v. Execution of efficient mutation process
- vi. Database to provide means for effective planning and accurate taxation

- vii. Database to provide reliable mode of information to help resolve land dispute as well as making provision for a real-time updating of record,
- viii. Improvement in Land Record service delivery and transparency
- ix. Sharing of information electronically among the all stakeholders and provision of prescribed information on website
- x. Support agriculture credit system and provide investment opportunities to Banking Sector,
- xi. Integration of LARMIS with urban property records and registration deeds related to land and property transactions
- xii. Development of a Customized Software and a database (LARMIS) linked with the land GIS and its integration with the digitizing of land cadastre under directorate of survey & settlement. The system will provide customized software to generate automated reports, updating of data, record of rights, mutations. The same will be accessible through the ongoing development of GIS platform. Institutional Development and Capacity Building, of Revenue officers / officials under HRD plan
- xiii. Institutional Development and Capacity Building, of Revenue officers / officials under HRD plan.
- xiv. Creation of public awareness to maximize the benefits from the project

1.5 Network Diagram of LARMIS



2 AUDIT OBJECTIVES

To ensure whether

- The systems and applications are appropriate to the entity's needs, are efficient, and are adequately controlled to ensure valid, reliable, timely, and secure input, processing, and output at all levels of a system's activity.
- The processing facility is controlled to ensure in time, accurate, and efficient processing of applications under normal and potentially disruptive conditions.
- The IT management has developed an organizational structure and procedures to ensure a controlled and efficient environment for information processing.
- The controls are in place on the client (computer receiving services), server, and on the network connecting the clients and servers.

3 AUDIT SCOPE & METHODOLOGY

3.1 Audit Scope

The information system audit will be carried out to examine the following in LARMIS, Board of Revenue:

- 1) IT Governance and Management
- 2) IS Acquisition, Development and Implementation
- 3) IS Operation, Maintenance and Support
- 4) Protection of Information assets

3.2 Methodology

In accordance with the audit objectives the audit was carried out in three phases: the planning phase, the conduct phase, and the reporting phase.

- a. During the planning phase, we proceeded with a thorough review of documents provided by the project authorities to gain an understanding of the overall framework, as well as the processes relevant to the audit scope. Preliminary interviews were conducted with project personnel to gain greater knowledge of management controls and processes in place and to identify key risks associated with the delivery of the project. The purpose of the planning phase was to develop a Risk-Based Audit Program that provides a basis for the orderly, efficient, and cost effective conduct of the audit as well as a criteria base for assessment.
- b. During the conduct phase, the audit team visited, as per the scope of the audit, Project Management office in Karachi, and various Facilitation centers. From these visits, the audit team selected documents; conducted interviews, performed project file reviews, and debriefed management on preliminary findings.
- c. Findings were summarized and then grouped to reflect audit findings.

3.3 Audit Criteria

The following formed criteria for evaluating results of audit:

1. ISACA IS Audit and Assurance Standards and Guidelines

2. The management's approved policies and procedures will also be considered as a criterion for proper input and processing of information.
3. Sindh Public Procurement Rules 2010 for procurement related issues.
4. General Financial Rules, where needed.

4. AUDIT FINDINGS & RECOMMENDATIONS

The audit findings and recommendations in this section were pointed out during October 2017, but no reply of the management was received. The report was issued to the Principal Accounting Officer/Senior member Board of Revenue on 10-10-2017 with the request to convene the DAC meeting but the same was not convened despite of two reminders on 23-02-2018 and 22-03-2018.

4.1 Governance & Management of IT

4.1.1 IS strategy

4.1.1.1 Operations of IS without IT strategic plan

An IT strategic plan is a document that defines the strategy an organization will implement to enable its IT infrastructure and portfolio to operate and function in line with its business objectives. An IT strategic plan ensures that the enterprise IT provides optimum output and services that directly support the organization's core mission, strategy and priorities.

Scrutiny revealed that no such document was prepared that could have provided an opportunity to the stakeholders to look into the future plans of the department to enable them to meet future requirements of the department.

Absence of such an important document indicates that the department did not exercise due care to the future planning.

Audit recommends fixing of responsibility on the person(s) at fault besides taking remedial measures.

4.1.2 Policies & Procedures

4.1.2.1 Non-preparation of Strategies and Policies

The strategies and policies set the direction of the organization that ensures the achievement of the business objectives of the organization. The effectiveness and efficiency of IT governance efforts in the organization are dependent on the quality management strategies and policies that are embedded in the IT governance framework. Quality management strategies and policies outline how the IT strategies, policies, procedures and standards are maintained, used and improved over time as the organization changes. IT policies, procedures and standards are effective when in use, and when they meet the needs and requirements of the organization.

Scrutiny revealed that strategies and policies for Information Technology, Information System, Information Security, Business Continuity and Disaster Recovery were not framed and therefore not produced for review.

Due to absence of these important tools, the achievement of all the objectives cannot be ensured, as the organization cannot grow in long term.

Audit recommends fixing of responsibility on the person(s) at fault besides taking remedial measures.

(OM # 13)

4.1.3 Risk Management

4.1.3.1 Non-submission of risk analysis on organization structure in the assessment report

The Audit Plan Document prepared under Third Party Software Audit & Evaluation assignment pointed out that the consultant/auditor will identify the risks in the software roles viz-a-viz organization structure and this will be executed by performing risk analysis for the existing BOR organization structure.

However, audit observed that Risk Analysis Report does not show any Risk Analysis on organization structure. Hence, the Risk analysis is incomplete and does not serve the purpose. Further, Risk analysis was to perform for LARMIS while M/s Sidat Haider Murshid Associates reviewed the risk analysis performed by the software developer.

Due to skipping the important task, risks lying in organization structure could not be identified.

Audit recommends fixing of responsibility on the person(s) at fault.

(OM # 07)

4.1.3.2 Operations of the project without risk management plan

A risk management plan for a project is a formal document that describes how to deal with specific risks and what risk managing actions can be taken in order to mitigate or remove threats to the project activities and outcomes. The project risk management plan gives members of the project management team a sense of the risk managing actions they can take to identify, analyze and respond to threats around and within the project.

