ANNUAL GENERAL REPORT OF THE CONTROLLER AND AUDITOR GENERAL

ON THE AUDIT OF INFORMATION SYSTEMS FOR THE YEAR ENDED 30TH JUNE, 2019

UNITED REPUBLIC OF TANZANIA

NATIONAL AUDIT OFFICE

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In reply please quote
Ref.No. CGA.319/421/01/17 **30th March, 2020**

Dr. John Pombe Joseph Magufuli,
The President of the United Republic of Tanzania,
State House,
P.O. Box 1102,
1 Julius Nyerere Road, Chamwino,
40400 DODOMA.

Your Excellency,

Re: Submission of Annual General Report of the Controller and Auditor General on the audit of Information Systems for the year ended 30th June, 2019

Pursuant to Article 143(4) of the Constitution of the United Republic of Tanzania of 1977 (as amended from time to time) and Section 34(1)(c) of the Public Audit Act No. 11 of 2008, I hereby submit to you my Annual General Report on audit of Information Systems for the year ended 30th June, 2019.

I submit

Mr. Charles E. Kichere
CONTROLLER AND AUDITOR GENERAL

General Information

Mandate

The statutory duties and responsibilities of the Controller and Auditor General are given under Article 143 of the Constitution of the URT of 1977 (as amended from time to time) and in Section 10 (1) Public Audit Act, No. 11 of 2008.

Vision

To be a highly regarded Institution that excels in Public Sector Auditing.

Mission

To provide high quality audit services that improve public sector performance, accountability and transparency in the management of public resources.

Core Values

In providing quality services, the National Audit Office of Tanzania (NAOT) is guided by the following Core Values:

- **Objectivity:** We are an impartial organization, offering services to our clients in an objective and unbiased manner;
- **Excellence:** We are professionals providing high quality audit services based on best practices;
- **Integrity:** We observe and maintain high standards of ethical behavior and the rule of law;
- **People focus:** We focus on stakeholders' needs by building a culture of good customer care and having competent and motivated work force;
- **Innovation:** We are a creative organization that constantly promotes a culture of developing and accepting new ideas from inside and outside the organization; and
- **Best resource utilization**: We are an organization that values and uses public resources entrusted to it in efficient, economic and effective manner.

We do this by:

- Contributing better stewardship of public funds by ensuring that our clients are accountable for the resources entrusted to them.
  Helping to improve the quality of public services by supporting innovation on the use of public services;

- Providing technical advice to our clients on operational gaps in their operating systems;
- Systematically involving our clients in the audit process and audit cycles; and providing audit staff with adequate working tools and facilities that promotes independence.

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LIST OF ABREVIATIONS

AICC	Arusha International Conference Centre
ARU	Ardhi University
BCP	Business Continuity Plan
COBIT	Control Objectives for Information and Related Technologies
DRP	Disaster Recovery Plan
EFD	Electronic Fiscal Device
EFDMS	Electronic Fiscal Device Management System
e-GA	e- Government Agency
EPZA	Tanzania's Export Processing Zones Authority
ERMS	Enterprise Resources Management Suite
eTec	Electronic Ticketing and Access Control
EWURA	Energy and Water Utilities Regulatory Authority
FCT	Fair Competition Tribunal
GBT	Gaming Board of Tanzania
GePG	Government electronic Payment Gateway
HESLB	Higher Education Students' Loans Board
IAA	Institute of Accountancy Arusha
IAE	Institute of Adult Education
ICT	Information Communication Technology
IFMS	Integrated Financial Management System
iSQMT	Integrated Standardization, Quality Assurance, Metrology and Testing
ITIL	Information Technology Infrastructure Library
KADCO	Kilimanjaro Airport Development Company Limited
KPI	Key Performance Indicator
LATRA	Land Transport Regulatory Authority
MSD	Medical Stores Department
MWTC	Ministry of Works , Transport , and Communication
NAOT	National Audit Office of Tanzania
NBAA	National Board of Accountants and Auditors
NCAA	Ngorongoro Conservation Area Authority

NECTA	National Examination Council of Tanzania
NIC	National Insurance Corporation
NIDC	National ICT Data center
NMT	National Museum of Tanzania
ORCI	Ocean Road Cancer Institute
PO- PSMGG	President Office Public Service Management and Good Governance
PPRA	Public Procurement Regulatory Authority
PSSSF	Public Service Social Security Fund
PST	Permanent Secretary Treasury
RPO	Recovery Point Objective
RTO	Recovery Time Objcetive
SBT	Sugar Board of Tanzania
SLA	Service Level Agreement
SUA	Sokoine University of Agriculture
TANAPA	Tanzania National Parks Authority
TANTRADE	Tanzania Trade Development Authority
TASAC	Tanzania Shipping Agencies Corporation
TBC	Tanzania Broadcasting Corporation
TBS	Tanzania Bureau of Standards
TCAA	Tanzania Civil Aviation Authority
TCRA	Tanzania Communication Regulatory Authority
TCU	Tanzania Commission for Universities
TFRA	Tanzania Fertilizers Regulatory Authority
TIN	Taxpayer Identification Number
TMDA	Tanzania Medical and Drugs Authority
TPA	Tanzania Ports Authority
TPC	Tanzania Postal Corporation
TRA	Tanzania Revenue Authority
TTCL	Tanzania Telecommunications Corporation
URT	United Republic of Tanzania
WCF	Workers Compensation Fund

PREFACE

This Annual General Report for information systems is a summary of results on the audits of information systems for the year ended 30th June, 2019. The report was prepared and submitted to the President of the URT in accordance with Article 143 of the Constitution of the URT of 1977 (as amended from time to time) and Section 34(1) & (2) of the Public Audit Act No. 11 of 2008. It contains a summary of main findings that were issued in detailed management letters and audit reports to the managements of MDAs, LGAs and PAs.

It is my expectation that the report would assist government of URT to assess identified challenges in implementation of information systems and adoption of ICT in the government of URT to ensure improvement of government operations and enhancement of internal controls to realize value for money.

Pursuant to Article 143(2)(c)& (4) of the Constitution of the URT of 1977 (as amended from time to time) the Controller and Auditor General is required to audit at least once a year and submit to the President of the URT every report he makes that are later tabled to the Parliament.

Operational independence of the NAOT has improved following the enactment of the Public Audit Act No.11 of 2008 and the Public Audit Regulations of 2009. However, there is a need of improvement for working resources in order to effectively discharge my constitutional mandate and obligations.

I hope that the Government, Parliament, Development Partners and the Public in general will find this report useful in knowing how the information systems are managed by the Accounting Officers. In this regard, I will appreciate to receive feedback and comments from

users of the report within 21 days of issuance and receipt of the reports for future improvement.

CONTROLLER AND AUDITOR GENERAL

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Dodoma.

March, 2020

ACKNOWLEDGEMENTS

I appreciate the support given to my office by the key stakeholders that enabled us to carry out our constitutional obligation; they include the Parliamentary Budget Committees such as Public Accounts Committee (PAC) and Local Authority Accounts Committee (LAAC), Paymaster General, Accounting Officers in respect of MDAs, Local Government Authorities (LGAs) and Public Authorities (PAs) who manage information systems.

My sincere appreciation goes to all NAOT staff for their dedicated hardworking and due diligence to accomplish this constitutional commitment. It is my hope that they will continue to provide efficient and effective audit services in order to enhance transparency and accountability in the collection and use of public resources.

I would like to extend my special appreciation to the Development Partners, particularly, African Development Bank (AfDB), World Bank (WB), Department for International Development (DFID), KFW - Germany, International Fund for Agricultural Development (IFAD), Japan International Cooperation Agency (JICA), European Union (EU), Center for Decease Control and Prevention (CDC), UNICEF, UNDP and all other well-wishers that contributed their funds for capacity building and working resources towards modernization of audit functions.

Lastly, I would like to thank the Printer for expeditiously publishing this report.

EXECUTIVE SUMMARY

The Government of the United Republic of Tanzania recognizes that effective use of ICT is a critical factor for rapid socio-economic growth, in its aspiration to become a middle-income country by 2025. In this regard the government formulated National ICT policy to provide guidance in utilization of ICT to deliver expected benefits. In line with this policy the government established e-Government Agency under President's Office – Public Service Management and Good Governance (PO-PSMGG), the ministry responsible for ICT in the government to oversee ICT initiatives in government entities through implementation of Tanzania e-Government strategy. The Agency has formulated various ICT standards and guidelines to be used by government entities to ensure effective ICT internal controls and value delivery.

This general report provides a summary of main findings derived from information systems audits of government entities whose audit reports have been separately issued to the Accounting Officers. The following are the main findings from the audit conducted.

Assessment of Implementation of National ICT policy strategy at the Ministry of Works, Transport and Communications revealed inadequacies of governance structure in managing implementation of the strategy. There is no National goverance organ separate from the implementing institution, currently the Minstry is responsible for both oversight and implementation at the same time.

No clear definition of responsibilities with their timelines for all institutions which have roles to play in implementing the strategy. Unclear mechanism to ensure National ICT policy strategies are translated to strategic plan of individual implementing institutions. Similarly, it was noted that there were no strategies for monitoring and evaluation as well as mobilizing fund to enable implementation of the National ICT policy strategies, hence delay implementation of strategy.

My assessment of the implementation of e-Government strategy at ministerial level noted some weaknesses: PO-PSMGG has not performed periodic monitoring and evaluation of the strategy to ensure objectives are timely achieved. Further, I noted that the Ministry has not been effectively overseeing implementation of e-GA's strategic plan in line with e-Government strategy. I also noted that, while the period covered by strategy ended in July 2018, the new strategy had not been developed to provide strategic directions in implementing ICT initiatives.

I noted irregularities in identifying, coordinating and reporting common e-Government initiatives. Government entities submit details of ICT projects to e-GA for review so as to ensure effective management and identification of common capabilities. However, e-GA's review does not cover identification of common initiatives to avoid duplication of efforts and the report issued does not specify findings and recommendations related to weaknesses identified in the submitted projects.
I also noted irregularities in identifying, coordinating and reporting common e-Government initiatives in the government and integration of application systems. Other issues noted include existence of conflicting services/functions of the e-GA and lack of service level agreement between Government entities and e-GA.

My review of ICT governance noted concerns relating to: ICT strategic plans; organization and reporting structure; steering committee;, risks management;, and decentralized management of operations. ICT strategic plans are inadequately monitored and evaluated. For instance, my audit at Tanzania Medical and Drugs Authority (TMDA) and Tanzania National Parks Authority (TANAPA) noted lack of monitoring and evaluation of ICT strategic plans. At Tanzania Bureau of Standards (TBS) and Tanzania Telecommunications Corporation (TTCL), I noted lack of oversight of the ICT steering committee which could result in non-alignment of ICT initiatives with organizations' strategic objectives.

Furthermore, my assessment revealed inadequacies in reporting structure of ICT Department/Unit. Some institutions lack ICT Steering Committees while on the other hand there were cases where the committee exist but not are operational. For example, in Sugar Board of Tanzania (SBT) the ICT Manager reports to the Director of Finance instead of the Accounting Officer. I noted lack of oversight of the ICT steering committee which could result to non-alignment of ICT initiatives with organizations' strategic objectives.

Weaknesses in ICT risks management were also noted whereas institutions lack ICT Risk Register. There were cases where ICT risks are not adequately monitored. For instance, Export Processing Zones Authority (EPZA) and National Board of Accountants and Auditors (NBAA) lack ICT Risks Register. This implies that the entities cannot devise appropriate risk mitigation procedures. Similar review at Business Registration and Licensing Authority (BRELA) revealed that the Agency had ICT risk register, but it lacks effective mechanism to monitor the implementation of identified mitigation controls.

My audit of six ICT projects noted noncompliance with ICT projects management best practices and guidelines issued by e-Government Agency guidebook for managing ICT projects and risks. I noted duplication of efforts in implementation sugarcane farmers' registration information systems; Weaknesses in managing project to upgrade sugarcane out-growers registration system; Irregularity in implementation of iSQMT project at TBS; and delay implementation of online case information system.

During the audit, I assessed effectiveness of controls in application systems that manage business operations in selected government entities. My audit revealed weaknesses in the management of accounting application systems, revenue collection systems and control of accounting systems. My audit of IFMS Epicor accounting system at Land Transport Regulatory Authority (LATRA), Tanzania

Medical and Drugs Authority (TMDA), Tanzania Shipping Agencies Corporation (TASAC) and Tanzania Communication Regulatory Authority (TCRA) noted control weaknesses associated with budget management, capturing of receipts, cancelation of payments and preparation of financial statement reports.

My assessment on the efficiency of collecting and reporting revenue reveals weaknesses on TPA billing system. Similarly the review of Vehicle Tracking System at LATRA revealed that calculation of penalties for committed offenses is done manually outside the system by officers after receiving report from control center. This is prone to human errors and manipulation since the decision is left to LATRA officers to determine how much should be charged for tracked offenses.

Other issues noted on data input validations and processing of tax collections through iTAX system; electronic fiscal devices (EFD); Control weaknesses of the application system used to issue licenses to sugar importers; and Weaknesses of application controls on SUASIS application at SUA.

There are cases of unutilized modules in some systems, such cases include unutilized modules in ARUTI application system at Tanzania Shipping Agencies Corporation (TASAC) and Tanzania Medical and Drugs Authority (TMDA). Unutilized inventory module of accounting systems noted in Land Transport Regulatory Authority (LATRA) and Sokoine University of Agriculture (SUA) noted that both entities did not activate inventory modules of their accounting systems. Inventory is maintained manually outside the system.

My other review of application controls noted existence of transactions or operations performed outside systems leading to inconsistence of information. It was noted that TANTRADE transactions for seasonal car stickers amounting to TZS 28,051,900 were conducted outside Electronic Ticketing and Access Control (eTec). This was also the case for TANAPA where I noted that 35

sampled permits with the value of TZS 2,116,534 and USD 7,021.50 were issued and the respective amounts collected outside the system due to computer network breakdown. In the same tune I audited HESLB and identified that refund payment for over deductions and receipts from non-beneficiaries amounting TZS 2.47 billion paid to 2,978 individuals were done outside HESLB accounting system. These were refunds.

Lack of application system integration has been noted for instance between revenue application system and accounting system at Tanzania Posts Corporation (TPC); Non integration of accounting system with GePG; similarly, Lack of integration between students information system and accounting system.

My review of ICT General Controls in government entities to assess ICT Business Continuity and Disaster Recovery Planning, service delivery, management of ICT third parties/vendors, application system change management, application system access controls, and ICT documented procedures reveals irregularities in Business Continuity and Disaster Recovery Plans. Cases of mismatch of RPO and the backup interval for critical application systems were noted in Energy and Water Regulatory Authority (EWURA) and Tanzania Telecommunications Corporation (TTCL).

Assessment of ICT general controls noted cases such as excessive application system access rights granted to vendor; lack of a contract with ICT service provider, lack of Service Level Agreement (SLA).

In my review, I also assessed effectiveness of application change management controls and noted irregularities in managing changes to application systems. I noted that EWURA and SUA implemented changes to application systems without complying with application change management controls. Changes were not documented, approvals from respective user departments were not substantiated and assessment of risks and fallback plan were not done to avoid

operation disruption. Similar review at Workers Compensation Fund (WCF) and Ngorongoro Conservation Area Authority (NCAA) noted inadequate segregation of duties for effecting changes in the application system. Change migrators were part of development team and had access to both test and production environment.

Finally I reviewed ICT operations with regard to ICT service management procedures and noted that IAE, KADCO, TASAC and NMT did not have documented procedures for incident management, service request management, helpdesk management and change management.