Review indicated that no such risk management plan was developed by the management putting the interest of the project at stake. The situation can put the project in undesirable position where the management would not be able to manage/mitigate risk arising in various phases of the project.

Failure to develop risk management plan indicated the attitude of the management towards risk management activities.

Audit recommends fixing of responsibility on the person(s) at fault besides taking remedial measures.

4.1.4 IS management practices

4.1.4.1 Key Performance Indicators to gauge performance of LARMIS not established

Risk Analysis report of the consultant/auditor M/s Sidat Haider Murshid Associates suggested to establish Key Performance Indicators to gauge the performance and quality of the project. The KPIs were to use to assess the project performance in terms of meeting their project goals and business objectives.

Review of Information System Audit of LARMIS Sindh in the audit year 2016-17 disclosed that no such KPIs were established to ensure that the performance is measured and corrective measures are taken. In the absence of KPIs, the

performance could not be measured and the success or failure of the project cannot be ascertained.

Failure to introduce KPIs shows attitude of the management towards strengthening of internal control system and achievement of the objectives.

Audit recommends fixing of responsibility on the person(s) at fault besides taking remedial measures.

(OM # 12)

4.1.4.2 Non-hiring of services of Project Management Professional

Project Initiation Document (Study report for improvement of BoR) disclosed that the services of a team of consultants, the FINCON Team, was hired by Ministry of Finance & State Bank of Pakistan with the assistance of ADB in 2009 to assist BOR in conceptualization, identifying gaps, and recommended a Road Map for successful completion of this project and achieve its objectives. In their report, the Team recommended induction of at least one certified PMP (Project Management Professional) amongst the senior hierarchy of the PMU.

Audit observed that no such hiring of PMP was made in the project and the project was run without the services of such professional. Audit is of the view that the presence of these individual(s) would have made invaluable contribution in ensuring meticulous planning and timely completion of activities. This is evident from the late completion of the project.

Hiring of professional for the project was suggested as internal control to strengthen internal control system, the purpose of which could not be achieved.

Audit recommends fixing responsibility on the person(s) at fault.

(OM # 24)

4.1.4.3 Human Resource management without succession planning

A succession plan, simply put, is a component of good HR planning and management. Succession planning acknowledges that staff will not be with an organization indefinitely and it provides a plan and process for addressing the

changes that will occur when they leave. Most succession planning focuses on the most senior manager, however, all key positions should be included in the plan.

Audit observed that, being a IT based project, almost all of the staff (officers/officials) of the project were contract based and their contract periods were renewed after certain period. Working of all of the critical IT staff on contract basis was overlooked and no succession planning was made to secure smooth functioning of the development of IT infrastructure for the project.

Human resource management without succession planning put the development of IT infrastructure of the project at stake as the heavy reliance of the implementation of the project was placed on the contract staff without their regularization.

Audit recommends fixing of responsibility on the person(s) at fault.

4.1.4.4 Non-execution of Non-disclosure agreement with the service providers

A non-disclosure agreement (NDA), also known as a confidentiality agreement, is a legally binding contract in which one party agrees to give a second party confidential information about its business or products and the second party agrees not to share this information with anyone else for a specified period of time. NDAs are used to protect sensitive information and intellectual property by outlining in detail what information must remain private and what information can be shared or released to the public.

Review of the various procurements revealed that though the critical phase of the project was to capture and store data of sensitive nature, but despite of this fact, no such agreement was made with the parties involved in data entry and migration, software development.

Due to not entering in NDA with the parties, the management put the sensitive data at risk of leakage.

Audit recommends fixing of responsibility on the person(s) at fault.

4.1.4.5 Unauthorized payment of international training

Rule-10 (i) and (ii) General Financial Rule, Volume - I, "Every public officer is expected to exercise the same vigilance in respect of expenditure incurred from

government money, as a person of ordinary prudence would exercise in spending his own money”.

Review of various contract under LARMIS (Land Administration & Revenue Management Information System) Sindh revealed that expenditure was incurred on international training for officers/officials of Government of Sindh. The payment was made to M/s Accountancy Outsourcing Services, Zehra Communication. In this regard, following observations were noted.

- 1) Evidence of attending trainings was not available
- 2) Payment was made to the contractor instead of making payments to the institute or the participants.
- 3) International trainings was made part of the original contracts and the payments were made to the contractors/consultants who were not training provider.
- 4) The names of officers/officials who were sent abroad for training/seminar/workshop in various works may be provided.
- 5) There was no justification to make international training a part of the original contract. It appeared as if it was made just to provide undue favour to the contractor.

Due to above, the undue favour was extended to the contractor.

Audit recommends that relevant record may be produced and responsibility may be fixed upon the person(s) at fault.

(OM # 16)

4.1.5 IS organizational structure & Responsibilities

4.1.5.1 Weak internal control due to lack of segregation of duties

Actual job titles and organizational structures vary greatly from one organization to another depending on the size and nature of the business. Segregation of duties avoids the possibility that a single person could be responsible for diverse and critical functions in such a way that errors or misappropriations could occur and not be detected in a timely manner and in the normal course of business processes. Segregation of duties is an important means by which fraudulent and/or malicious acts can be discouraged and prevented. Duties that should be segregated include: Custody of the assets, authorization, recording transactions.

Review of the human resource management of the LARMIS disclosed that clear segregation of duties was not made. Same officer/official was performing various roles in the project (Head office and the Peoples Service Centers).

Due to lack of segregation of duties, chances of misappropriation of assets, misstatements, inaccuracy, improper use of funds and unauthorized or erroneous changes or modification of data cannot be ruled out.

Audit recommends that compensating controls may be developed and implemented to counter the above risks.

4.1.6 Business Continuity Planning (BCP)

4.1.6.1 Testing of Business Continuity plan was not done

IS processing is of strategic importance. It is a critical component since most key business processes depends on the availability of key systems infrastructure components and data. The IS business continuity plan should be aligned with the strategy of the organization. The criticality of the various application systems deployed in the organization depends on the nature of the business as well as the value of each application to the business. Testing of BCP, therefore, is important to ensure readiness of the management in the event of incidents/crisis.

Audit observed that BCP was not tested to ensure readiness of the management, flawless planning and avoidance of crisis like situations.

Due to above, chances of failure of BCP cannot be ruled out.

Audit recommends that BCP may be tested and the results of the test may be intimated to audit.

4.2 IS Acquisition, Development and Implementation

4.2.1 Project management practices

4.2.1.1 Non-implementation of Activity schedule provided by the consultant M/s FINCON

Project Initiation Document (Study report for improvement of BoR) disclosed that the services of a team of consultants, the FINCON Team, was hired by Ministry of Finance & State Bank of Pakistan with the assistance of ADB in 2009 to assist BOR in conceptualization, identifying gaps, and recommended a Road Map for

successful completion of this project and achieve its objectives. The FINCON team recommended Activity schedule to be devised for smooth and step-wise transformation of system.

Review revealed that the management could not implement the schedule. Many steps were skipped and the timeline were not followed. Audit is of the view that the non-implementation of these recommendations not only wasted the time, effort but also caused delay in completion of the project. This is evident from the late completion of the project.

Due to above, the project delayed and the stakeholders could not get benefits of the project timely.

Audit recommends that responsibility may be fixed on the person(s) at fault under intimation to audit.

(OM # 27)

4.2.2 Business Application Development

4.2.2.1 Non-observance of Implementation schedule of System Development

Request For Proposals was issued for “Consultancy for customized software development of LARMIS, scanning and indexing of manual registers and supervision of Data entry of land record” which also contained implementation schedule.

M/s Accountancy Outsourcing Services (AOS) was hired for the above job. However, it was noted that the contractor could not follow the timeline for various assignments (as shown below). The management neither took corrective measures nor imposed any penalty on the contractor.

Sr. #	Milestone	26-4-12 Timeline	Date of submission
1	Submission of Requirement Specifications Document	30 days from the contract signing (26-5-12)	07-04-2014
2	Submission of design and detailed specifications of Data Centre, DR Facility, ICT Infrastructure and Civil Works for Facilitation Centres	30 days from the contract signing (26-05-12)	08-10-2012
3	Delivery of fully functional Operational Software as per RFP requirements	180 days from the contract signing (26-10-12)	29-08-14 (Date of 1 st UAT)

Due to above, the project delayed and the stakeholders suffered.

Audit recommends fixing of responsibility on the person(s) at fault and results thereto be shared with audit.

(OM # 17)

4.2.2.2 Non-availability of various features in the software as were conceptualized in PC-I

M/s Sidat Hyder Morshid Associates (SHMA) was hired for “Consultancy services for Third Party Software Audit and Evaluation for LARMIS”. The consultant M/s SHMA submitted various reports under this assignment including Assessment Report on Business Process Mapping. Following requirements were conceptualized in PC-I.

Sr. #	Requirements
1	Land Laws
2	Land Utilization
3	Land Revenue Administration
4	Registration of deeds & documents
5	Stamps and court fees, judicial and non-judicial
6	Settlement and Re-assessment
7	Generation of all property related documents of rural and urban areas of Sindh
8	One window operation in revenue administration
9	Provision to cater to the needs of banks and courts in adjudicating matters
10	Registration of deeds related to and property transactions
11	Sharing of information electronically among all stakeholders
12	Agriculture credit system and provide investment opportunities to banking sector
13	Linkage with the land GIS
14	System of affecting mutations of different kinds
15	System of revenue assessment and collection through multiple channels

However, it was noted that these were not available in LARMIS application. The non-availability of these requirements was also pointed out in the Assessment report on Business Process Mapping.

Due to above, full benefits of development of system could not be achieved.

Audit recommends that responsibility may be fixed on the person(s) at fault and audit be informed accordingly.

(OM # 11)

4.2.2.3 System Development before approval of System Requirement Specification Document

Implementation schedule of the work “customized software development of LARMIS, scanning and indexing of manual registers and supervision of Data entry of land record” indicates that the process of preparation of System Requirement Specification document was to be completed before starting of Scanning and indexing, development of data entry system, data entry work and start of system development of LARMIS.

Audit observed that SRS Final document was approved on April 07, 2014 when all other processes of Data entry, Scanning and indexing and Third Party Software Audit had been started or completed. This shows abnormal delay in finalization of SRS document which was needed to be finalized in the early stages of the assignment.

Sr. #	Contractor/ Consultant	Work	Date of contract
1	M/s Accountancy Outsourcing Services	customized software development of LARMIS, scanning and indexing of manual registers and supervision of Data entry of land record	26-04-12
2	Various firms	Various contracts for Data entry	December 2012
3	M/s Sidat Hyder Murshid Associates	Third party Software Audit & Evaluation	09-08-2012

Due to above, chances of bugs and errors in the system cannot be ruled out.

Audit recommends that responsibility may be fixed on the person(s) at fault and the results thereto be shared with audit.

(OM # 19)

4.2.2.4 Non-submission of various Assessment Reports of Third Party Software Audit & Evaluation by the consultant

As per Rule-4 of SPPR, 2010, “While procuring goods, works or services, procuring agencies shall ensure that procurements are conducted in a fair and transparent manner and the object of procurement brings value for money to the agency and the procurement process is efficient and economical.”

Audit observed during review of tender documents of Third Party Software Audit & Evaluation that tender was invited to acquire consultant services for “Consultancy services for Third Party Software Audit and Evaluation for LARMIS”. M/s Sidat Hyder Morshid Associates (SHMA) was hired for third party Software audit at a price of Rs 4,889,000. M/s SHMA was to submit various reports as per schedule. However, the following reports were not provided by M/s SHMA which were to be provided as per schedule.

Sr. # of Report	Title of Report
7	Submission of System Audit on LARMIS application
11	Project Completion Report

The un-submitted reports were of important nature due to which the whole exercise of third party software audit turned into futile work. The contract for consultancy remained unfulfilled for which no action was taken by the Project Management.

Audit recommends that responsibility may be fixed on the person(s) at fault.

(OM # 03)

4.2.2.5 Unjustified evaluation against criteria for Third party Software Audit & Evaluation

Rule-10 (i) and (ii) General Financial Rule, Volume - I, “Every public officer is expected to exercise the same vigilance in respect of expenditure incurred from government money, as a person of ordinary prudence would exercise in spending his own money”.