Based on my audit findings, most of the weaknesses noted on management of ICT operations in government entities were attributed to inadequate efforts to ensure implementation of National ICT policy and Tanzania e-Government strategy. Consequently, the level of government entities complying with e-Government guidelines and standards is minimal leading to the noted weaknesses. I therefore recommend the following:

- Ministry of Works, Transport and Communication to ensure monitoring and evaluation of the National ICT policy implementation strategy is done and reported as stated in the strategy. Also, to develop fund mobilization strategy for funding of the strategy to ensure commitment and management of changes and associated risks.
- Ministry of Works, Transport and Communication to develop operational plan that clearly outlines activities, timelines and responsibilities of each implementing institution of the National ICT policy implementation strategy. This will ensure easy monitoring and accountability considering that one objective of the strategy is implemented by more than one institution.
- PO-PSMGG to improve oversight on implementation of Tanzania e-Government strategy by closely monitoring e-GA's strategic plan. Also should ensure monitoring and evaluation

of the strategy is effectively conducted and impact is translated to the individual government entities.

- Ministry of Finance and Planning to strengthen follow up of circular number 5 of 2019 so that acquisition and implementation of accounting and revenue systems in government entities is managed, and the noted anomalies of application controls are avoided to improve revenue collection and fiscal reporting.
- Ministry of Finance and Planning to ensure acquired accounting and revenue application systems are fully utilized to ensure value for money, and all transactions are done in the systems for consistence of information
- Ministry of Finance and Planning to ensure accounting systems and revenue collection systems are integrated for effective reporting of revenue collection.
- The e-Government Agency to improve internal controls to ensure effective identification, coordination and reporting of common ICT initiative and system integration in the government.
- The e-Government Agency to avoid conflicting of its function by ensuring that it does not review or audit entities which e-GA was implementer of ICT initiatives.
- The e-Government Agency to ensure it has contracts and SLAs with all government entities receiving its services for accountability purposes.
- PO-PSMGG through e-Government Agency to improve follow up of compliance with e-Government guidelines and standards in government entities especially on areas related to weaknesses presented by this report.

CHAPTER ONE

1.0 BACKGROUND

The government of Tanzania has embarked on the use of ICT through implementation of e-Government strategy, the objective being to promote more efficient and effective government operations, facilitate accessibility of government services, allow greater public access to information and make government more accountable to citizens. Government entities have been increasingly computerizing their operations in recognition of the remarkable benefits that ICT brings in improving operations efficiency and effectiveness in service delivery to the public.

The increasing dependence of government entities on ICT raises a need for auditing ICT controls associated with application systems in use and management of ICT operations to ensure continuity, reliability and security. An Information Technology (IT) audit is an audit of an organization's ICT governance, controls of application systems, general controls surrounding information systems and controls related to security of information being processed.

I have audited information systems in the financial year ended 30th June 2019. This general report provides a summary of main findings derived from 39 individual audits conducted in information systems whose audit reports have been separately issued to the audited entities. The objectives of my IT audits include:

- Ascertaining the level of compliance with the applicable laws, policies and standards in relation to IT;
- Evaluating the reliability of data from IT systems which have an impact on the financial statements of the organizations;
- Checking if there are instances of inefficiencies in the use and management of IT systems; and
- Obtain assurance on whether the IT systems are adequately protected so that they provide reliable information to users.

1.1 Audit Mandate and Rationale for Audit

I am required by Section 10 of the Public Audit Act No. 11 of 2008, among others, to satisfy myself on whether collection of public monies, safeguard public interest and that all expenditure of public monies has been properly authorized and applied to the purposes for which they were appropriated and that the laws, directions and instructions applicable thereto have been duly observed; and economy, efficiency and effectiveness have been achieved on the use of public resources.

1.2 Responsibilities of the Controller and Auditor General

My responsibility is to evaluate ICT controls to determine whether they are working efficiently and effectively, and provide reliable information to users and properly managed to achieve their intended benefits.

I am required by Section 10 (2) of the Public Audit Act No. 11 of 2008 to satisfy myself that:

- Accounts have been prepared in accordance with the appropriate accounting standards and legal framework;
- Reasonable precautions have been taken to safeguard the collection of revenue, receipt, custody, disposal, issue and proper use of public property; and
- Law, directives and instructions applicable thereto have been duly observed and expenditures of public money have been properly authorized.

1.3 Scope and Applicable Audit Standards

1.3.1 Scope of Audit

The conducted audits covered the evaluation of the application controls, ICT governance, ICT project management, ICT risk management, ICT general controls and other audit procedures considered necessary in arriving at an audit conclusion. The audits were carried out based on risk, therefore the audit findings are confined to the extent that records, documents and information that were made available to me for audit purposes.

1.3.2 Applicable Auditing Standards

NAOT is a member of the International Organization of Supreme Audit Institutions (INTOSAI) and the African Organization of Supreme Audit Institutions of English Speaking Countries (AFROSAI-E).

In conducting my audit, I complied with ethical requirements of planning and performing of the audit to obtain reasonable assurance on whether the information systems controls are adequate and effective. Moreover, I applied procedures which are in line with AFROSAI-E Information Technology Audit Guideline – 2017, National ICT Policy: 2016, Tanzania e-Government Agency standards and guidelines, COBIT 5, and ISO/IEC 27002 an international standard for Information technology security techniques.

1.4 Organization of the Report

This general report is structured into six chapters as follows: Chapter one is an introduction covering audit mandate rationale of the audit, responsibilities of the Controller and Auditor General, scope and applicable audit standards; Chapter Two presents implementation status of prior year's audit recommendations; Chapter Three covers assessment of implementation of National ICT strategy and e-Government initiatives; Chapter Four covers review of ICT governance and management of ICT projects while chapter five covers review of application controls and IT general controls. General conclusion and recommendations are presented in Chapter six.

CHAPTER TWO

2.0 IMPLEMENTATION STATUS OF PRIOR YEAR AUDIT RECOMMENDATIONS

This chapter provides a summary of implementation status and actions taken by accounting officers towards my audit recommendations issued in previous years' Annual Audit reports in accordance with Sect. 40 (4) of the Public Audit Act No.11 of 2008.

Out of 77 recommendations from 18 audited entities in my previous years report, 16 (21 percent) have been implemented, 60 (78 percent) were not implementation, while 1 (1 percent) was overtaken by event. Overall status of implementation of recommendations is not satisfactory as most of the recommendations were not implemented.

Table 1: Description of implementation status

Status	Explanation
Implemented	When the audited entity provides sufficient and appropriate evidence of all elements of the recommendations
Not implemented	When the audited entity provides evidence which doesn't support meaningful movement towards the implementation of a recommendation or no evidence is provided where implementation might take time and it is in progress but there is nothing can be measured
Overtaken by event	When the recommendation made has been taken over by other circumstances which are likely to make the recommendation irrelevant or has less impact at that particular time

Table 2: Summary of implementation status of prior year's recommendation

Recommendation status	Number	Percentage
Implemented	16	21
Not Implemented	60	78
Overtaken by event	1	1

CHAPTER THREE

3.0 IMPLEMENTATION OF NATIONAL ICT STRATEGY AND e-GOVERNMENT STRATEGY

Information and Communication Technology (ICT) is the bedrock for national economic development in a rapidly changing global environment. Nations that have embraced ICT and made it an important aspect of their national agenda have reaped benefits in terms of social economic development. The Government of the United Republic of Tanzania recognizes that effective use of information and knowledge is a critical factor for rapid socio-economic growth, in its aspiration to become a middle-income country by 2025.

To guide Tanzania in the utilization of ICTs, the Government has been setting policy frameworks. The National ICT Policy formulated in 2003 has provided a national framework for ICTs to contribute effectively towards achieving national development goals and transform Tanzania into a knowledge-based society through the application of ICT. The Government reviewed the National ICT Policy of 2003 (NICTP 2003) and came up with the National ICT Policy 2016, to reposition Tanzania to better meet emerging opportunities while contending with their associated threats.

National ICT Policy 2016 establishes responsibilities to various players. The Ministry of Works, Transport and Communications (MWTC), which is responsible for ICT, is entrusted with the responsibility of overall coordination, implementation, monitoring and evaluation, and periodic review of the policy. The Ministry is also entrusted with development of strategies and initiates legislation for policy implementation and provision of guidelines.

The Ministry responsible for e-Government (PO-PSMGG) is accountable for developing e-Government strategy and to facilitate its implementation in Government institutions. The Ministry responsible for Regional Administration and Local Government (PO-RALG) is accountable for implementation of Policy at local

government levels and link between Central Government and communities. The policy also stipulates collaboration with private sector for PPP ICT projects. MWTC developed Tanzania National ICT Policy 2016 Implementation Strategy to translate the policy statements into actions, covering a five-year period from 2016/17 to 2020/21. The Strategy offers a fundamental direction for enhancing the ICT Sectors that are responsible for implementing ICT Policy.

This chapter presents findings on review of the strategy for implementation of the National ICT Policy 2016 for the period 2016/17-2020/21 and the 2013 Tanzania e-Government strategy. My review focused on effectiveness of the coordination between sector ministries and implementing institutions, governance structures in implementing these strategies, monitoring and evaluation mechanism and funding mechanism to ensure timely and effective implementation of policy. I will present findings on National ICT policy implementation strategy at MWTC, followed with irregularities noted in implementation of Tanzania e-Government strategy at PO-PSMGG and e-GA.

3.1 WEAKNESSES OF NATIONAL ICT POLICY STRATEGY IMPLEMENTATION

I reviewed the implementation strategy of the National ICT Policy 2016 and noted the following irregularities:

3.1.1 Inadequate National ICT governance structures and strategic leadership

The review of the governance structure in implementing the National ICT policy noted the following concerns;

(i) Lack of National ICT governance organ

Effective governance of ICT requires separating ICT governance from the implementation function in order to ensure that ICT initiatives are aligned with long term strategic goals and achieve the intended objectives. Current MWTC is responsible for oversight, acting as governing body while at the same time it is part of implementing

institutions, having responsibility to implement activities of the strategy. Therefore, this poses a need for having a national ICT governance organ that is separate from the implementing institutions, in order to oversee implementation of ICT initiatives that cater for strategic goals of the country.

Governance body ensures that stakeholders' needs, conditions and options are evaluated to achieve balanced and agreed-on national objectives. In addition, it sets the direction through prioritization, monitoring performance and ensuring compliance against agreed-on direction and objectives.

On the other hand, the implementing institutions plan, build, run and monitor the activities in accordance with the direction set by the governance body in order to achieve the nationwide strategic objectives.

(ii) Unclear mechanism to ensure National ICT policy strategies are translated to strategic plan of individual implementing institutions

Paragraph 4.3 of the National ICT Policy Implementation Strategy outlines objectives and activities/strategies with their respective implementing institutions; each objective is implemented by more than one institution. However, the strategy does not specify how each implementing institution will contribute in achieving the overlapping objective. Moreover, my review noted absence of detailed action plan that specifies activities and responsibilities of each implementing institution towards achieving the objective considering that each objective of the strategy is implemented by more than one institution. This would help implementing institutions to clearly understand their responsibilities, simplify follow up and ensure the strategy is translated to the strategic plans of implementing institutions.

I am of the view that lack of detailed action weakens national ability to achieve long term ICT plans. Similarly, it might lead to

implementation of ICT initiatives that are not aligned with national goals, therefore instead of bringing solution it could lead to institutional and sectorial ICT challenges.

I recommend the Ministry of Works, Transport and Communication to:

(a) Establish a National ICT steering committee to play the role of governing body in implementation of National ICT policy strategies; and
(b) Develop action plan for each National ICT policy strategy that outlines activities of each implementing institution, duration of activities and specify the lead implementing institution.

3.1.2 Lack of fund mobilization strategy in implementing National ICT policy

Paragraph 4.3 of the National ICT policy implementation strategy states that "In order to implement this strategy, it is estimated that a total of TZS 248.2 billion is required for the period 2016/17 – 2020/21 as per the outlined strategies and targets in a Log frame matrix. The financing arrangement will include Government budget, development partners, and the private sector".

My review of mechanism in place for fund mobilization and budget implementation revealed no evidence to substantiate the fund had been mobilized and that there was any mechanism in place to ensure the budget was going to be funded as planned. On inquiry, I was informed that several players have utilized financial resources in implementation of ICT activities and investment (in line with the implementation strategy document). I was further informed that, through Private sector and the Government, the implementation is being done by various players in the sector. Thus, the Ministry has planned to undertake mid-year evaluation in the next financial year (2020/2021) to evaluate and through this evaluation, to determine the actual resources that have been utilized.

However, I am concerned that, initially fund mobilization strategy was supposed to be established in line with budget and action plan. This would have necessitated effective budget implementation through commitment from various sources, anticipation of budgetary risks with their mitigations and effective management of budget changes.

I am of the view that failure to establish fund mobilization strategy to clearly specify how and when funds can be obtained will delay implementation of the strategy.

I recommend the Ministry of Works, Transport and Communication to develop fund mobilization strategy for implementation of National ICT strategies in line with the action plan and budget. The strategy should clearly specify commitments from fund sources, assess associated risks with their mitigations and outlines how changes will be managed.

3.1.3 Lack of monitoring and evaluation of the National ICT policy implementation strategy

Paragraph 5.4.1 of the National ICT policy (NICTP) 2016 implementation strategy requires indicators to be reported on an annual basis and tracking to be done on a quarterly basis. Also paragraph 5.4.3 requires various meetings to be conducted to track progress on the milestones, activities and targets/outputs critical for the achievement of organizational objectives.

During the audit of Ministry of Works, Transport and Communication (which is responsible for implementation of National ICT Policy), I found that, despite the existence of ICT Policy and five years implementation strategy from 2016/17 to 2020/21, annual assessment of implementation strategy and quarterly meetings for tracking of indicators were not done.

Furthermore, the ICT implementation strategy outlined internal and external reporting plans. The internal reporting plan requires three

types of reports namely technical, quarterly and annual reports; to be prepared weekly, quarterly, annually or on-demand basis as may be required from time to time. The external reporting plan involves preparation of five types of reports namely performance, financial, annual, mid-term review and outcome reports; to be prepared on quarterly, annually or on-demand basis. However, I noted that these reports were not being prepared as required.

I am of the view that this could result to failure of achieving the intended objectives of the National ICT policy.

I recommend the Ministry of Works, Transport and Communication to monitor and evaluate the implementation of National ICT policy and periodically report the implementation status as stated therein.

3.2 WEAKNESSES OF E-GOVERNMENT STRATEGY IMPLEMENATION

The Cabinet issued a directive in 2004 to the President's Office Public Service Management (PO-PSMGG) instructing PO-PSMGG to start the implementation of e-Government initiatives. To make that ambition a reality, PO-PSMGG, the parent Ministry, was mandated to develop e-Government strategy and ensure its implementation by establishing an Executive Agency responsible for coordinating and overseeing e-Government initiatives in public institutions.

The first National e-Government Strategy was developed in 2009. It provided a clear road map for e-Government adoption in Tanzania that aimed at improving delivery of quality services and making Government more accessible and responsive to the public. The second strategy was developed in 2013 and was a five year strategy intended to provide a more co-ordinated and citizen-driven focus for the Tanzania's e-Government initiatives, and thus ensure they bring services closer to citizens through an organized and holistic adoption of ICT.

My review of implementation of e-Government strategy was done both at the Ministerial and Agency levels, to establish the effectiveness of coordination and alignment of efforts between parent Ministry and implementing Agency.

3.2.1 WEAKNESSES NOTED AT MINISTERIAL LEVEL

Irregularities in monitoring and evaluation of the Tanzania e-Government strategy

My review of the July 2013 Tanzania e-Government strategy which is the current strategy under implementation noted that, the strategy did not specify monitoring and evaluation mechanism of the targets based on specified key performance indicators. I noted that monitoring, reviews and evaluation plans were not specified to provide guideline on how achievements of targets, challenges, lessons learnt, and risks will be identified and tracked.

I also noted absence of periodic (quarterly and annually) implementation status reports on achievement of targets. There were no periodic reports to track implementation status to confirm if objectives were met in a timely and effective manner as was planned. This could ensure challenges are identified and resolved. While the strategy was for five years starting from July 2013 to July 2018, up to the time of my audit in 2019, the new strategy had not been developed. Therefore, the government was operating without e-Government strategy to provide strategic direction to stakeholders especially e-Government Agency on implementation of ICT initiatives.

I am concerned that this could lead to non-achievement of the intended objectives due to failure of effectively monitoring and measuring achievement of the Tanzania e-Government strategy.

I recommend management President's Office – Public Service Management and Good Governance to:

(a) Conduct monitoring and evaluation of the Tanzania e-Government strategy to establish achievements, implementation

status and lesson learnt for improvement; (b) Fast track development of new Tanzania e-Government strategy to provide strategic direction on ICT initiatives in the government; and
(c) Ensure the imminent Tanzania e-Government strategy specifies monitoring, review and evaluation plan.

Irregularities over supervision of e-Government Agency implementation strategy

During my review of implementation of e-Government strategy I noted that e-Government Agency reports quarterly implementation of its strategic plan to President's Office-Public Service Management and Good Governance (PO-PSMGG).

The review of follow-up, feedback and overall supervision of these reports at ministerial level noted inadequate monitoring of the status of implementation of the e-Government strategy based on reports submitted by the e-Government Agency to PO-PSMGG. There were no reports to justify that PO-PSMGG reviewed the quarterly reports submitted by e-Government Agency to measure performance, provide feedback and way forward especially on reported challenges faced by the Agency.

Variance in duration between Tanzania e-Government strategy and e-Government Agency strategy. The e-Government Agency implements e-Government strategy on behalf of PO-PSMGG, thus its strategic plan requires to be aligned with the Tanzania e-Government strategy. My review noted that the current e-Government Agency strategic plan covers a period from 2016/2017 to 2020/2021 whereas the Tanzania e-Government strategy covers the period from 2012/2014 to 2017/2018. As a result, the timing of objectives and activities are not aligned as described in table 1 for sampled activities.

Table 1: Variance of timing between Tanzania e-Government strategy and e-Government Agency strategic plan

Tanzania e-Government strategy	e-Government Agency strategic plan
e-Government M&E framework implemented by June 2016	e-Government initiatives Monitoring and Evaluation framework developed and operationalized by June 2021
Public Sector Enterprise Architecture developed by December 2015	Government enterprise Service Bus facilitated by June, 2020

Source: Tanzania e-Government strategy and e-Government Agency strategic plan

I am of the view that these noted weaknesses affect timely and effective implementation of e-Government strategy.

I recommend management of President's Office – Public Service Management and Good Governance to:

(a) Ensure the two strategies are properly aligned in terms of timing; and

(b) Review quarterly reports of e-GA, and report on performance of implementation of e-GA strategic plan on quarterly basis.

3.2.2 WEAKNESSES NOTED AT e-GOVERNEMNT AGENCY

E-Government Agency (e-GA) is a semi-autonomous institution established in 2012 under the Executive Agencies Act, No.30 Cap. 245 of 1997. Establishment of e-GA came as an implementation of National ICT Policy (2003) and Cabinet directives issued in 2004 that gave the then President's Office, Public Service Management the mandate to formulate e-Government Policy and supervise its implementation.

My review of operations of e-GA as a champion of e-Government initiatives and implementer of e-Government strategy noted the following irregularities for improvement:

Weakness of the e-GA Client Services Charter

Best practice for accomplishing customers' services expectations in line with organizations ability and commitments requires existence of customers' contract or client service charter. The client service charters do define the purpose, scope and standards of business' commitment to customer services so that both employees and customers know what to expect from the organizations.

e-GA provides ICT related service to government entities as part of implementation of e-Government strategy and fostering e-Government initiatives. Thus, the Agency established the client service charter to ensure timely and efficient service delivery. However, I reviewed the client service charter and noted the following weaknesses for improvements:

- Non-coverage of other e-GA operations such as review of ICT projects of public institutions submitted for clearance. Time taken by e-GA to review and provide comments on submitted projects has not been specified in the charter.
- Performance assessment of the client service charter for the year 2018/2019 was not done even though such assessment was done twice for sampled KPIs in year 2016/2017 and 2017/2018. I am concerned that such frequency is inadequate to ensure e-GA continuously meet the KPIs in the client service charter and that only a sample of KPIs are being assessed instead of full coverage of all KPIs.
- Inadequate mechanism to track time taken by e-GA to complete advisory and consultancy engagements.
- Unrealistic timeframe for service delivery and response time for some of the service provided as per **table 2** below, which raises concern with regard to quality of services and its associated commitments.

Table 2: e-GA services and response time

S/N	Type of Service	Response Time	Audit Concerns
1	Consultancy & Advisory Services	30 days	It is too general, as there are different scale of consulting service and more than one stages for the service responses.
2	System Development	120 days	Does not consider scope and complexity of projects.
3	ICT policy Development	90 Days	Does not consider the size of entities and ICT capacities.
4	ICT Strategy Development	90 Days	Does not recognize the size of entities and ICT maturity.
5	System reviews	60+ Working days	Means beyond sixty days without defining maximum limit.

Source: e-GA client service charter

I am of the view that these weaknesses were caused by ineffective internal mechanisms for tracking service delivery timeframe, reviewing and enforcement of Client service charter compliance. This might result to failure to attain expected level service delivery, and eventually cause customer dissatisfaction.

I recommend management of e-Government Agency (e-GA) to:
(a) Ensure that assessment of client service charter is done on a quarterly basis; and
(b) Conduct study to come up with realistic and achievable response period for services offered by e-GA and review the client service charter accordingly.

Inadequate coordination of common e-Government initiatives

According to section 2.3 of the 2016/2017-2020/2021 e-Government Agency strategic plan, the major roles and functions of the Agency include to ensure coordination, management and compliance of e-Government implementation and initiatives.

Review of ICT projects implemented by government institutions done by e-GA to identify common initiatives is not effectively done. It does not identify actual common initiatives, clarify on the actual findings and issue recommendations to institutions to improve management of ICT projects.

I also noted analysis of common capabilities does not consider the review of ICT projects submitted by public institutions; as a result, some of the common initiatives that could have been identified from the review of ICT projects were not considered in the common capability analysis report. For example, my review noted existence of common capabilities in ICT projects of Ministry of Works, transport and Communications, TANROADS, and Ministry of Justice and Constitutional Affairs that were not covered in the common capability analysis report.

Similarly, reviews of ICT projects implemented by public institutions were not being reported on annual basis to identify areas for common capability initiatives considering that the ICT projects details are received each year from public institutions. This could also enable clear reporting and tracking of challenges faced in enforcing public institutions to submit ICT project details to e-GA. I also noted absence of common capability strategy to outline the plan/roadmap on coordinating and managing the identified common ICT initiatives in the government.

I am of the view that, if common e-Government initiatives would have been identified and managed properly, this could have reduced the cost of implementation and maintenance of ICT projects and systems.

I recommend the management of e-Government Agency (e-GA) to:
(a)Ensure review of ICT projects submitted by public institutions is effectively conducted to identify common initiatives, review report should include both identified common capabilities and findings raised from the review, and the report is prepared on annual basis;
(b)Ensure analysis of common capabilities consider review of ICT projects to cover all common capabilities as per submitted ICT project details. The analysis should be done as ICT projects are submitted, reviewed and be reported annually; and
(c)Prepare and regularly update common capabilities strategy as per analysis report in recommendation (b).

Ineffective coordination of application systems integration
According to section 2.3 of the 2016/2017-2020/2021 e-Government Agency strategic plan, one of the identified critical issues that formed the basis for developing objectives of the strategic plan is creation of harmonized and unified systems and mechanisms to support integration and diversification of systems.

I reviewed e-Government Agency strategic plan for the period 2016/2017-2020/2021, the annual operation plans and reports on review of ICT projects in the government to assess effectiveness in identification, coordination and reporting of potential application system integrations in public institutions.

The review revealed that e-GA's mechanism to identify systems to be integrated in public sector is inadequate. I also noted that the review of projects submitted by public institutions does not cover analysis of application system integration; instead it only covers identification of common initiatives. For example my review of ICT projects submitted by public institutions for e-GA's review revealed a potential integration between e-visa system at Ministry of home

affairs and work permit system for foreigners at the Prime Minister's office labour, Youth, Employment and persons with disability.
Moreover, it was noted that e-Government Agency has initiated an enterprise service bus project to facilitate integration of systems among public institutions. Despite this initiative, I noted that there was no comprehensive roadmap or strategy outlining activities to be done after implementation of this project. In my view, such roadmap would outline mechanism for continuous identification of potential system integrations while waiting for the implementation of enterprise service bus, since public institutions continue to implement application systems.

I am concerned that ineffective methods for identification of potential system for integration denies the government what would accrue if the systems were integrated, including reduction of cost and improvement of the efficiency of systems in the provision of service.

I recommend management of e-Government Agency (e-GA) to:

(a) Ensure review of government ICT projects includes identification of potential system integration and identified integrations are reported and communicated to respective public institutions.

(b) Develop system integration roadmap which outlines activities to be done during and after implementation of enterprise service bus.

Existence of conflicting services/functions of the e-Government Agency

My review of the service and price catalogue and functions of e-Government Agency noted that among the services offered by e-Government Agency are; information system audit and review, compliance review with e-Government standards and consultancy service on software development, development of ICT strategy and policies.

I am concerned that for the ICT initiatives which e-Government Agency has been engaged to implement, it is a conflict for the Agency to also play a role of a reviewer and/or auditor. For example, the e-Government Agency implement the project for designing and developing application system for a government entity and at the same time it is supposed to review/audit the project; thereby creating a self-review threat. In such cases, public institutions will not be fully accountable for non-compliance with e-Government standards since implementer was the Agency. In addition, reviewing/auditing your own implementation may not be as effective as having a separate independent reviewer who was not involved in the process.

I am of the view that reviewing and audit your own implementation may lead to biasness in reporting.

I recommend e-Government (e-GA) not to review and audit government entities that it has been engaged as implementer of ICT initiatives. Instead, e-GA should establish mechanism to ensure reviews and audits are done by independent entity in such engagements.

Deficiencies in operation relationship between e-Government Agency and NIDC

e-GA entered into a contract with National ICT Data center (NIDC) on 4th February 2019 at a contract sum of TZS 49,928,435.20 for provision of rack cabinet space for hosting servers.

I reviewed the contract and noted that it had no provision that stipulates the need for e-GA to assess security controls, or mechanism that e-GA would provide assurance on the continued effectiveness of controls at NIDC. I am concerned about duplication of functions whereby NIDC and e-GA are both public entities offering the same data center service to public institutions.

I am of the view that the noted irregularity with contract leads to lack of continuous assurance on the effectiveness of security controls of the third party who is hosting e-GA servers and systems. Also, having two public entities both providing data center services to public institutions is a duplication of efforts which increase management cost.

I recommend management of e-Government Agency (e-GA) to:

(a) Include in the contract with National ICT Data Center (NIDC) a clause which requires NIDC to submit independent audit report to e-GA for assurance on effectiveness of controls.

(b) Establish memorandum of understanding (MoU) with NIDC which will ensure the two organization are working together to avoid duplication of function within the government.

Lack of service level agreement between Government entities and e-GA

Section 2.2.1 (i) of the Guidelines for development, acquisition, operations and maintenance of e-Government applications requires public institutions to operationalize ICT support services using ITIL as guided by e-Government architecture. ITIL on vendor management requires management of the ongoing operation of vendors, as well as their delivery of goods or services in accordance with their contract.

e-GA provides services to most of public institutions covering hosting of application system, provision of email services, providing data centre space and software as a service such as e-office application and ERMS. However, public institutions do not have contracts and for those who have contracts they do not specify service level agreements. For instance, my review of third part service delivery at TCU, GBT, TANAPA and ORCI noted that these entities did not have contract with e-GA for provision of email services, website hosting and data centre service.

I am concerned that having business relationship without a formal contract and service level agreement between the government entities would impair the quality of services being rendered and that in the event e-GA does not satisfy the expectations of its clients, it may not be held responsible.

I recommend e-Government Agency (e-GA) to ensure that there are contracts and service level agreements with all government entities which receive services from the Agency.

CHAPTER FOUR

4.0 ICT GOVERNANCE AND PROJECT MANAGEMENT

4.1 INADEQUATE ICT GOVERNANCE

ICT Governance is a management-backed initiative to implement a structured framework that allows management to implement, manage and monitor ICT operations to ensure strategic alignment, performance measurement, risk, value delivery and resource management.

ICT has become a business enabler ensuring government entities are achieving their strategic objectives. In my audits, I assessed the adequacy of ICT governance and noted weaknesses on ICT strategies, organization structure, steering committees, management of ICT operations and risk management. These are as follows

4.1.1 ABSENCE OF EFFECTIVE ICT STRATEGIC PLANS

Inadequate monitoring and evaluation of ICT strategic plan

Having an ICT strategy is not enough if it is not monitored and evaluated periodically to ensure it is on track to deliver intended value to the organization. At TANAPA and TMDA, I noted weaknesses in monitoring and evaluation of ICT strategic plans.

While Paragraph 5.0 of TMDA's ICT strategic plan requires two monitoring reviews annually to be conducted to monitor if the planned outputs are achieved, and to check for any changes in terms of output over the given period, my assessment noted that annual monitoring reviews were not conducted as required. TMDA performs only a review of budget activities in the implementation plan. Achievements of ICT strategy as per targets and key performance indicators are not evaluated and reported.

I am concerned that lack of monitoring and evaluation of achievements of the ICT strategic plan would result to failure of ICT initiatives to deliver intended value to organization.

I recommend management of Tanzania Medical and Drugs Authority to conduct and report periodic monitoring and evaluation as stated in the ICT strategic plan.

TANAPA's ICT guidelines section 2.1.1 (b) requires the ICT department to develop ICT strategic plan and ensure its implementation. However, my review of formulation and implementation of ICT strategic plan at TANAPA noted that the previous ICT strategic plan started in 2009 to 2013.However, the 2014-2018 ICT strategy was not prepared because activities of 2009-2013 plan were not completed within the period, thus their implementation continued in 2014-2018 period.

In addition, I noted that the evaluation of 2009-2013 ICT strategic plan was not done in order to come up with lessons learnt that would have helped to address the cause for delayed completion of 2009-2013 strategic plan. While management contended that the strategic plan for the 2014-2018 was not prepared because the activities in 2009-2013 ICT strategic plan were not completed, I am of the view that forwarding of 2009-2013 activities does not eliminate the need for having a documented 2014-2018 ICT strategic plan.

I also noted that ICT department does not have annual action plan for uncompleted activities from 2009-2013 strategic plan. Annual action plan ensures that objectives defined in the ICT strategy are attained by specifying activities, deliverables, responsible person and timeline for easy monitoring, performance measurement and accountability.

I recommend management of TANAPA to:
(a) Evaluate 2009-2013 ICT strategy to confirm whether all associated activities were effectively implemented.
(b) Ensure ICT annual action/tactical plan is prepared, aligned with the ICT strategy and monitored by the ICT steering committee.

(c) Ensure implementation status of ICT annual action/tactical plan is reported periodically to the ICT steering committee.