Audit observed during review of tender documents of Third Party Software Audit & Evaluation that evaluation criteria for selection of IS auditor for Third Party Software audit was framed and the members of Selection committee of consultants evaluated the bidders. Following shortcomings were noticed in the evaluation.

- The selection criteria were such that YES or NO grant marks, but different marks were awarded by the members for the same factor.
- Marks sheet of the member Mr. Ather Hussain Baloch shows maximum marks as 20 and awarded marks 29, 45 and 32 to different bidders in Sr. # B. Further, awarded 17, 14, 15 & 15 out of 13 to different bidders. It indicates that the marks awarded were pre-set.
- One of the members awarded 2 marks out of 15 which was beyond any reasoning and comprehensions.
- It was also peculiar to note that Bid Evaluation Report was signed by Mr. M. Aslam, SO (Grade-17 officer) Finance Department and Comparative Statement was signed by Mr. Mumtaz Gopang, Deputy Secretary while Technical Evaluation was signed by Mr. M. Aslam, SO while SPPRA does not allow Grade-17 officer to be a part of Consultant selection committee.

Due to above, the transparency in evaluation of the bids cannot be ensured.

Audit recommends that responsibility may be fixed on the person(s) at fault under intimation to audit.

(OM # 05)

4.2.2.6 Execution of Software Audit without observing Terms of Reference

Terms & Reference for Software Audit were framed and provided to the bidders. According to the ToRs, the objective of Third Party IS Audit was to examine the controls within proposed LARMIS through collecting and evaluating evidence and that the focus will be on determining risks that are relevant to information assets and assessing risks to reduce or mitigate these risks.

The contract for consultancy and Third Party Software Audit was awarded to M/s Sidaat Haider Murshid Associates. M/s SHMA failed to submit complete reports

and specially, final completion report. The objective of IS audit could not be achieved, as

- M/s SHMA did not complete the assignment and left the assignment unfinished.
- The ToRs specify in “Phase-3” that the IS auditor will carry out the Business Process Analysis to identify areas of control weaknesses. The auditor’s report on risk assessment does not cover identification of control weaknesses.
- No controls have been suggested in Risk Analysis Report, so that the objectives of the IS Audit could be achieved.

Due to above, the benefits of exercising evaluation and audit activity could not be achieved.

Audit recommends fixing of responsibility on the person(s) at fault and results thereto be shared with audit.

(OM # 06)

4.2.2.7 Submission of Assessment report on Business Process Mapping in absence of Software Requirement Specification Document

Audit plan highlights requirement of gap analysis b/w existing processes and processes covered in LARMIS (through System Requirement Specification document).

Audit observed during review of Third Party Software Audit & Evaluation assignment that assessment report on Business Process Mapping was issued on December 18, 2012 while SRS Final document was approved on April 07, 2014. This clearly indicates that the gap analysis work was not performed. Further, it has been pointed out in the Assessment Report on Business Process Mapping that mapping has been performed between the existing business processes of BoR with the business covered in LARMIS application but the same was not available which also supports the above observation.

Due to above, chances of developing system with defective mapping cannot be ruled out.

Audit recommends that responsibility may be fixed on the person(s) at fault.

(OM # 09)

4.2.2.8 Non-implementation of recommendations of Third Party audit regarding Business Process Mapping

M/s Sidat Hyder Morshid Associates (SHMA) was hired for “Consultancy services for Third Party Software Audit and Evaluation for LARMIS”. The consultant M/s SHMA submitted various reports under this assignment including Assessment Report on Business Process Mapping. In the 4th part of this report, the consultant pointed out following issues and recommended their implementation.

Sr. #	Requirement area
1	Assessment of Land Revenue
2	Revenue collection
3	Agriculture Pass Book
4	Crop Inspection
5	Survey of Deh
6	Mutation for Deh – Inheritance
7	Mutation for Deh – Sale
8	Mutation for Deh – Partition
9	Mutation for Deh – Transfer
10	Mutation for Deh – Gift
11	Mutation for Deh – Exchange
12	Mutation for Deh – Will
13	Mutation for Deh – Mortgage
14	Special Revision of record of rights
15	Registration of Record of rights
16	Registration of Non-Agriculture Property
17	City Survey Records
18	Mutation of city – Inheritance
19	Mutation of city – Sale/Gift/Will

However, it was noted that recommendations were not implemented due to which full benefits of LARMIS could not be achieved.

Audit recommends that responsibility may be fixed upon the person(s) at fault.

(OM # 10)

4.2.3 Infrastructure development/acquisition practices

4.2.3.1 Unauthorized cancellation of tender and award of contract by ignoring the lowest bidder

According to Rule-17(1) of Sindh Public Procurement Rules 2010 “Procurements over one hundred thousand rupees and up to one million rupees shall be advertised by timely notifications on the Authority’s website and may in print media in the manner and format prescribed in these rules. Further, According to Rule-16(1)(a)(ii)(C), the object of the procurement is purchased from the supplier offering the lowest price;

During scrutiny of contract for system development, audit observed that tender for Consultancy for customized software development of LARMIS, scanning and indexing of manual registers and supervision of Data entry of land record was invited in 2010 and Quality and Cost Based Selection (QCBS) was adopted. Only 3 firms submitted proposals and two firms i.e. M/s AOS and Netsol Technologies qualified technically. The financial bid of M/s Netsol Technologies was Rs 14.901 million while M/s AOS quoted Rs 115.375 million. The management did not award the contract to M/s Netsol Technologies and cancelled the tender. The tenders were again invited in March 2012 and awarded to M/s AOS at bid price of Rs 523.923 million which was quite higher than before. Then, only M/s AOS participated and submitted technical and financial bid and won the tender. The management opted not to re-tender and followed rule 48 of SPPRA (though no evidence of market survey was available). In the above situation, the cancellation of tender and subsequent awarding tender to single bidder stands unauthorized.

Due to above, transparency in procurement could not be achieved.

Audit recommends fixing of responsibility on the person(s) at fault.

(OM # 25)

4.2.3.2 Non-forfeiture of Performance Guarantee on failure to complete the contract – Rs 0.244 million

According to Rule 39(1) “Procuring Agency shall, in all procurement of goods, works and services, carried out through open competitive bidding, require security in the form of pay order or demand draft or bank guarantee, an amount sufficient to protect the procuring agency in case of breach of contract by the contractor or supplier or consultant, provided that the amount shall not be more than 10% of contract price;

Audit observed during review of Third Party Software Audit & Evaluation assignment that tender was invited to acquire consultant services for “Consultancy services for Third Party Software Audit and Evaluation for LARMIS”. M/s Sidat Hyder Morshid Associates (SHMA) was hired for third party Software audit at a price of Rs 4,889,000. M/s SHMA was to submit various reports as per schedule. However, some reports were not provided by M/s SHMA and the contract remained incomplete. The performance guarantee for Rs 244,450 was not forfeited and no action was taken by the Project Management.

Due to non-forfeiture, the undue favour was extended to the consultant.

Audit recommends that responsibility may be fixed on the person(s) at fault, besides taking remedial measures to avoid such lapses.

(OM # 08)

4.2.4 IS maintenance practices

4.2.4.1 Operations of IS without formal change management process

As an organization's systems and infrastructure change, management practices are used to manage that change (change management, release management and configuration management). Change management processes include the governance on how a change is submitted, documented and approved.

Audit observed that the management could not develop a formal change management process to initiate and complete a change which is required to streamline the business processes.

Due to above, the risks of unauthorized access, changes, issues of authority and responsibility could not be mitigated and remained in the system.

Audit recommends fixing of responsibility on the person(s) at fault under intimation to audit.

4.2.5 Application controls

4.2.5.1 Weak input control due to absence of password policy

Input control procedures must ensure that every transaction to be processed is entered, processed and recorded accurately and completely. These controls should ensure that only valid and authorized information is input and that these transactions are only processed once. Therefore, strong password policy is a tool to mitigate risk of unauthorized access, input and processing.

Audit observed that management could not develop a password policy to ensure that only authorized data is entered and the security of the data stored is strong.

Due to above, the risks of unauthorized access, input, processing and compromised security could not be avoided/mitigated.

Audit recommends fixing of responsibility on the person(s) at fault for such lapse.

4.2.5.2 Non-availability of Data Entry and Indexing software

Rule-10 (i) and (ii) General Financial Rule Volume - I, “Every public officer is expected to exercise the same vigilance in respect of expenditure incurred from government money, as a person of ordinary prudence would exercise in spending his own money”.

During scrutiny of contract of System Development, audit observed that M/s Accountancy Outsourcing Services (AOS) was hired for “Consultancy for customized software development of LARMIS, scanning and indexing of manual registers and supervision of Data entry of land record” at a bid of Rs 523.923 million. Softwares for Data entry and Indexing of record were developed as part of Software Development for LARMIS, but these were not available for review at the time of audit. It indicates that the software and the complete source code were not obtained from the software developer.

Due to above, the process of scanning, indexing and data entry could not be observed.

Audit recommends fixing of responsibility on the person(s) at fault, besides taking steps for completion of codal formalities.

(OM # 14)

4.2.5.3 Weak data file controls due to absence of Error reporting procedures

Input processing requires that controls be identified to verify that only correct data are accepted into the system and input errors are recognized and corrected. Data conversion error corrections are needed during the data conversion process. Errors can occur due to duplication of transactions and inaccurate data entry. These errors can, in turn impact the completeness and accuracy of the data. Corrections to data should be processed through normal data conversion processes and should be verified, authorized and reentered into the system as a part of the normal processing.

Audit observed that management could not develop standard operating procedure (SOP) for error reporting during input and processing. SOP for error reporting procedure could have made data entered reliable and accurate.

Due to above, the risk of inaccurate and unreliable data still remains which could have been avoided.

Audit recommends fixing of responsibility on the person(s) at fault.

4.3 IS operation, maintenance and support

4.3.1 IS operations

4.3.1.1 Non-provision of System, User and Operations manuals with the developed system

The System manual, User Manual and Operations manual constitute an integral part of the system to have clear understanding and to take full advantage of the system. According to the Terms & Conditions (4.9 Documentation) of Request For Proposal “The Contractor shall submit all necessary manuals, installation, technical, troubleshooting manuals, CDs etc. and keep on updating the Purchaser for all related technical updates.”

During scrutiny of contract of System Development, audit observed that M/s Accountancy Outsourcing Services (AOS) was hired for “Consultancy for customized software development of LARMIS, scanning and indexing of manual registers and supervision of Data entry of land record” at a bid of Rs 523.923 million. The contractor was bound to submit all necessary manuals, installation, technical, troubleshooting manuals, CDs etc. and keep on updating the Purchaser for all related technical updates. However, the above manuals were not available, as these were not provided despite our several requests.

In the absence of manuals, the smooth operation of the system cannot be ensured.

Audit recommends that efforts may be made to get these manuals besides fixing of responsibility on the person(s) at fault for such lapse.

(OM # 15)

4.3.1.2 Non-Development of Standard Operating Procedures for Operation of LARMIS, Disaster Recovery Site, Backup procedures and Data Centre

LARMIS is a complex and a new system, generally in Sindh, especially in Board of Revenue department and in such situations organizations are required to

compile a set of instructions which help workers to carry out these complex operations. These set of instructions are termed as Standard Operating Procedures. SOPs aim to achieve efficiency, quality output and uniformity of performance, while reducing confusion, miscommunication and failure to comply with industry regulations.

Review of the documents revealed that the services of M/s Accountancy Outsourcing Services (AOS) were hired for preparation of design and detailed specifications of Data Centre, DR Facility, ICT Infrastructure and Civil Works for Facilitation Centres. The document was prepared and submitted by M/s AOS which provide for the requirement of Development of SOPs for operations and routine maintenance of the entire Data Centre facility including all the components by M/s Zehra Communication (Pvt.) Ltd. at Sr. # 190 of part 2.1.6 “Professional Services” of 2.1 “Mandatory BOQ”.