Weaknesses of ICT strategic plan and annual work plan

My review of the ICT governance and operations revealed that Tanzania Bureau of Standards (TBS) had a draft ICT strategy that was supposed to be operational from financial year 2018/2019 to 2020/2021. I am concerned that one year of its implementation period had passed and the strategy had not been approved. This situation would affect timely implementation of activities in the strategy. I also noted that the ICT strategy is not aligned with the Bureau's Corporate Plan as stipulated in the TBS ICT policy. In addition, I noted that the activities of 2018/2019 annual ICT work plan do not correspond with the initiatives stated in the ICT strategic plan.

I am of the view that these irregularities were caused by absence of oversight ICT steering committee that could ensure sound and effective ICT strategy and operation plan are in place and implemented. Moreover, delay in approving the ICT strategy resulted to implementation of activities in the 2018/2019 annual work plan that are not aligned with the strategy.

I recommend Tanzania Bureau of Standards management to

(a) Fast track the approval of the ICT strategy in order to start implementation within the period of the strategy.

(b) Ensure the draft ICT strategy is reviewed and aligned with Bureau's corporate objectives.

(c) Update the implementation schedule of the strategy to reflect current and realistic durations.

(d) Ensure annual ICT work plans are aligned with the ICT strategy.

Similarly, at TTCL, I noted the absence of ICT action or operational plan that outlines activities derived from ICT strategic plan to ensure effective monitoring and accountability in implementing the

plan. I further noted that the ICT strategic plan does not specify monitoring and evaluation mechanism, how frequent monitoring and evaluation should be done and who is responsible.

I am of the view that these irregularities might lead to failure of ICT strategy to attain its expected objectives, thereby impede the ability of the organization to realize value for money from its ICT investments.

I recommend management of Tanzania Telecommunications Corporation to:
(a) Develop annual action or operational plan that is derived from the ICT strategy, ensure the plan is monitored periodically and status of implementation of the plans is reported to the management at least once quarterly.
(b) Establish monitoring and evaluation mechanism of the ICT strategy and report the result at least once annually.

Lack of ICT Policy and Strategic Plan
Paragraph 2.3.1 of the e-Government guidelines of 2017 requires all Public Institutions to prepare and operationalize an Institutional ICT Strategy to set out a clear focus on using ICT for better service delivery and achieving value for ICT investment. Paragraph1.3.1 of the same guidelines requires public Institutions to develop and implement institutional ICT Policy to provide directives for appropriate planning, acquisition, adoption, implementation, management and use of ICT.

I noted that Tanzania Fertilizers Regulatory Authority (TFRA) has started automating some parts of its business processes, and that its dependence on ICT will increase. However, the authority had no approved ICT Policy and ICT strategic plan to set out the direction and controls to ensure ICT investments yield the intended benefits.

I am of the view that absence of approved IT Policy and the related Strategic Plan deprives the management of a focused framework

towards harmonious, efficient and effective implementation of ICT solutions.

I recommend the management of Tanzania Fertilizers Regulatory Authority to ensure that, an approved information communication technology policy and strategy tailored for the authority's activities is established.

I also reviewed ICT governance at National Museum of Tanzania (NMT) especially on availability of the required documents and operating procedures that put in place controls to ensure effective and adequate ICT governance. It was noted that NMT did not have ICT strategy, consequently, ICT initiatives come in piecemeal, lacking the holistic picture of ICT strategic objectives. In addition, the ICT policy had not been developed to provide directives for appropriate planning, acquisition, adoption and implementation, management and use of ICT. Further, I noted that NMT had no ICT unit,

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I am of the view that due to lack of comprehensive ICT strategy and policy, the organization might fail to reap the value from its ICT investments.

I recommend management of National Museum of Tanzania to develop ICT strategy and policy which are aligned with organization's strategic objectives in order to achieve value for money from ICT services.

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4.1.2 WEAKNESSES OF ICT ORGANIZATION AND REPORTING STRUCTURE

Effective organization and reporting structure of ICT is crucial governance aspect to ensure ICT initiatives deliver intended objectives in achieving organization's strategy. ICT is an enabler in achieving strategic objectives; thus, organizations should have an effective ICT department that report to the Managing Director of the organization. My reviews of ICT governance noted absence of

ICT department and ineffective reporting structure for some entities as described below:

Lack of ICT unit/department

Section 5.3.2 of the e-Government guidelines requires public institutions to establish an ICT Department/Directorate/Unit that reports directly to the Accounting Officer.

My review of organization structure for National Museum of Tanzania (NMT) noted absence of ICT unit/department. Nonetheless, I learnt that the Museum has two ICT staff who report to the Human Resources Manager. A well constituted and properly managed ICT can play a vital role in ensuring strategic objectives of the Museum are achieved. I am therefore concerned that, lack of ICT Department denies the Museum of the contribution ICT could offer to enable the organization achieve its objectives.

I am of the view that lack of ICT unit/department with proper reporting structure could lead the organization to embark on ICT initiatives and operations that are not properly prioritized and managed as required, hence resulting to failure of ICT to deliver the expected value to the Museum.

I recommend the management of National Museum of Tanzania to establish ICT unit/department with its head reporting direct to the Accounting Officer.

Shortfalls in reporting structure of ICT Department/Unit

During my audit of Sugar Board of Tanzania (SBT), I reviewed ICT reporting structure and identified that ICT Manager reports to the Director of Finance. This implies that ICT strategic needs and developments must be channeled through Director of Finance who then reports to the Director General and the Board of Directors for implementation. This is contrary to Paragraph 8.8 of the guidelines issued in July 2012 by the President Office, Public Service Management and Good Governance; and Section 5.3.2 of the e-

Government guidelines which emphasize the need for the head of ICT department/unit to report directly to the Chief Executive Office of the entity.

ICT has become a vital and integral part of every business plan and can play a crucial role in ensuring strategic objectives of the Board are achieved. I am concerned that, the identified inadequacies in the reporting structure would undermine its role in the achievement of the Board's strategic objectives.

I recommend the management of Sugar Board of Tanzania to restructure its Organization Structure such that ICT Department/Unit reports directly to the Director General to expedite the implementation of ICT strategies.

4.1.3 ANOMALIES OF ICT STEERING COMMITTEE

ICT steering committee assists the management in the delivery of the IT strategy, overseeing day-to-day management of IT service delivery and IT projects and focuses on implementation. A high-level steering committee for information communication technology is an important factor in ensuring that the IT department is in harmony with the corporate mission and objectives.

I audited Sokoine University of Agriculture (SUA), Arusha International Conference Centre (AICC), Tanzania Bureau of Standards (TBS), Tanzania National Parks Authority (TANAPA), and EWURA where I noted the following gaps relating to ICT steering committees:

Lack of ICT Steering Committee

My review of ICT governance structure noted that, Sokoine University did not establish the ICT Steering Committee or an equivalent committee to oversee the alignment of ICT operations/investments with organization strategy and ensure return on investment.

I also reviewed ICT governance at the Arusha International Conference Centre and identified that, the Centre had no ICT steering committee and its ICT Policy does not provide for establishment of the Steering Committee and its purpose.

I am of the view that lack of the Steering Committee denies the organizations effective oversight of ICT investments and alignment of the ICT functions with the institutions' strategic plan and value delivery.

I recommend management of Sokoine University of Agriculture and Arusha International Conference Centre to improve their respective ICT policies and establish the ICT steering committees with clearly defined roles and responsibilities.

Non-operation of ICT steering committee

Section 5.1.1 of the Tanzania Bureau of Standards (TBS) ICT policy states that TBS shall ensure ICT Steering Committee is in place to oversee the IT Governance activities including the main role of providing leadership and aligning all ICT investments, decisions and initiatives with overall TBS's business objectives. It further requires the ICT steering committee to be vested with ownership of the ICT Policy and ICT Strategy.

Review of the minutes for the first meeting of the ICT steering committee noted a decision to convene meetings quarterly. The meeting also directed the Head of ICT department to submit Annual ICT Work Plan to the committee for monitoring and evaluation purposes, and to present the ICT Strategy at the 2nd meeting of the ICT Steering Committee. Contrary to the above decision, meetings were not held. I was informed that the committee meetings were not held due to change of management. However, I learnt that members of the committee are selected by virtue of their positions, therefore the newly appointed management team could fill the vacancies in the committee

I am concerned that the requirement of ICT department to submit Annual ICT Work Plan to the committee, and the presentation of ICT Strategy to the Steering Committee were not done. In addition, TBS implemented two major ICT projects which involved the designing and developing of critical application systems which required oversight and monitoring by the ICT steering committee. Thus, failure of the committee to meet quarterly could result into ineffective management of ICT projects resources.

I recommend management of Tanzania Bureau of Standards to
(a) Review the current composition of the ICT steering committee and appoint new members.
(b) Ensure the ICT steering committee convenes meetings quarterly as required.
(c) Ensure all projects initiated in the year 2018/2019 are submitted to the committee for review and comments.
(d) Ensure the ICT strategy is submitted to the ICT steering committee for review and comments to ensure alignment with business objectives before it is presented to the Board for approval.

During my audit of TANAPA, I identified that the ICT steering committee has not met since its formulation in August, 2018. I noted that, during the period of August 2018 to June 2019, TANAPA implemented various ICT projects and developed its 2019-2023 ICT strategy. As a result, the projects that were implemented and ICT strategy that was developed during that period lacked oversight and approval of the ICT steering committee as required by the guidelines and terms of references.

I am concerned that without review and endorsement of the ICT steering committee, alignment of ICT projects with strategic objectives and therefore delivery of expected value could not be assured.

I recommend Tanzania National Parks Authority management to ensure the ICT steering committee meeting is conducted as per guidelines, and raise awareness to the members of the ICT committee on the roles and responsibilities of the committee in achieving strategic objectives.

Similarly review of operations of ICT Technical Committee at EWURA noted that the terms of references of the committee as defined in the EWURA ICT Regulations of 2018 are incomplete. The terms of references do not specify the frequency or schedule of meeting of the committee, Quorum and Voting. I also inquired the evidence that the committees held meetings for the year under review, but the management failed to avail me with the minutes of the meetings. I am concerned that there have been ICT investments, decisions and initiatives implemented during the year under review that required oversight and ownership of the committee to ensure their successful implementation.

I am of the view that the noted weaknesses in operations of ICT Technical Committee could lead to ineffective oversight of ICT initiatives and investments, resulting to failure of the authority to realize value for money from its ICT investments.

I recommend management of Energy and Water Utilities Regulatory Authority to review terms of references of the ICT Technical Committee to ensure they specify schedule/frequency of meetings and quorum. I also urge the management to ensure that ICT Technical Committee meetings are held as scheduled and minutes are prepared and maintained.

4.1.4 ICT RISKS MANAGEMENT WEAKNESSES

Lack of ICT Risk Register

COBIT 5 PO9 (Assess and Manage IT Risks) requires having documentation or a system that can be used to capture and enable a systematic approach to risk management. General IT risks shall be identified, assessed and mitigated in technical and security risks as

IT risks (i.e. Viruses, malicious code, system, and risks to systems backups, data loss, and ICT asset).

My audit of Export Processing Zones Authority (EPZA) observed absence of Risk Register Log to record risk for critical information resources after major changes in software, procedures, environment, organization or hardware.

This was also noted at National Board of Accountants and Auditors (NBAA), contrary to Section 2.3 of the Board's Risk Management Framework of June 2019 which stipulates that the Board should identify all significant risks, develop and maintain a risk register as per procedures and using the templates shown in the Framework.

I am of the opinion that lack of Risk Register (Risk Log Book) implies presence of weaknesses in the process of identifying, documenting and monitoring of IT risks. Hence, EPZA and NBAA might not be able to devise appropriate and adequate risk mitigation procedures to their ICT assets.

I recommend the management of Export Processing Zones and National Board of Accountants and Auditors to devise an appropriate risk management procedure.

Non-monitoring of ICT risks

Para 2.1.2.1 of the Business Registrations and Licensing Agency (BRELA) ICT security policy states, BRELA shall integrate ICT security risk management that include risk assessment, risk treatment, risk acceptance, risk communication and risk monitoring and evaluation into the Enterprise Risk Management Framework. Moreover, Para 3.3.2.6 of the BRELA ICT policy states that BRELA shall ensure that risks associated with ICT are managed appropriately.

My review of ICT risk assessment noted that BRELA assessed the risks and identified mitigation controls However, there was no mechanism to monitor the implementation of identified mitigation

controls. There was no report on status of the implemented controls. On inquiry, I was informed that, the implementation of the identified mitigation controls awaits the development of Risk Assessment Management Framework. I am concerned that delaying the implementation of risk mitigation controls at the expense of awaiting Agency-wide risk assessment management framework exposes the Agency to eminent threats such as cyber-attacks.

I am of the view that failure to monitor and implement risk mitigation controls would lead to business disruption in case someone takes advantage of the identified vulnerabilities.

I recommend the management of Business Registration and Licensing Agency to start the implementation of mitigation controls for identified ICT risks and report implementation status regularly. I also argue the management to fast track the development of organization risk management framework.

4.1.5 DECENTRALIZED MANAGEMENT OF ICT OPERATIONS

In my review of adequacy of ICT governance, I noted cases where ICT operations are not managed centrally by the ICT department/unit/division as required by paragraph 2.2.2 (iii) of e-Government guidelines for development, acquisition, operation and maintenance of e-Government applications and ICT policies of entities I reviewed.

Para 6.4 (2) of the Institute of Adult Education (IAE) Policy for use of ICT requires maintenance and support of all ICT facilities to be carried out by the IAE's ICT responsible unit. For maintenance and support, all networked servers are to be situated at the IAE's main data centre. Contrary to that, my review of ICT operations at the Institute, especially on disaster recovery, software change management and support of critical application systems revealed that management of ICT operations are decentralized. An example was noted on management of accounting system which is owned by accounts department. I noted that the custodianship of system is

under the Department of Accounts which has its own location where it hosts the central database of the system, its own mechanism to engage vendors of the system and its own data backup arrangements. In accordance with para 6.4(2), the ICT operations require to be centrally managed by the ICT department which is a custodian of ICT systems and responsible function for all ICT operations. This would provide a standardized approach and a central point of ensuring effective internal ICT controls across the organization.

I made similar review of ICT operations at the Sokoine University of Agriculture (SUA) and noted decentralized management of ICT operations. I noted weaknesses on management of Vote Book Financial Management System which is under supervision of finance department. The finance department has its own ICT officer to support the system, separate arrangement to engage vendors, separate backup arrangements and change management procedures.

Lack of central management of ICT operations by the Center of ICT as a custodian of systems and responsible function for all ICT operations might lead to absence of a standardized approach in ensuring effective internal ICT controls across the organization. Moreover, managing operations of ICT systems requires subject experts and therefore leaving matters such as data backup to end users is risky as they might be lacking IT related essential skills.

I recommend management of Institute of Adult Education and Sokoine University of Agriculture to ensure the role of managing data backups, managing vendor of system for support and hosting environment for all systems is centrally managed by ICT department instead of departments having their own arrangements.

I also reviewed ICT service management in respect to operating practices for ICT activities and business activities. I noted lack of distinction between ICT core activities and ICT enabling support

activities of the Tanzania Communication Regulatory Authority (TCRA). The core function of TCRA is ICT related activities, as a result some of the directorates were unable to distinguish ICT activities of a core function nature and activities of corporate ICT as an enabling or supporting function nature.

Due to that confusion, I noted fragmented ICT supporting activities. For example, the directorate owning TTMS-Telecommunications Traffic Monitoring system, which are business Directorates, had their own separate management of ICT support services in terms of application systems administration and support; contrary to the requirements of e-Government guidelines.

Furthermore, I found that business Continuity and Disaster recovery were formulated and managed as per respective directorate. For example, TTMS had its own DRP and BCP separate from the Corporate ICT. Also, management of primary data center was directorate-wise, such that the Corporate ICT and TTMS user department had their own arrangements for managing application servers and infrastructure.

I am of the view that such anarchy of management of ICT operations could lead to difficulties in coordination and harmonization of IT policies, guidelines and strategies implemented by corporate ICT.
I recommend management of Tanzania Communication Regulatory Authority to ensure ICT service management, administration of systems, management of disaster recovery and primary sites are centralized and managed by corporate ICT.

4.2 INADEQUATE ICT PROJECT MANAGEMENT

My audit of six ICT projects noted non-compliance with ICT projects' management best practices and guidelines issued by e-Government Agency guidebook for managing ICT projects and risks. The following weaknesses were noted during the review of management of these projects:

4.2.1 Duplication of efforts in implementation sugarcane farmers' registration information systems

Section 2.3.2 of the e-Government Agency business architecture standards and technical guidelines states that public Institutions will identify their ICT projects and portfolio driven uniquely by their business services and requirements. The business services will be defined by making use of the Business Reference Model and should be highlighting opportunities for collaboration and reuse of shared services Government wide. Moreover, section 2.3.3 of the guidelines requires public Institutions to provide details of their ICT projects and investments in the Government ICT portfolio system to ensure coordination of e-Government Initiatives.

My review of ICT projects and existing application systems revealed that Sugar Board of Tanzania (SBT) had two application systems, one for issuing of sugar import license and the other for registration of sugarcane farmers. These application systems were upgraded in 2018 to enhance their effectiveness and user friendliness. However, it was noted that the Ministry of Agriculture had projects to develop application systems that do the same functions of issuing license and registering farmers.

SBT will be required to start utilizing the systems developed by the Ministry of Agriculture and abandon its upgraded systems; notwithstanding the fact that it had already incurred cost to upgrade the systems. This could have been avoided if there had been proper coordination between SBT and sector ministry (Ministry of Agriculture) in the implementation of strategic information systems in the sector.

I am of the view that this was caused by failure of the SBT to communicate its project to upgrade the application systems for issuing of license and registering sugar cane farmers with the Government ICT portfolio portal.

I also therefore concerned that such duplication of efforts within the Government increases the cost of development and maintenance of applications systems

I recommend management of the Sugar Board of Tanzania to:
(a) Strengthen coordination of ICT initiatives with the Ministry of Agriculture by periodically communicating its ICT strategic plans.
(b) Register its ICT projects to Government ICT portfolio portal at e-GA to ensure coordination of e-Government Initiatives.

4.2.2 Weaknesses in managing project to upgrade sugarcane out-growers registration system

Section 2.1.1 of the e-Government guidelines for development, acquisition, operations and maintenance of applications states that, public institutions wishing to acquire or develop applications should ensure that after approval of the concept of development and acquisition of an application/software, proper requirements should be prepared and presented in a software/system requirements specifications (SRS) document. The document should be verified and signed off by the user department (s). It also requires knowledge transfer and training plans to be part of the application development/acquisition requirement. Section 2.1.2 subsection (xv) of the same guidelines states that application test should be performed, documented and signed by the user department and subsection (xvi) requires application user manual to be prepared as part of the application development documentation.

The Sugar Board of Tanzania (SBT) entered into a service contract with Geo-Network Limited on 26th March 2018 for upgrade of the designs of sugarcane out-growers registration system at contract sum of TZS 60,000,000. The project was finalized and contractor submitted final project report on 18th July 2018. I reviewed management of the project and noted the following weaknesses:

(i) Requirements specification and system design documents were not prepared by consultant as required by the terms of references (TOR);

(ii) Although project report stated that the consultant conducted the training to users and administrators as required under the TORs, there was no evidence to substantiate that the training was actually conducted;

(iii) One of the objectives and deliverables of the project as per TOR was to focus on bridging the existing gaps in the prevailing registration system and provide a tool for management of all matters related to out-growers. However, this component was not implemented by the consultant and there were no gaps identified and documented;

(iv) The final project report stated that user acceptance test was done. However, there was no evidence to confirm that the system testing was actually done;

(v) Non-utilization of free three months standby support, post-installation support and testing to rectify noted issues and errors, as a result the Board will incur additional cost to rectify identified issues; and

(vi) System technical and user manual were not prepared by the consultant as required by the TOR.

Consequently, the project could not deliver the expected benefits since the system has not been used by user department. SBT failed to realize value for money from the project since the upgraded system and mobile application are not being used effectively.

I recommend management of the Sugar Board of Tanzania to:

(a) Assess issues and challenges of the system and mobile app and rectify them.

(b) Ensure effective training is conducted to users and system administrators.

(c) Ensure the system is well tested as per requirements and document test results and test report.

(d) Ensure consultant finalizes all required documentations i.e user manual, requirements specification, system design and technical manual as per TOR.

4.2.3 Weaknesses of the project for development of regulatory, core business and business support systems of Gaming Board of Tanzania (GBT)

Section 2.1.1 of the e-Government guidelines for development, acquisition, operations and maintenance of applications requires any Public Institution that wishes to acquire or develop applications to ensure that after approval of the concept of development and acquisition of an application/software, proper requirements should be prepared. It further states that requirement should be presented in a software/system requirement specifications (SRS) document and the document should be verified and signed off by the user department (s).

However, from my review of initial project plan, system requirements specification document, and status report of the project for development of regulatory, core business and business support systems at GBT, I noted the following exceptions:

(i) User Acceptance Test was done using functional requirements that were not updated, instead of using system requirement specification document that was current as per user expectations and sign-off. Therefore, license module was rolled out using outdated requirements;

(ii) The license module was rolled out without completing data migration process. The details of licenses that existed required to be migrated to enable renewal and effective tracking of collections. I am concerned that rolling out of license module before completion of data migration could lead to ineffective tracking of licenses and missing license details in the rolled-out module;

(iii) Some of the test cases were not tested;

(v) There were failed test cases during user acceptance test but there was no evidence that failed tests were rectified and retested;

(vi) Development of 13 functions/process were completed and released to users. However, our comparison with User

Acceptance Test report revealed that 6 out 13 functions/processes were not tested.

I consider that inadequate management of the ongoing development of ICT project might lead to a delay in completing the project and failure of project to meet stakeholders' expectations due to inadequate testing.

I recommend management of the Gaming Board of Tanzania to:
(a) Assess and verify project documentations to ensure that all documentations that are being used or require to be used for implementing the project are proper, updated and have been approved by the ICT steering committee
(b) Conduct project review based on e-Government project review checklist at each stage of the project (module implementation) and report the review to steering committee.
(c) Redo user acceptance test for license application system using updated system requirements specifications document and ensure test cases are linked with respective requirements.
(d) Ensure data migration is completed, tested and signed off by user department.

4.2.4 Irregularity in implementation of iSQMT project at TBS

In August 2018 Tanzania Bureau of Standards (TBS) received support of USD 289,580.00 from Trade Mark East Africa (TMEA) to engage a consultant to automate a web based integrated standardization, Quality Assurance, Metrology and Testing System (iSQMT). The proposed iSQMT system shall replace the existing semi-automated quality information Management system (QUALIMIS) and other available systems without affecting existing data. Currently the challenges and gaps that have been identified include workflow challenges and unavailability of a public customer portal. Thus TMEA is funding the project to address identified shortcomings.

My review of the iSQMT project noted that one of the modules that was planned to be implemented was an online application portal for

certificate of premises, product registration, destination inspection, and pre-shipment verification of conformity. Due to the urgency and immediate need for online application portal for public, the management of TBS requested TMEA to implement this module first so that it can be used immediately. TMEA disagreed with implementing the project on module basis to avoid the risk of partial implementation in case the consultant (Software developer) fails to deliver the rest of modules. As a result of TMEA disagreement, the management of TBS decided to use own resources amounting to TZS 24,957,000.00 to engage a different consultant to implement the module as a separate system, for which the implementation started in December 2018, two months after the iSQMT project started. The consultant completed the project to develop the online application portal and it was rolled out in October 2019.

On inquiry about arrangements for integrating the two systems and ensure smooth rollout of the iSQMT system without disturbing existing online application system, I was informed that the two systems will be integrated and TBS will hold a meeting with the two consultants to agree on the modality of integration and ensure smooth integration. However, we are concerned that without a comprehensive plan to establish an effective mechanism to integrate the systems, it will disturb operations of the online application system and lead to data loss.

I am of the view that integration of two systems needs to be well planned and managed to ensure smooth transition and rollout of the iSQMT system without disrupting the existing online application system.

I recommend management of Tanzania Bureau of Standards to:

(a) Develop a comprehensive plan to ensure rollout of iSQMT will not disturb current operations of receiving applications online since the two systems will need to be integrated,

(b) Update the iSQMT project plan to clearly specify how integration or merging with online application system will be done and managed,

(c) Ensure the ICT steering committee is making close follow up of the iSQMT project and report irregularities.

4.2.5 Delay implementation of online case information system

I reviewed strategic plan of Fair Competition Tribunal (FCT) and noted existence of plan to purchase recording equipment during case session and online cases application system (infrastructure and supply of case tracking status system software) to enhance efficiency in execution of case hearing. However, the acquisition was not done despite several study tour trips that were made by the Tribunal. In total, the cost of study tour trips to Canada and South Africa aggregated to TZS 42,374,500 and USD 140,215.

I am of the view that this was caused by lack of prioritization and clear roadmap on implementation of this strategic application system to the tribunal. I am concerned that delaying the project hinders achievement of strategic objectives of the tribunal.

I recommend management of Fair Competition Tribunal to start implementation of the online case application system and respective infrastructure for efficient and effective provision of services.

4.2.6 Inadequate Oversight of Project to Upgrade Epicor 9 to 10

MSD ICT Policy Manual paragraph 2.1.6.2 states that MSD through ICT Steering Committee will monitor the key ICT project undertaken and provide regular progress reports on risks identified and preventative /corrective actions taken.

Epicor is an ERP system supporting key Business Process of MSD. During the audit I reviewed key project documents including project charter, functional requirements, project risk register and minutes of project steering committee.

Review of project documents to ascertain effectiveness of governance noted that the project has an established steering committee and the committee met three times on 27th February 2019, 24th September 2019 and 17th October 2019. There was a span of about six months between the first and second meeting that raises a concern on effectiveness of oversight by the committee. Additionally, in the second meeting it was agreed that there will be three more meetings that will be held immediately after proof of concept stage, user acceptance stage and deployment stage.

This practice of setting the steering committee meetings by milestone increases project risks. For example, in the risk register there was an identified high risk of changing of scope after project start, and mitigation of that risks that was stated is that approve all changes through steering committee. The risks arise as the project activities get executed, therefore the practice of steering committee to sit by milestone, diminishes its ability to reduce the risks of changing scope.

I am of the view that the oversight function of the project steering committee becomes weak due to the way it is executed.

I recommend MSD management to schedule project steering committee meetings within relatively short duration in order for it to respond to raised risks adequately and improve project oversight.

CHAPTER FIVE

5.0 APPLICATION SYSTEMS CONTROLS AND IT GENERAL CONTROLS

5.1 WEAKNESSES OF APPLICATION SYSTEM CONTROLS

During the financial year 2018/2019, I assessed effectiveness of controls in application systems that manage business operations in selected government entities. The assessment covered accounting application systems, revenue collection systems and other application systems that support core operations of entities. In my assessment, I noted weaknesses associated with controls in accounting and revenue systems, transactions and actions that are done manually outside application systems, lack of system integration that lead to inconsistences of information and existence of modules or functionalities of application systems that are not utilized to improve operations effectiveness.

5.1.1 CONTROL WEAKNESSES OF ACCOUNTING SYSTEMS

Application control weaknesses of IFMS Epicor

My Audit of IFMS Epicor accounting system at Land Transport Regulatory Authority (LATRA), Tanzania Medical and Drugs Authority (TMDA), Tanzania Shipping Agencies Corporation (TASAC) and Tanzania Communication Regulatory Authority (TCRA) noted control weaknesses associated with budget management, capturing of receipts, cancelation of payments and preparation of financial statement reports.

My review of commitment and expenditure report by activity as of 30th June 2019 at TCRA and LATRA noted that budget control is not working properly in the system. As a result account codes which have not been budgeted can be used for payment and the system allows payments for more than budgeted amount to be done. This results to negative balances for some of account codes.

At TCRA, I noted that the entity records cash receipt entry by using customized account receivable form. The use of this form forces the system to perform two processes which are; creating a receivable

and auto generation of cash receipt to offset the receivable, and then record a cash receipt in cash management and create records in cashbook. However, I noted that after the receivable has been created, during the auto generation of the receipts, sometimes the system does not automatically complete the entire process, leading to unexplained receivables.

I also observed that LATRA, TMDA, TASAC and TCRA are preparing financial statements manually outside the IFMS Epicor instead of configuring the system to be able to generate the reports. I am of the view that this is prone to human errors and the value for money of the system is not being realized.

My further review of payment process at LATRA, TCRA and TMDA noted lack of approval for voiding/cancelation of payments in the IFMS Epicor system. I learnt that payment transactions can be canceled or deleted in the system without approval or authorization. I am of the view that cancelation of transaction that has already been posted is a critical action that requires authorization to confirm reasons for cancelation.

I recommend managements of

(a) Tanzania Communication Regulatory Authority and Land Transport Regulatory Authority to ensure budget commitment controls are working properly and financial statement reports are generated from the system.

(b) Tanzania Shipping Agency Authority and Tanzania Medical and Drugs Authority to ensure financial statements are generated from the system.

(c) Tanzania Communication Regulatory Authority to rectify identified anomaly to ensure proper treatment of receipts in the system.

(d) Tanzania Communication Regulatory Authority, Land Transport Regulatory Authority and Tanzania Medical and Drugs Authority to ensure approvals of payments cancelation in the system are properly authorized.

I also audited IFMS Epicor application at the Ministry of Foreign Affairs and Ministry of Lands, Housing and Urban Development and noted weakness in payment voucher creation process. It was noted that some of the expenditures were charged in wrong expenditure codes. Payments of TZS 4,602,318,317.03 at the Ministry of Foreign Affairs and TZS 436,974,343.00 at Ministry of Lands, Housing and Urban development were charged to wrong expenditure codes (GFS).

I am of the view that this is caused by lack of application control to prevent such anomalies whereby the system does not check whether the payment is related to the selected expenditure code. I am concerned that this can result to wrong classification of expenses and misstatement of account codes balances in the financial statement.

I recommend the Ministry of Finance and Planning to implement controls such that payment details are predefined and mapped to their respective expenditure code, users will be selecting the predefined payments and system automatically charges to its respective expenditure code.

Weaknesses of IFMS Epicor Accounting Systems in LGAs

Financial transactions of LGAs are processed through Integrated Financial Management System (IFMS), using Epicor system version 10.2 which is hosted and managed centrally by the PMO-RALG. The system has been interfaced with Local Government Revenue Collection Information System (LGRCIS).

Other systems in use in relation to financial transactions at LGAs are Facility Financial Accounting and Reporting System (FFARS) at lower levels and PLANREP for budgeting purposes. The use of IFMS facilitates effective and efficient management of LGAs' budget, revenue and expenditure.

Review of these applications software in 185 LGAs revealed the following weakness:

- Integration between IFMS Epicor, LGRCIS and PLANREP is not effective as it requires user to export data from the two systems to IFMS Epicor. This is less effective as it involves human intervention instead of systems to automatically transfer transactions to IFMS Epicor on real time after verification and approval.
- The IFMS Epicor accounting system operates as a cash-commitment control tool which only captures cash transactions and ignores the accrual transactions; this is contrary to IPSAs accrual. Therefore, to finalize the Councils final accounts, adjustments and consolidation of accounts are prepared manually.
- Not all modules are utilized in the IFMS Epicor; hence management of items that support financial statements like creditors, debtors and assets had to be prepared outside the system.