However, audit observed that no such SOPs were developed for operations of the Information system (LARMIS), Disaster Recovery and Backup and Data Centre. Operation of these processes and areas of LARMIS are new to the staff of BoR and therefore it can fetch best result if they have SOPs for operations.

Without availability of SOPs, smooth flow of operations and uniformity in performance is in question.

Audit recommends that SOPs may be developed besides fixing of responsibility on the person(s) at fault.

(OM # 18)

4.3.1.3 Operations of IS without Incident Response Management policy/procedures

A formal incident response capability should be established to minimize damage from security incidents, recover in a timely and controlled manner, and learn from such incidents. The organization and management of an incident response capability should be coordinated or centralized with the establishment of key roles and responsibilities.

Audit observed that the management did not develop any policy to cover incidents response that could have acted as preventive control.

Due to above, the risk of mismanagement in incidents could not be mitigated.

Audit recommends that SOPs for incidents response may be developed besides fixing of responsibility on the person(s) at fault.

4.3.2 IS hardware

4.3.2.1 Acceptance of Performance Bond against the provisions of procurement rules

Rule 39(1) of Sindh Public Procurement Rules 2010 states “Procuring Agency shall, in all procurement of goods, works and services, carried out through open competitive bidding, require security in the form of pay order or demand draft or bank guarantee, an amount sufficient to protect the procuring agency in case of breach of contract by the contractor or supplier or consultant, provided that the amount shall not be more than 10% of contract price;”

During scrutiny of contract documents of establishment of Data Centre, Disaster Recovery Centre and 27 Facilitation Centres, audit observed that M/s Zehra Communication (Pvt.) Ltd. was hired for “Establishment of Data Centre, Disaster Recovery Centre and 27 Facilitation Centres in Sindh, one in each District” at a bid price of Rs 596.325 million. Performance Bond from EFU General Insurance Ltd. for Rs 29.816 million (5% of the contract amount) was provided against the provisions of rules, as this form of security was not allowed in rules. This violation of the rule is Mis-procurement, as per rule 56 (1) of SPPRA.

The above lapse on part of the management shows weakness of internal control system.

Audit recommends fixing of responsibility on the person(s) at fault for the acceptance of bond against SPPRA rules.

(OM # 20)

4.3.2.2 Internal control weakness due to non-availability of schedule of preventive maintenance

Preventive maintenance (PM) is a fundamental, planned maintenance activity designed to improve system equipment life and avoid any unplanned maintenance activity. This maintenance includes systematic inspection, detection, correction and prevention of incipient failures. It is the foundation of the entire maintenance

strategy. Unless the PM program is effective, all subsequent maintenance strategies take longer to implement, incur higher costs and have a higher probability of failure.

Audit observed that there was no evidence that the management has planned any preventive maintenance of the equipments of the system.

In the absence of preventive maintenance, there is likelihood that frequent disruptions may occur in the system and it may not perform as desired.

Audit recommends fixing of responsibility on the person(s) at fault.

4.3.3 IS architecture and software

4.3.3.1 Unauthorized issue of supply order of Diesel to the bidder – Rs 44.96 million

Rule-10 (i) and (ii) General Financial Rule Volume - I, “Every public officer is expected to exercise the same vigilance in respect of expenditure incurred from government money, as a person of ordinary prudence would exercise in spending his own money”.

During scrutiny of tender documents, audit observed that bid for “Support and maintenance of Diesel Genset” was invited through tender at total cost of Rs 75.751 million. Total eight items were included in the bid which included Supply of HSD at different site locations at a cost of Rs 44.96 million. The invitation to bid was meant for provision of service for support and maintenance of Genset. The invitation to bid for supply of HSD is not justified as the successful bidder was neither a POL supplier nor it was a bid for supply of HSD. In the above circumstances, the issuance of supply order for diesel for Rs 44.96 million stands unauthorized.

The above lapse on part of the management shows weakness of internal control system.

Audit recommends fixing of responsibility on the person(s) at fault for violation of specified provision.

(OM # 21)

4.3.3.2 Excess payment of mobilization advance over committed in agreement - Rs 29.095 million

According to the Terms & Conditions (4.1 Payment Terms) of Request For Proposal for the work “Consultancy for customized Software Development of Land Administration and Revenue Management Information System, Scanning and Indexing of manual registers and Supervision of data entry of land record”

Mobilization advance @ 20% of the total Software component value was to be paid at the signing of the contract against Advance Payment Guarantee.

Audit observed that work of Consultancy for customized software development of LARMIS, scanning and indexing of manual registers and supervision of Data entry of land record was awarded to the consultant M/s Accountancy Outsourcing Services. An amount of Rs 97.427 million was paid as mobilization advance as per agreement entered with the consultant. However, it was noted the payment was made in excess of the amount committed in the agreement (detail below). Excess payment of mobilization advance stands unauthorized.

Sr. #	Component	Committed	of	Cost	Due	M.Adv.	Excess
1	Software Development	20%	of	103.010	20.602		
2	Scanning & Indexing	20%	of	238.650	47.730		
Total					68.332	97.427	29.095

The above lapse on part of the management shows weakness of internal control system.

Audit recommends fixing of responsibility on the person(s) at fault and results thereto be shared with audit.

(OM # 23)

4.3.4 Disaster Recovery Planning

4.3.4.1 Selection of Disaster Recovery site without Business Impact Analysis

Disaster recovery planning is a multi-stage process, and one of the most vital of those stages is the business impact analysis (BIA). A business impact analysis is where you research the likely impact of a disruption to your organization in terms of loss of business, effects on your reputation, loss of staff and loss of data. In some ways it is the core of the disaster recovery planning process because it is during the business impact analysis you will determine the precise effects of disaster on your organization.

Audit observed that disaster recovery site was developed at BoR office Hyderabad, however, the business impact analysis was not carried out to identify associated risks with the selection of DR site.

Due to above, chances of frequent disruptions cannot be ruled out.

Audit recommends fixing of responsibility on the person(s) at fault and necessary steps may be taken to stop such lapses.

4.4 Protection of Information Assets

4.4.1 Importance of information security management

4.4.1.1 Weak security mechanism due to non-appointment of responsible Security professional

A security program provides the framework for keeping organization at a desired security level by assessing the risks it faces, deciding how it will mitigate them, and planning for how it will keep the program and security practices up to date. For this purpose, the main mission of the security team is to continually monitor the security of system and communication links, resolve any security conflicts that impede the expeditious recovery of the system, and assure the proper installation and functioning of security software. Additionally, the team should develop the needed steps to maintain a similar level of information and IT resource security as was in place at the primary site before the contingency, and implement the needed security measures in the alternative procedures environment.

Audit observed that the management had not offered due importance to the information security, putting the value of huge data at stake. The system of LARMIS has investment of millions of rupees of government exchequer and having a system such as LARMIS without security professional put it at risk.

Due to above, the risk of disruptions in the system could not be mitigated.

Audit recommends fixing of responsibility on the person(s) at fault, besides taking remedial measures.

4.4.1.2 Weak security control due to non-classification of information assets

Information assets have varying degrees of sensitivity and criticality in meeting business objectives. Important first step to data classification are discovery, inventory and risk assessment. The risk assessment should take into consideration that the value of the asset is directly proportional to its role in the strategy of the enterprises. Once this is accomplished, data classification can then be put into use.

By assigning classes or levels of sensitivity and criticality to information resources and establishing specific security rules for each class, enterprises can define the level of access control and the retention time and destruction requirements that should be applied to each information asset. Data are therefore classified and protected in accordance with the degree of sensitivity and criticality assigned to them.

Audit observed that the management had not carried out exercise of classification of information assets and therefore could not devise specific controls for various assets.

Due to above, the chances of insufficient and incomplete controls cannot be avoided.

Audit recommends fixing of responsibility on the person(s) at fault.

4.4.2 Network infrastructure security

4.4.2.1 Use of free-wares on various terminals

Freeware is programming that is offered at no cost and is a common class of small applications available for downloading and use in most operating systems. While freeware may be used without payment it is most often proprietary software and usually modification re-distribution or reverse engineering without the author's permission is prohibited. Free apps seem harmless, and they're very tempting. But even if the app itself is legitimate and thoroughly vetted, it can still pose a security risk to the device it's running on. Free apps are more dangerous to your employees and your network than they appear at first glance. Some of the risks attached with freeware are unauthorized access, data collection, sniffing of data, spying etc.

During visits to various Service centers, audit observed that it was a common practice that various freeware were running on different terminals and the users of the terminals were unaware of the risks associated with the use of these freeware.

Due to above, the risks of malicious activities, data leakage, disruptions in service cannot be ruled out.

Audit recommends fixing of responsibility on the person(s) at fault and necessary steps may be taken to rectify the lapses.

4.4.2.2 Formal Security awareness and trainings not conducted

Effective security will always be dependent on people. As a result, security can only be effective if employees know what is expected of them and what their responsibilities are. They should know why various security measures, such as locked doors and use of logon IDs, are in place and the repercussions of violating security. Promoting security awareness is a preventive control. Through this process, employees become aware of their responsibilities for maintaining good physical and logical security. This can also be a detective measure, because it encourages people to identify and report possible security violations. Training should start with the new employee orientation or induction process. Ongoing awareness can be provided in company's newsletters through visible and consistent security enforcement and short reminders during staff meetings. The security administrator should direct the program.

Audit observed that the staff was not aware of the importance of various acts threatening to the security of the data. There was no evidence of conducting of raising awareness and trainings for physical and logical security strengthening.

Due to above chances of frequent security breaches cannot be ruled out.

Audit recommends fixing of responsibility on the person(s) at fault and necessary measures may be adopted for training etc.

4.4.3 Environmental Exposure and controls

4.4.3.1 Weak environmental control due to absence of Smoke & Fire Detectors

Certain natural and manmade events have the ability to do great damage to an enterprise's information systems and business processes. Most data centers/information processing facilities (IPF) have mechanisms to prevent, detect or mitigate the impact of these threats. However, it is important that the readiness and sufficiency of these controls be periodically tested by management to ensure that they will function as intended. The security of the facility should be evaluated to ensure that it has the proper physical and environmental access controls. These controls include the ability to limit access to only authorized users of the facility, raised flooring, humidity controls, temperature controls, specialized circuitry, uninterruptible power supply, water detection devices, smoke detectors and an appropriate fire extinguishing system.

Audit observed that smoke and fire detectors were not installed in the information processing facilities in Clifton (Head office) Karachi and D.R site at BoR Hyderabad.

Due to above, chances of any mishap and its escalation cannot be ruled out.

Audit recommends fixing of responsibility on the person(s) at fault and take steps for installation of fire detectors on urgent basis.

4.4.3.2 Weak environmental control due to location of the Data Centre at seaside

Geographical location of the data center is one of the single most important and determining factors in data center selection. The reason is speed. End-users demand speed and performance, and even very slight performance delays can turn users away from an application. The site location should be where the risk of natural disasters is acceptable. Natural Disasters include but are not limited to forest fires, lightning storms, tornadoes, hurricanes, earthquakes and floods.

Audit observed that the site selected for the Data center was at Revenue House, Clifton Karachi which is very near to sea-side. The site is therefore prone to inherent risk of lightning storms, tornadoes, hurricanes, earthquakes and floods.

Due to above, the risk of disruptions due to lightning storms, tornadoes, hurricanes, earthquakes and floods cannot be avoided.

Audit recommends fixing of responsibility on the person(s) at fault.

4.5 Miscellaneous

4.5.1 Misclassification of Expenditure – Rs 1.291 million

“The funds allocated for one unit of appropriation cannot be utilized for another unit without prior approval of the Finance Department” according to the Notification issued by Finance Department Karachi vide # B/2 (63)/78 part-II/20 dated 30th November, 1981.

Scrutiny of documents revealed that expenditure of Rs 1.291 million was incurred on hiring of consultant for “Consultancy services for Third Party Software Audit and Evaluation for LARMIS”. However, the expenditure was charged to the

head of account “Hardware” instead of its actual head of account “Consultancy charges”. The expenditure therefore stands misclassified.

The above lapse on part of the management shows weakness of internal control system.