I reiterate my previous years' recommendation requiring PO-RALG to improve effectiveness of integration of IFMS Epicor with other financial related systems and ensure all accrual transactions are captured in IFMS Epicor. Furthermore PO-RALG is required to ensure all modules in IFMS Epicor are fully utilized in order to realize value for money on the invested systems, and to also enhance reliability of LGAs' financial information.

Application controls weaknesses of Enterprise Resource Management Suite (ERMS)

(i) **Inappropriate recording of System ledgers transaction**

The general ledger works as a central repository for accounting data transferred from all sub ledgers or modules like accounts payable, accounts receivable, cash management, assets and others. The general ledger is the backbone of any accounting system, which holds financial data for an organization. The collection of all accounts is known as the general ledger and each account is known as a ledger account.

My review of ERMS system at e-GA noted the following weaknesses:

The payment process cycles does not record some of sub ledgers account in the system. I noted that, when processing payments, ERMS only records transaction ledgers at final state of payments (processing payments) i.e debiting expenditure items and crediting bank accounts/cashbook. It does not capture Accounts payables ledgers (Payee ledgers) at initial stages of preparing payments transaction cycles. This makes it difficult to establish the source of payments information and record of payables ledgers. For example, for proper recording of the transaction, the entries would be as described in the illustration below:

1st. Recording and recognizing liability transaction

Expense (7xxxxx) 1,000,000 (system debit transaction)

Accounts Payable (311000) - 1,000,000 (system credit transaction)

If you look at the general ledger at this point before payment is made, the payables account should have had a balance of 1,000,0000 and an expense balance of 1,000,000

2nd Recording the payment transaction (Settling liability transaction)

Cash (112000) 1, 000, 0000 (system credit transaction)

Accounts Payable (311000) + 1,000,000 (system debit transaction)

After making payment, both parties of each entry balance, and in the end the payables balance is back to zero. That is as it should be once the balance is paid. The net result is the same as if the whole transaction was conducted in cash:

Expense (7xxxxx) 1,000,000 (system debit transaction)

Cash (112000) - 1,000,000 (system credit transaction)

However, during my review of the system I noted that, only the second stage of recording the payment transaction (settling liability

transaction) was being captured through system by crediting cash book and debiting payees account; the first step was not being captured. This is considered as direct payments which lacks proper records of payable ledger in the system books of account. As a result, no records of Accounts Payable exist in the system. In accordance with accounting principles, any payment made must have been initiated from the entity obligation to pay and all records for that obligation should be accompanied by accounting ledgers/sub ledgers, which in aggregate consolidates to general ledger, which is the source of information for preparation of financial statements.

Also, with regard to imprest management, the system does not have all ledgers to accommodate the imprest cycle which include issuing payment vouchers, final payments and retirement. It was not clearly shown which accounts/ ledgers were being affected at each stage of imprest management process.

I am of the view that lack of proper records of accounting transactions in the system could cause misstatement in the financial statements. Assets such as imprest balances and liabilities such as payables are not recorded by the system. This fact necessitates manual recording which is prone to the risk of errors.

I recommend management of e-Government Agency (e-GA) to:

(a) Investigate whether all Agency accounts/ledgers and their balances have been captured.

(b) Configure the system to support proper posting of all ledgers in the system.

(ii)Lack of clear developed system chart of accounts in ERMS (Full GL of Accounts)

The chart of accounts is a list of all accounts used by entity/agents and includes the identification of each class of account, the listing of the account namely the chart of accounts. The extraction of account balances is called a trial balance. The purpose of the trial balance is, at a preliminary stage of the financial statement

preparation process, to ensure the equality of the total debits and credits.

However, during my review of the system I noted that, the ERMS system has no system chart of accounts showing identification of each class of accounts. The chart of accounts will enable preparation of a list of all account balances showing either debit or credit balances (trial balance) from which the financial statement preparer will pick balances for reporting in the financial statements. In practice, the chart of accounts is the foundation for the Agency's financial record keeping system. During the ERMS system walk through, it was not clearly shown how the system accounts were created. I am of the view that this hinders effective financial reporting.

I recommend management of e-Government Agency (e-GA) to configure the system to support creation of system chart of accounts.

Control weaknesses of Sage AccPacc accounting system

In my review of application controls of Sage AccPacc accounting system at the Public Procurement Regulatory Authority (PPRA), I noted system errors/malfunction on opening balances. Some accounts final closing balances could not be properly rolled over to the subsequent financial year as the opening balances. As a result, the opening account balances did not match with the corresponding balances in the previous year's signed financial statements. I am of the view that such system glitch or malfunction might lead to misstatements in the financial statements.

I recommend management of Public Procurement Regulatory Authority (PPRA) to rectify noted weakness to ensure proper closing of accounts balance during year end.

Control weaknesses of Votebook Accounting System

My review of application controls of Votebook accounting system at Sokoine University of Agriculture (SUA) revealed ineffective budget controls, as a result account codes which have no budget could be

charged for payment. Similarly, account code could be charged more than its budget ceiling. This resulted to negative balances. My further review of the system revealed inadequate vendor data management. In this regard, creation, updating and deletion of vendors details in the system was not controlled to ensure that only authorized vendor details is maintained to prevent fictitious vendors. I also observed that cancelation of approved payments and receipts in the system do not require authorization. The accounts user who has the responsibility of posting payment and receipt transactions can also cancel or delete payment transaction. I am of the view that the cancelation of transaction which has already been posted is a critical action which requires second level authorization to confirm the reasons for cancelation in order to prevent unauthorized cancellations.

I recommend management of Sokoine University of Agriculture to ensure budget controls are activated in the accounting system, establish effective mechanism to register and review vendor details in the system and implement restriction in the system for cancelation of payments and receipts.

I also reviewed application controls of the Votebook accounting at Institute of Accountancy Arusha (IAA) and noted that budget commitment controls were relaxed such that payment were made without checking budget balances. My review of students billing process in the system noted that, for bills to be generated, students have to be registered in the system.

However, it was found that the system failed to register the students of April intake into the appropriate year of the Institute as they were registered and assigned the registration numbers basing on the default settings which recognized all students as a single intake, which is usually September. This resulted to wrong accrual of the revenue from students of other intakes. For example; the tuition fee was billed in full to students of certificates of March 2019 intake instead of only 60% of the total fee. This led to the

overstatement in the current year by TZS 69.6 million and an understatement in the subsequent year by the same amount.

In my review, I also noted that the system was not able to generate ageing of the receivables as at the specific given date. On the contrary, the ageing was generated as at the generation date only. As a result, the long outstanding receivables cannot be identified and managed timely. Similarly, the Institute was unable to prepare all the liquidity and credit risk notes in the financials due to absence of ageing information. Furthermore, management of vendor details in the system was not effective as there were suppliers with more than one account number and students with more than one registration number.

I therefore recommend management of Institute of Accountancy Arusha to:

(a) Ensure budget controls are working properly in the systems.
(b) Ensure the system appropriately assign students to their respective academic year at any point in time.
(c) Ensure ageing analysis report for particular period is developed in the system and perform cleanup of vendor details.
(d) Establish mechanism to ensure maintenance of proper details of vendors.

5.1.2 CONTROL WEAKNESSES OF REVENUE SYSTEMS

During the audit of financial year 2018/2019, I assessed controls effectiveness of various revenue collection and billing application systems. My assessment aimed at providing assurance on efficiency of collecting and reporting revenue. My assessment noted the following findings:

Inadequate application support for credit cards payment in Government Electronic Payment Gateway (GePG)

My audit of the immigration services department noted that the department launched e-immigration system in January 2018 and that all payments in the e-immigration services were done using VISA and MasterCard credit cards only. This means, other types of credit cards such as PayPal, Maestro, eBay, Cirrus, American Express, Delta as well as Western Union are not accepted by the system.

I am of the view that this can lead to loss of revenue with respect to holders of other credit cards who are limited by the payment methodology / system.

I recommend Immigration Services Department to ensure needs of all users are taken into account by equipping e-immigration system with other credit card options.

Inadequate system configuration with regard to e-Passport for payments passing through intermediary banks

My review of e-passport application system noted that the Immigration Services Department charges US$75 as Passport processing fee to Tanzanians residing in other countries who want to renew their passports. The audit found that e-Passport has been configured to process Passport once the exact amount of US$75 is paid to the system. However there are countries where payments pass through Intermediary bank that deduct US$10 to send payment to Immigration Services Department account in Tanzania. This reduction results to balance amount of US$65 and consequently the transaction fails and hence the Passport application remain unprocessed.

I am concerned this can negatively affect e-Passport service delivery for Tanzanians who are living abroad and eventually loss of revenue.

I recommend Immigration Services Department to address the noted challenge so as eliminate inconveniences currently facing Tanzanians who are residents outside the country, and in future to ensure addressing all user needs in system configuration.

Administrative overhead resulting from Government Electronic Payment Gateway online payment

Government e-Payment Gateway (GePG) system seeks to improve revenue collection management by harmonizing revenue collection processes and improve revenue management taking advantage of the technological advancement.

The GePG system provides the revenue collection institutions with enhanced multiple payment channels offered by the Payment Service Providers. These include banking products as well as payment channels from emerging technologies such as the mobile financial services, which has wider coverage and usage in the public. The system connects the billing systems of revenue collection institutions and enables the institutions to access all payment channels that are available in the system.

During the audit at Tanzania National Parks (TANAPA) I noted that payers (customers) were paying twice for the same control number. This happens for online payments whereby the control number remains unpaid since payment through this channel takes 24hours to be effected at the bank account of service provider (TANAPA). Due to this, GEPG allows customer to make another payment using the same control number resulting to double payment for the same control number.

I am concerned that this causes administrative overhead whereby TANAPA has to identify all double payments in the bank statement and process refund. Also some of the customers may not have means to get notification that they have been refunded due to double payment which increases burden to them.

I recommend Ministry of Finance and Planning to ensure that control number is flagged as paid when using credit card or online payment to prevent double payments.

Ineffectiveness of Local Government Revenue Collection Information System (LGRCIS)

The Local Government Revenue Collection Information System (LGRCIS) is designed to support enhanced Local Government revenue collection with proper identification of the taxpayers, invoicing, receipting, defaulter identification and facilitating electronic or online payment through a single payment gateway. Among the objectives of the system is to eliminate weaknesses that were prevalent in the manual revenue collection procedures, prevent leakage of revenue collected, encourage transparency, and support reports generation.

During the year under review, I made an appraisal on the effectiveness of the LGRCIS in implementing the intended objectives and noted several challenges as follows:

- Inappropriate granting of access rights in the system such as allowing main Cashiers to issue receipts through back office without adequate controls and timely review of the access rights by the management. Due to this loophole, my audit revealed one scenario in Songea Municipal Council where the main Cashier made forgery by generating receipt from the LGRCIS showing that cash collected of TZS 50,512,264 was banked while the bank statement showed no cash was deposited in the bank account.
- Some of the procured POS devices were not compatible with LGRCIS. As a result, they were not operating.
- Current set up of the interface between LGRCIS and EPICOR recognize revenue collections that had already been banked. This means that, only banked collections are exported to EPICOR cashbook, leaving unbanked cash collected out of EPICOR cashbook. This affects the accuracy of information in

the EPICOR cashbook and bank reconciliation report generated from EPICOR.

- Similarly, the number of POS is not sufficient to cover all areas of revenue collection hence, necessitating the use of local receipts.
- There were no bank reconciliations carried out between the system and bank account despite the system having a reconciliation module that permits reconciliations to be made through the system.
- The LGRCIS do not alert the customers to pay the required fees especially when time for payment is due/overdue.
- I also noted during the audit that, there is unnecessary delay in resolving issues relating to LGRCIS reported to PO-RALG help desk, a weakness that create loop-holes for unfaithful staff or collectors to misappropriate the collected revenue.

In the absence of effective revenue collection system, data generated by the systems might not be reliable and may lead to misstatement of the final Financial Statements. This may also create loophole(s) for misappropriation of revenue rather than solving the problem.

I recommend to management of

(a) LGAs to ensure appropriate granting of users' access rights and review of access rights is done periodically.

(b) LGAs to ensure procured POS are inspected and verified by PO-RALG for compatibility with the system.

(c) PO-RALG to improve integration of LGRCIS with IFMS Epicor so that unbanked cash collected are also exported to IFMS Epicor.

(d) LGAs to procure sufficient POS devices which will cover all areas of revenue collection.

(e) LGAs to perform regular bank reconciliation between transactions of the system and the bank account.

(f) PO-RALG to implement system notification to customers when the payment time is due/overdue.

(g) PO-RALG to ensure helpdesk reported issues are resolved timely.

Weakness noted on TPA billing system

During my review of revenue collection at Tanzania Ports Authority (TPA), I noted the following concerns about the billing system:

- Marine invoice report extracted from the system does not differentiate final invoices and credit notes (cancelled invoices) resulting to management passing journals that could lead to errors. For instance, I noted a journal entry no. 12513 dated 24 April 2019 amounting to USD 236,363 to reverse a cancelled invoice no. DARIMAR20181100149 dated 28 November 2018 amounting to USD 254,395 leading to an error of overstating revenue by USD 18,032.
- The system treats marine pre-invoices raised manually same as final invoices hence they appear in a report of final marine invoices extracted from the system. For instance, I noted a pre-invoice no. DARIMAR20180800065 with call ID no. 11827 and pre-invoice no. DARIOTH20190102936 with call ID 12517 which were included in the final invoice monthly reports for August 2018 and January 2019 respectively.

I am concerned that improper treatment of credit notes and pre-invoices could lead to misstatement of revenue.

I recommend management of Tanzania Ports Authority to enhance the billing system to allow clear distinctions between the invoices, credit notes and pre-invoices.

Irregularities noted on LATRA Vehicle Tracking System

The Land Transport Regulatory Authority (LATRA) procured a Vehicle Tracking Systems in 2016 with the aim of reducing road accidents and improve public safety. My visit to the Vehicle Tracking Systems control center and a walkthrough of the system noted the following weaknesses:

- **Manual calculation of penalty and non-maintenance of records**

The Vehicle Tracking Systems is designed to automatically show alerts at the control centre for offenses such as exceeding the speed limit. A team at the control centre reviews alerts and determines whether it is a chargeable offense for which the operator needs to be penalized. The control centre team then sends a report to LATRA officers close to the location of the operator for them to administer the penalties. I noted that calculation of penalties for committed offenses is done manually outside the system by LATRA officers after receiving report from control. This is prone to human errors and manipulation since the responsibility is left to the LATRA officer to determine how much should be charged as well as the payment of the penalties. Moreover, there is no record or reconciliation/tracking of violation reports sent by the control centre, offenses actually charged and amounts of penalties paid.

- **Lack of mechanism to track the payment of Vehicle Tracking System penalty notifications**

I noted that, when regional officers are penalizing offending drivers, they issue manual notifications as well as GePG control numbers for payment of the penalty. These control numbers expire within 30 days of issue, and LATRA does not have a central electronic system of recording all notifications issued. As such, once expired, there is no effective way to follow up on these notifications. I noted notifications amounting to TZS 185,670,000 in some of the regional offices which expired before being paid.

I am of the view that these weaknesses impede the Authority from fully attaining its intended objective of deterring reckless driving. Also, without a system to compute penalties and monitor the GePG notifications issued, LATRA would not be able to ensure completeness of revenue from notifications issued.

I recommend management of Land Transport Regulatory Authority to automate the computation and charging of penalties for Vehicle Tracking System offenses. Likewise, operators should be notified automatically, in real time, and the penalty should be in a proper database for future follow-up.