Audit recommends fixing of responsibility on the person(s) at fault and take steps for rectification of misclassified expenditure.

(OM # 04)

4.5.2 Unauthorized payment of Mobilization advance Rs 74.823 million

As per Para – 11 of G.F.R. Volume – I each head of a department is responsible for enforcing financial order and strict economy at every step. He is responsible for observance of all relevant financial rules and regulations, both by his own office and by sub-ordinate disbursing officer.

Review of following contracts under LARMIS Sindh disclosed that a payment of Rs 74.823 million was made to various contractors/consultants on account of mobilization advance. There is no provision of payment of mobilization advance in SPPRA 2010, therefore, the payment of mobilization advance stands unauthorized.

Sr. #	Contractor/Consultant	Contract	Cheque # & Date	Amount (million)
1	M/s Sidat Hyder Murshid Associates	Third Party Software Audit & Evaluation	48022 03-10-12	0.998
2	M/s Accountancy Outsourcing Services	Consultancy for customized software development of LARMIS, scanning and indexing of manual registers and supervision of Data entry of land record	35393 13-06-12	73.825
Total				74.823

Due to above, undue favour was extended to the consultant.

Audit recommends fixing of responsibility on the person(s) at fault and take steps for recovery of mobilization advances.

(OM # 22)

4.5.3 Issuance of repeat orders in every major work/supply order

According to Rule 16(1)(e) of SPPRA 2010, “Repeat Orders – means procurement of additional quantities of the item(s) from the original contractor or supplier, where, after the items originally envisaged for the project or scheme have been procured through open competitive bidding, and such additional quantities of the same item(s) of goods or works are needed to meet the requirements of the project or scheme;

Provided that;

- (i) the cost of additional quantities of item(s) shall not exceed 15% of the original contract amount; and
- (ii) the original supplier and contractor are willing to supply goods or carry out additional work on the same prices as agreed in the original contract.
- (iii) in case of goods, it shall be permissible only within the same financial year, and in case of works, during the currency of the project(s) or scheme(s).

Scrutiny of following contracts under LARMIS revealed that various major contracts were awarded to the contractors/consultants (detail below) under LARMIS. However, it was noted that, in almost all the major contracts, repeat orders were placed to the contractors. In this regard, following observations were noted.

- Such type of procurement is applicable for procurement of goods and works and not for services.
- No separate agreement was executed.
- It seems that the procurement plan for services was not prepared by foreseeing actual requirement.
- Extension of orders in all major contracts shows that the benefit was extended to the contractors/consultants.

Sr. #	Contractor/ Consultant	Contract	Contract Amount	Total order/ Paid	Excess
1	M/s Sidat Hyder Murshid Associates	Third Party Software Audit & Evaluation	4.889	5.378	0.489
2	M/s Accountancy Outsourcing Services	Consultancy for customized software development of LARMIS, scanning and indexing of manual registers and supervision of Data entry of land record	523.922	537.662	13.74

Sr. #	Contractor/ Consultant	Contract	Contract Amount	Total order/ Paid	Excess
3	M/s. Zehra Communication	Establishment of Data Centre, Disaster Recovery Centre and Infrastructure development of 27 Facilitation Centers in Sindh	596.325	613.623	17.298
Total			1125.136	1156.663	31.527

The above lapse on part of the management shows weakness of internal control system.

Audit recommends fixing of responsibility on the person(s) at fault for issuance of repeated orders etc.

(OM # 26)

4.5.4 Non-production of record

Section 14 (2) and (3) of the Auditor-General's (Functions, Powers and Terms and Conditions of Service) Ordinance, 2001, states that "the officer in charge of any office or department shall afford all facilities and provide record for audit inspection and comply with requests for information in as complete form as possible and with reasonable expedition. Any person or authority hindering the auditoria functions of the Auditor General regarding inspection of accounts shall be subject to disciplinary action under Efficiency and Discipline Rules".

During Information System Audit of Land Administration & Revenue Management Information System (LARMIS) Sindh in the audit year 2016-17, various records and information was sought, but the same was not produced to audit for review. The following correspondence was made for production of record/information, but the same was not responded.

Sr. #	Letter # & Date	Record/Information
01	DGAS/IS Audit/LARMIS/2016-17/05 dt: 05-06-2017	System Access
02	DGAS/IS Audit/LARMIS/2016-17/04 dt: 30-05-2017	Data for Data Analysis
03	DGAS/IS Audit/LARMIS/2016-17/03 dt: 16-05-2017	Microsoft SQL Server database system security and management policies
04	DGAS/IS Audit/LARMIS/2016-17/02 dt: 08-02-2017	Inventory of Information Assets

Audit recommends fixing of responsibility on the person(s) at fault, besides taking steps for providing of record to audit.

5 CONCLUSION

5.1 Key Issues

1. Access to the system and data was not provided. This could have been very useful to verify integrity, reliability and correctness of data and to have an idea regarding Scanning, Indexing and Data entry work. Due to this, Data analysis could not be performed.
2. Strategies, Policies, Procedures set the direction of the organization and due to their absence, the organization may lose it. Setting KPIs help to gauge performance and evaluation of the success or failure of the project. All of the above were not available.
3. Shortcomings in procurement management
4. Study and Third Party audit are the tools for guidance and rectification of errors and mistakes. Non-implementation of their recommendations and suggestions caused delays and deficiencies in the system. Further, many issues which were conceptualized in PC-I were not made part of the LARMIS application. These reduced the intended benefits of the system to the stakeholders.
5. Evaluation and monitoring activities were not performed as were required, being a new and complex system, as only operations in controlled environment, can guarantee success of the system.
6. Adopted procedure for international trainings was not transparent as the payments were made to the contractors. This procedure was also not helpful in savings which could have been obtained had the management contacted directly with the training providers.

5.2 Lessons Learnt

1. Strategies, Policies and procedures may be framed for smooth operations of the system and to help the responsible staff in performing their duties. It will also create consistency in operations.
2. Procurement and Contract management was not up to the mark. This area needs to be refined and made efficient and effective.
3. Recommendations and suggestions of management consultant, Third Party auditors may be adhered to improve the efficiency and effectiveness of the system which will increase the benefits to the stakeholders.

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