Weaknesses on data input validations and processing of tax collections through iTAX system

I audited iTAX system at TRA to establish whether system validates inputs and processes data correctly. I found that reports generated from the system could not be relied upon due to the following weaknesses:

- Inadequate data input validation controls. As a result, I noted cases of some taxpayers with more than one Tax Identification Number (TIN) for different businesses, while in some cases a taxpayer pays tax using a different TIN number other than the assessed TIN.
- Lack of payment validation between iTAX and Revenue Gateway System (RGS) whereby RGS does not verify transactions from iTAX for payments made by taxpayer to determine the type of tax which is being paid. As a result, it becomes difficult in iTAX to determine which type of tax has been actually paid by the taxpayers.
- Adjustments are done outside the system instead of through the system so as to generate taxpayer's positions from the systems.

  The system is not well configured to handle posting of credit and debit entries to ensure that such entries are correctly reflected in taxpayers' accounts as per business rules. Therefore, the tax position status in the system was not correct due to some customers paying without corresponding assessment, quoting incorrect tax categories, and / or paying the tax assessed in installments.

I am of the view that inadequate data input validation might lead to posting of incorrect data in the system, consequently producing inaccurate reports. Moreover, adjustments that are done outside the system and improper handling of credit and debit entries for payments made by taxpayers might result to incorrect tax position status.

I recommend management of Tanzania Revenue Authority to:

(a) improve data input validation to ensure integrity of taxpayers' information in the system, review integration between RGS and iTAX configurations to ensure validations of category of paid tax is done before effecting payments, and

(b) Ensure credit and debit entries entered in the system are appropriate so that tax positions issued per customer are realistic and any discrepancy is properly justified in the system.

Weaknesses on implementation of electronic fiscal devices (EFD)
I also reviewed the Electronic Fiscal Device Management Systems (EFDMS) at Tanzania Revenue Authority (TRA) to determine the effectiveness of alignment between business goals and solutions provided by the respective system. I noted existence of outdated EFD Machines that do not support the current TRA needs of real time validations.

I noted four versions of EFD machines which are currently in use, protocol 1.0, protocol 2.0, protocol 2.1 and Virtual Fiscal Device solutions (VFD). Virtual Fiscal Device has no additional cost as it operates on mechanism of Software as a Service (SaaS) under communications protocol, which allows real time validation for the issued fiscal receipts.

I am of the view that TRA needs to opt for the options which are cost effective and allow real time validation rather than maintaining other protocols (protocol 1.0, protocol 2.0, and protocol 2.1) which cannot be upgraded to produce and send individual receipts in real time.

I also noted that verification of receipt for recent issued EFD Machines was not working as expected. During the audit, I tested EFD receipt No.0022/00007035 for machine with reference No 06TZ2010005054 issued on 10 November, 2019 to establish whether recently issued EFD machines are in line with protocol 2.1, the version which was upgraded to send Z-report and Electronic Journal from the remote command. The result of this test showed that, the receipt was regarded as invalid by TRA android application and the EFD Management System (EFDMS).

On inquiry, I was informed by management that for the receipt to be verified, the same must have been transmitted to EFDMS server during submission of Z-report by the device. Nevertheless, some of the EFD with protocol 2.0 are unable to transmit these receipt to EFDMS and hence cannot be verified, a challenge that will be resolved once all devices are upgraded to protocol 2.1. Although management informed that receipts generated from protocol 2.1 (which is the upgraded version of protocol 2.0) could be verified, for the test I conducted, the Z-report was sent to EFDMS from the same device that had been upgraded to protocol 2.1; yet the receipt failed verification.

I am concerned that non-implementation of effective EFD verification mechanism might lead to existence of forged EFD receipts thus create room for fictitious claims for VAT refunds as well as understatement of corporate and individual income taxes.

I recommend management of Tanzania Revenue Authority to analyze and opt for best EFD machines version and ensure effectiveness in transmission of receipts to EFDMS for real time verification.

Control weaknesses of the application system used to issue licenses to sugar importers

The Sugar Board of Tanzania (SBT) has application system for issuing license to sugar importers. The system is used to generate and print license after approvals have been done on physical file and payment of import fee has been effected by the applicant. Calculation of fee

is done outside the system based on quantities of sugar imported in metric tons then a bill is generated on GePG billing portal for the applicant to pay.

During the audit, I did a walkthrough of the system to review application controls which revealed the following weaknesses:

- Non-segregation of duties enabling one person to calculate import fee, generate bill and create license in the system. I am of the view that for checks and balances, these functions should be segregated to avoid one person from performing all three functions.
- Lack of control on issuing and usage of paper to print licenses. License papers have no control/serial numbers, their distribution is not controlled and therefore can misuse by staff through printing licenses without authorization.
- Licenses issued have duration and one of the conditions of the license is to import the approved quantity within the period covered. However, the system provides room for user to select expiration date of license. Since the duration of each license category is known, the expiry date can be determined automatically. I am concerned that users can intentionally or mistakenly extend duration of license expiration date and the system does not have control to detect.

I am of the view that non-segregation of duties can lead to issuing unauthorized license and making errors in calculating import fee. Lack of control/serial number for license printing paper provides room for misuse. Also lack of controls in expiration date input can lead to issuing of licenses with longer duration than required.

I recommend management of the Sugar Board of Tanzania to:

(a) Segregate the functions of calculating import fee, generating bill and creation of license.

(b) Establish procedures to manage issuance and utilization of license printing papers and ensure they have control/serial numbers independent of the system generated number.

c) Ensure system determines automatically the expiration date of license.

Weaknesses of application controls on SUASIS application at SUA

During the audit at SUA, I assessed control effectiveness of the SUASIS application by conducting a walkthrough of the system and noted the following control weaknesses:-

- System allows accountant to edit bill by entering the amount manually instead of using predefined fees which were already configured in the system. This provides room for mistakes and intentional modification of bill amount. It was also noted that paid bills can be deleted in the system without authorization.
- Lack of approval for setup of fees in SUASIS. Tuition and non-tuition fees are configured in the system by accountants in creating invoices for each program and services offered to students. However, the process of setting these fees does not involve verification and approval to prevent human errors that may occur and there was no compensating control.
- Lack of approval for manual posting of fees in SUASIS. I noted cases where initial fees of students sponsored by High Education Students Loan Board (HESLB), students who pay direct to bank account and those who pay through GePG were not received in SUASIS. However, such fees were later posted manually in SUASIS after confirming with the bank. One person was granted power to verify and post the fees. This situation provides room for unauthorized fees to be posted.
- SUASIS does not split multiple fees paid using one control number for example tuition fee, accommodation etc. I found students billed using one control number for different categories of revenue. As a result, the fee was posted as one transaction although they were supposed to be charged to

separate sources of revenue. This situation might lead to misclassification of the revenue.

- Lack of detective control to alert on the students who have registered less number of points than required per semester. Each semester students are required to register for courses of not less than 12 points depending on its content. This means that a student is required to select a number of courses which make up 12 points or more. Besides the requirement, I noted that the system did not alert or prevent students to register credits less than 12. In this case, a student can mistakenly register less than 12 credits and at the end of semester he/she will be considered as discontinued.

- Verification and approval of admitted applicants was being done outside the system by directors and then the documents are returned to admission office to be updated in the system. This kind of management of students' admission procedure is prone to human errors and intentional modification from dishonest staff. Consequently, the system can allow admission officer to manually admit applicant from a pool without prior approval.
- The system does not have room for comments when the head of division is giving feedback on the assessment of examination results to a teacher of which the intervention may be difficult.

- Lack of enforcement to ensure students assess their teachers at the end of the semester. Students' assessment is crucial in improving teacher's performance.

I recommend Sokoine University of Agriculture to:
(a) Restrict the system from allowing students to register less than 12 credits during semester registration.
(b) Ensure editing of bills have approval levels and users are not allowed to enter amount manually; instead there should be an option to select from predefined fees.

(c) Ensure deletion of bills has approval especially those which have already been paid.
(d) Ensure verification and approval of admitted students by head of divisions is done inside SUASIS.
(e) Abolish manual selection of applicants from the pool for admission.
(f) Ensure SUASIS classify various fees paid using one control number in their respective revenue category
(g) Develop functionality to allow capturing of comments for assessment of examination results for technical backstopping intervention.
(h) Conduct sensitization to students on how to assess their teachers.
(i) Consider to implement restrictions for configuration and changes of fees in SUASIS.

5.1.3 UNUTILIZED MODULES OF APPLICATION SYSTEMS

My assessment of application systems utilization to improve operational efficiency and realization of value for money for the acquired systems revealed that some of the government entities are not fully utilizing the systems as described in my findings below:

Unutilized modules of ARUTI application system

During my audit of ARUTI human resources management system at Tanzania Shipping Agencies Corporation (TASAC) and Tanzania Medical and Drugs Authority (TMDA) noted that the system has 11 modules, all of which according to contract, have been licensed for use. However, TASAC utilizes 4 while TMDA utilizes 7 out of 11 modules.

I am of the view that this is caused by lack of comprehensive analysis of needs and requirements for acquisition of application systems.

I am concerned that this might lead to operational inefficiency and failure to realize value for money out of the ICT investment.

I recommend management of Tanzania Shipping Agencies Corporation and Tanzania Medical and Drugs Authority to ensure ARUTI modules are effectively utilized to improve operational efficiency.

Non maintenance of assets records in the accounting system

My review of management of assets records at Tanzania Communication Regulatory Authority (TCRA) and Tanzania Medical and Drugs Authority (TMDA) noted that the existing IFMS Epicor accounting system has not been activated to maintain assets. The system has asset module which could be used without extra cost of license. The same was noted at Fair Competition Tribunal (FCT) whereby the Tribunal does not use the SAP accounting system Fixed Asset Module to capture and update the Fixed Assets Register as the process is done manually.

I am of the view that manual maintenance of asset records could lead to human errors, omission and be easily manipulated resulting to misstatement. Moreover, inefficiency in use of the available accounting system to record and update fixed assets in the system hinders the entities from realizing value for money from the system use.

I recommend management of Tanzania Communication Regulatory Authority (TCRA), Tanzania Medical and Drugs Authority (TMDA) and Fair Competition Tribunal (FCT) to fully utilize the accounting system including maintaining all assets in the computerized accounting system for proper records, safeguarding assets and financial reporting.

Unutilized inventory module of accounting systems

My review of inventory and stock management in accounting application systems of Land Transport Regulatory Authority (LATRA) and Sokoine University of Agriculture (SUA) noted that both entities

did not activate inventory modules of their accounting systems. Inventory is maintained manually outside the system.

I am concerned that this might lead to operational inefficiency in managing inventory resulting to misstatement of inventory figures in the financial statements.

I recommend management of Land Transport Regulatory Authority and Sokoine University of Agriculture to activate inventory modules in accounting system.

5.1.4 TRANSACTIONS DONE OUTSIDE APPLICATION SYSTEMS

During my audits of various application systems used by government entities in managing operations, I noted cases whereby some actions or transactions were done outside the systems leading to inconsistency of information and integrity of reports being generated from the systems. The following issues were noted:

Revenue collected outside eTec application system at TANTRADE

Review of eTec application system at Tanzania Trade Development Authority (TANTRADE) noted that the total number of visitors for the period under review as per the eTac system across all categories of tickets was 253,378. The total collections across the above categories as per the system reports were observed to be TZS 790,819,000. However, the total amount banked was TZS 818,870,900, which is above collection by TZS 28,051,900. On inquiry, I was informed by management that the difference was money from seasonal car stickers which was collected outside the eTac system.

I recommend management of Tanzania Trade Development Authority (TANTRADE) to configure the system to be all inclusive, rather than having some transactions outside the system.

Revenue collected outside the system due to unreliability of Network and Internet around National Parks

Tanzania National Parks Authority (TANAPA) introduced NAVISION accounting system, e-permit system and the use of GePG to

strengthen controls in revenue and fees collection. The system introduction was to comply with government directives on revenue collection and its 2017 Financial Regulations.

My audit of Mikumi National Park revealed that during the year under review there was manual issuance of entry forms and permits. For the period of January to June, I noted that 35 sampled permits with the value of TZS 2,116,534 and USD 7,021.50 were issued using special forms. I was informed that this was caused by computer network breakdown which affects communication between the Park and central servers.

I am concerned that manual issuance of entry forms and permits poses a risk of revenue loss since the forms are just printouts which lack controls that may be used for revenue reconciliation by the Park management. This may also attract fraudulent activities that might result into loss of revenue.

I recommend management of Tanzania National Parks Authority to take deliberate efforts in ensuring the availability and accessibility of computer network so as to enhance revenue collection by use of POS and E-permit system at all times.

Manual refunds done outside the system

In the course of audit at Higher Education Students' Loans Board (HESLB), I observed refund payments of TZS 2.47 billion paid to 2,978 individuals (both beneficiaries and non-beneficiaries) during the period under review. Reasons for refunds were over deduction from beneficiaries and receipts from non-beneficiaries.

These refunds were done manually outside the accounting system, as a result the refunded amounts were not reflected directly in the statement of the beneficiaries. A repayment department officer has to upload the refund manually to the individual statement.

I am concerned that traceability of the receipts from non-beneficiaries is also hard since there is no any record for non-

beneficiaries in the system. This may result in payment of refund to wrong person or misappropriation of funds on account of refund of loan recoveries to non-beneficiaries.

I recommend management of Higher Education Students' Loans Board to ensure the system is configured in such a way that it allows integration with loan repayment recovery system so that when refunds are made the individual statement will be updated.

5.1.5 APPLICATION SYSTEM INTEGRATION

Maintaining isolated application systems poses a risk of information inconsistence resulting to lack of assurance on integrity of reports generated from systems. In my audits of application systems controls, I observed existence of disintegrated application systems and established their impacts to operations and financial reporting as described hereunder:

Revenue application system and accounting system at TPC not integrated

Tanzania Posts Corporation (TPC) has a revenue collection system for managing cargo and parcels and an accounting system. During the audit of revenue cycle, I noted that these two systems were not integrated. This has led to manual posting of revenue transactions into accounting system. Comparison of revenue reports from the two systems noted a net variance of TZS 2,988,053,610. The reported revenue on accounting system was overstated when comparing with reported figure in the revenue collection system.

I am of the view that failure to integrate the two systems might result in misstatement of revenue in the financial statements.

I recommend management of Tanzania Posts Corporation (TPC) to integrate the two systems to ensure all revenue streams are captured automatically in order to avoid manual work which are prone to errors and fraud.

Non integration of accounting system with GePG

My audit of controls over management of revenue collection and reporting noted that National Examination Council of Tanzania (NECTA) introduced collection of revenue via GePG. However, accounting system was not directly integrated with GePG, and this situation caused posting errors and reversal of entries amounting to TZS 2,590,515,731.30.

I am concerned that due to high number of errors, some might not be detected thereby causing misstatement of revenue in the financial statement.

I recommend management of National Examination Council of Tanzania to integrating the two systems so that revenue received through GePG reflects directly into the accounting system to minimize posting errors.

Students information system and accounting system not integrated

My review of integrity and consistence of students' information between online student information system and accounting system at Institute of Accountancy Arusha (IAA) revealed the difference of 74 students. The number of students at year-end in the accounting system totaled 3,788 while in students information system the total was to 3,714.

The variance was caused by weaknesses in updating students status changes between these two systems which are not integrated.

I am of concern that this might result to the revenue recognition problems since reported and projected revenue depends on number of students.

I recommend management of Institute of Accountancy Arusha to integrate the two systems to ensure that the changes of students' status are timely applied to the accounting system.

5.2 WEAKNESSES OF ICT GENERAL CONTROLS

My audit review under ICT general controls focus on ICT Business Continuity Planning (BCP) and Disaster Recovery Planning (DRP), service delivery, management of ICT third parties/vendors, application system change management, application system access controls, and ICT documented procedures.

5.2.1 INADEQUATE INFORMATION TECHNOLOGY GENERAL CONTROLS IN LGAS

IT General Controls (IGCs) are the basic controls that are applied to IT systems such as applications, operating systems, databases and supporting IT infrastructure. The objective of ITGCs is to provide assurance that the systems operate as intended and the outputs are reliable. IT controls exist within the LGAs' internal control framework to provide assurance over confidentiality, integrity and availability of data.

The most common ITGCs are logical access controls over applications, data and supporting infrastructure, Program change management controls, Back-up and recovery controls, Computer operations controls, Data centre physical security controls and System development life cycle controls.

Review of these general controls in 185 LGA's revealed the following weakness:

- 56 LGAs were significantly understaffed compared to number of systems that were being supported.
- ICT units are allocated with insufficient funds which limits staff training in order to cope with newly introduced systems and to support other systems operating in the lower level such as GoTHoMIS and FFARS.
- Inadequate effort exerted by the LGAs' management to ensure ICT equipment and infrastructures are adequately protected. Hardware and Software are vulnerable theft/damage, manipulation of data or disruption/ misdirection of the services they provide.

Such deficiencies have an impact on general performance of the LGA including poor service delivery, overloading and demotivating the current employees in the LGA.

I urge management of the LGAs to strengthen their IT units by recruiting staff, set aside sufficient ICT budget and procure the required ICT equipment. Also, to improve access controls in order to ensure ICT equipment, infrastructures and information are adequately protected. Finally LGAs have to ensure computers are running with updated antivirus.

5.2.2 LACK OF EFFECTIVE BUSINESS CONTINUITY AND DISASTER RECOVERY PLAN

I reviewed BCP and DRP of government entities to assess adequacy of plans to counteract interruptions to business activities, to protect critical business processes from the effects of major failures of information systems or disasters and to ensure their timely resumption. The review noted the following deficiencies:

Weaknesses of Business Continuity Plan and Disaster Recovery Plan

My review of the business continuity and disaster recovery operations at Sokoine University of Agriculture (SUA) revealed that the University had no approved BCP and DRP, backup copies of some of application systems were being kept in the primary data centre, restoration tests of data backup were not conducted, and the secondary site for disaster recovery was in proximity to the primary site.

I am of the view that, storing backup copies in the proximity to the server room expose them to same risks that faces production data, and in case of natural disaster the University runs the risk of facing permanent loss of data in both primary data center and recovery site since they are in proximity. Absence of the approved BCP and DRP implies that in case of a disaster, the University might not be able to resume its operations timely with expected amount data.

I recommend management of Sokoine University of Agriculture to;

(a) Fast track the approval and implementation of BCP and DRP.

(b) **Ensure backup of all systems is done and copies are taken to offsite location.**

(c) **Conduct periodic restoration tests of backup copies and maintain the sign-offs for test results.**

Similarly, while auditing at Energy and Water Utilities Regulatory Authority (EWURA) I reviewed the Business Continuity Plan (BCP), backup testing, restoration procedures, and backup operation manuals of individual application systems. I noted that testing of BCP and training to BCP teams and other relevant staff were not conducted, there was lack of backup and restoration procedures for applications, and there was no weekly reports on the restoration of backup copies as required by EWURA ICT backup testing and restoration procedures.

I am of the view that these irregularities could lead to failure to timely recover from disaster with minimal loss of data.

I recommend management of the Energy and Water Regulatory Authority to:

(a) Ensure that testing of the BCP and training of the BCP teams and relevant staff is conducted.

(b) Maintain a documented backup and restoration procedures for all applications and conduct backup restoration test weekly and report the results.

Mismatch of RPO and the backup interval for critical application systems

My review of Business Continuity Plans for Energy and Water Regulatory Authority (EWURA) and Tanzania Telecommunications Corporation (TTCL) noted a mismatch between Recovery Point Objectives (RPO) and the intervals at which backups were taken.

During my TTCL review I noted that RPO set for six application systems does not match with the intervals at which data backups were taken for the systems. Similar case was observed at EWURA where I identified the mismatch of RPO defined in the BCP to the backup intervals specified in the backup operational manual of respective systems.

I am concerned that the mismatch of the RPO with the interval at which backups are being taken could lead to failure of recovering expected quantity of data in case of a disaster.

I recommend management of Energy and Water Regulatory Authority and Tanzania Telecommunication Limited to align the interval for backup taking to the RPO as stated in the BCP document to ensure the loss of data does not exceed the maximum tolerable loss of data in case of occurrence of disaster.

Absence of Business Continuity Plan (BCP) and Non-Review of Disaster Recovery Plan (DRP)

BCP and DRP outlines how organization will continue operating after occurrence of an unplanned event of disaster or ensures that system and IT assets are protected and are able to resume timely in the event of a disaster. The plans typically include strategies to mitigate risks, protect critical applications and data and recover from failure in a controlled and measurable way.

I observed that Ardhi University (ARU) and Public Service Social Security Fund (PSSSF) had no BCP documents since the business impact assessment was not performed to outline the vulnerable areas for potential losses of data and service down time. The BCP is the management direction on how disaster should be handled to ensure timely resumption of operations.

I am of the view that absence of BCP poses risks towards addressing continuation of operations after occurrence of an unplanned event or disaster and protection of IT assets and timely resumption of operations.

I recommend management of Ardhi University and Public Service Social Security Fund to conduct business impact assessment and use it to develop BCP.

5.2.3 ICT SERVICE DELIVERY INADEQUATELY MANAGED

In my review of effectiveness of ICT service delivery, I assessed controls in place for management of government entities to measure performance of ICT department. My review noted the following irregularities:

Lack of operation level agreement between management and ICT department

Section 2.2.2 (vi) of the guidelines for development, acquisition, operations and maintenance of e-Government applications states that "There should be operation level agreement (OLA) between ICT department and user department stipulating key elements that ascertain the responsibilities of the user department and ICT departments for quality of service".

OLA can be used to track internal service commitments such as response time for incidents or problems assigned to ICT department and availability of infrastructure supporting various application systems.

My review of IT Service Management at Tanzania Broadcasting Corporation (TBC), Ocean Road Cancer Institute (ORCI) and Gaming Board of Tanzania (GBT) noted that managements of the respective entities have not established OLA with IT units. These agreements could be used to benchmark quality of services which IT Unit supports or provides to internal user departments.

Similarly, my review of incident management at Land Transport Regulatory Authority (LATRA) and Tanzania Communication Regulatory Authority (TCRA) noted that the authorities have acquired helpdesk application systems for recording and managing reported ICT incidents and established incident management

procedure to standardize the process receiving and handling of incidents. However, they lack OLA for performance measurement and assurance of quality of service.

I am concerned that without OLA, managements might not be able to benchmark and assess performance of services provided to internal departments by ICT Units.

I recommend Tanzania Broadcasting Corporation, Ocean Road Cancer Institute, Gaming Board of Tanzania, Tanzania Communication Regulatory Authority and Land Transport Regulatory Authority managements to ensure that operational level agreement is developed, agreed, reviewed and maintained to define activities and measurement criteria which will guide ICT departments in the respective organizations to resolve reported incidents timely and to the expectations of user department and management.

Irregularities of ICT support service management (ICT helpdesk)

My review of procedures for requesting, receiving, recording and resolving ICT incidents reported by user departments noted handling inefficiencies as described below.

My review of ICT support services provided by the ICT Unit at Tanzania Broadcasting Corporation (TBC) and Arusha International Conference Centre (AICC) revealed that, issues and queries from users related to use of the systems are submitted through phone calls and are attended by the ICT team. However, there was no mechanism to keep record of submitted queries and assigned IT staff for easy monitoring to ensure they are resolved timely.

Another review of support requests submitted by internal users in the helpdesk system at Tanzania Communication Regulatory Authority (TCRA) noted that from 1st July, 2018 to 8th January, 2019 there were nine support requests for five application systems. This implies that most of support requests for major application systems

are not recorded in the helpdesk system resulting into underutilization of the system.

I am concerned that lack of proper mechanism to keep records of service support and incidents reported makes monitoring of timely resolution difficult, thus resulting to users' dissatisfaction. Moreover, a list of frequently asked questions and answers (FAQ) cannot be easily developed to assist users to resolve commonly known issues.

I recommend management of Tanzania Broadcasting Corporation and Arusha International Conference Centre to acquire Helpdesk systems for effective recording and monitoring of user support requests. Also management of Tanzania Communication Regulatory Authority is advised to ensure the helpdesk system is used by staff to request all support queries and report incidents.

5.2.4 INEFFECTIVE MANAGEMENT OF THIRD PARTIES/VENDORS

My review of ICT general controls also covered assessment of controls associated with management of ICT third parties/vendors to ensure appropriate level of information security and service delivery is maintained. The following findings were noted in my review:

Excessive application system access rights granted to vendor

My review of application general controls surrounding accounting system of the Ardhi University (ARU) noted that the role of system administration is left to the vendor. The vendor has full control access of the system, manage users and grants access rights to system users. My further review noted that there was no compensating control such as regular review of vendor's activities to ensure there were no unauthorized activities.

Given the criticality of accounting system, I am of the view that the administrative rights given to the vendors exposes the University to the risks of exposure of critical information and potential misuse that can lead to fraud.

I recommend the management of Ardhi University to revoke system administration access rights of the vendor and assign the responsibility to an internal IT staff. Vendor should only be given access on need basis during system maintenance.

Lack of a contract with ICT service provider

In my audit of Tanzania's Export Processing Zones Authority (EPZA), Tanzania Civil Aviation Authority (TCAA), Kilimanjaro Airport Development Company Limited (KADCO), Public Procurement Regulatory Authority (PPRA), and Tanzania Commission for Universities (TCU), I identified lack of contractual agreements between the respective entities with ICT service providers.

My review of EPZA and TCAA noted that, the Authorities had no written contract with Tanzania Telecommunications Corporation (TTCL) which is internet service provider. This was also the case for KADCO where the Corporation had no support and maintenance contract with the vendor of billing system while the system is in use implying that KADCO does not have a reliable support service in case of system break down. I was informed by the management that negotiations with the vendor failed, thus KADCO is planning to replace existing billing system because it has weaknesses.

I also noted similar issues when auditing PPRA and TCU. At PPRA, I found that European Dynamics (ED) has been providing maintenance services for TANePS since March 2018, but its contract had not been finalized and signed. Also, COSEKE Tanzania Limited was contracted to provide support and maintenance service for document management system but its contract ended on 4th January, 2019 and the procurement of new service provider was not initiated.

As for the case of TCU, I noted that the Commission's contract with e-GA (on Data Center – Dedicated Hosting Services) expired since 30th May 2018. Nevertheless, I noted that TZS 24,554,842 was paid to e-GA in two installments in which TZS. 12,277,421 was paid on

19th October 2018 and TZS. 12,277,421 paid on 29th March 2019. These payments were made after the expiration of the contract.

I am of the view that non-existence of service contracts between the entities and service providers denies entities the right to hold service providers accountable in case of failure to provide services at expected level and to adhere to nondisclosure of information clauses. In addition, the contract is a basis for charging for services provided thus in absence of contracts, the basis for charging for the cost of services could not be determined.

I recommend management of Tanzania's Export Processing Zones, Tanzania Civil Aviation Authority, Public Procurement Regulatory Authority and Tanzania Commission for Universities to ensure they have formal contracts with service providers. Management of Kilimanjaro Airport Development Company Limited to fast track acquisition of new billing system to avoid using system that does not have reliable maintenance and support.

Lack of Service Level Agreement

A Service Level Agreement (SLA) is an agreement or contract between an organization and their service provider that details the obligations and expectations of the relationship between the organization and its service providers. The SLA functions as a blueprint of the service the provider will provide, and can protect client's assets and reputation.

My review of management of ICT third parties service delivery noted that, Institute of Adult Education (IAE) has an Online Application System and Student Academic Register Information System hosted and managed by a vendor named Zalongwa Technologies Limited. IAE entered into contract with the vendor on 16th July 2015 at TZS.500,000 monthly fee for one year with annual automatic renewal clause. I have however noted that, the contract does not specify service level agreement (SLA) to set the expected level of

service and provide the benchmark for measuring vendor performance.

I am of the view that, lack of SLA in the contract with Zalongwa Technologies Limited denies the Institute the ability to hold the former accountable in case of deficiencies in services being delivered.

I recommend the management of the Institute of Adult Education to review the contract with Zalongwa Technologies Limited to include service level agreements and penalties for failure of the vendor to meet agreed service level.

5.2.5 APPLICATION CHANGES INADEQUATELY MANAGED

Operational systems and application software should be subject to strict change management control. Formal management responsibilities and procedures should be in place to ensure satisfactory control of all such changes. Inadequate control of changes to information processing facilities and systems is a common cause of system or security failures. My review of application systems change management controls noted the following weaknesses:

Irregularities in managing changes to application systems

During the audit of Energy and Water Utilities Regulatory Authority (EWURA), I reviewed two major changes to application systems that were made in the year under review. I noted that, system changes were not registered to maintain log of changes requested and implemented for reference and tracking purposes; and lack of User Acceptance Test reports for the changes made.

I further noted that there were no descriptions on the complexity of change, impact to other systems, expected risks with their mitigations and fallback procedures. There was also no proper documentation of changes as per system change procedures and change requisition forms were not filled and signed by Head of Divisions for ownership and accountability.

I am of the view that, inadequate control of changes to application systems is a common cause of system or security failures. Lack of controls in changes to the operational environment, especially when migrating a system from development to operational environment, can have impact on the reliability of applications.

I recommend the management of Energy and Water Utilities Regulatory Authority to establish a register of system change requests and record all change requests with unique identification, ensure that change requisition forms are filled and signed by business owners of systems, and develop a template for reporting technical evaluation changes and ensure such evaluation is done for all major changes.

My review of software change management at Sokoine University of Agriculture (SUA) identified that in February 2019, there was a disruption to the hospital management system which resulted from ineffective deployment of changes to the system attributed by lack of documented change procedures contrary to Para 70 (a) of SUA ICT guidelines. I also identified that changes to the hospital management system were tested in live environment.

Further, I noted that the enhancement of Votebook system did not follow change management guidelines for there were no evidence for documentation of user requirements, testing, and system review before changes were deployed.

I recommend management of Sokione University of Agriculture to:
(a) Establish documented system change management procedure;
(b) Ensure development, test, and live/production environments of all application systems are separated; and
(c) Strengthen controls to ensure all changes to systems follow documented change management procedures.

I also reviewed the ICT work plan for the year 2018/2019 at Tanzania Bureau of Standards (TBS) and noted that there were three activities related to enhancement of existing systems. These enhancements were supposed to follow application change management controls. However, I was not availed with evidence for change request and approval, objective/rationale of enhancement, requirements specification, impact analysis, contingency/fallback, user acceptance test, and lessons learnt.

I am of the view that the software enhancement activities violated the Bureau's ICT policy which might lead to business disruption and security risks during implementation of changes.

I recommend the management of Tanzania Bureau of Standards to review enhancement done to the application systems to ensure introduced changes did not have impact on performance and security of the system and strengthen controls to ensure all changes to the system adhere to best practice.

Weaknesses in application change management controls

Review of application change management controls especially in respect to access to test and production environment noted 13 changes that were implemented at the Workers Compensation Fund (WCF) during the period under review. However, I noted that change migrator of all 13 changes took part in the development process which violates principle of segregation of duties. Similar concern was noted at the Ngorongoro Conservation Area Authority (NCAA) where the System Administrator had access to production and test environment.

I am of the view that failure to segregate duties between access to test and production environment can cause unauthorized changes to be introduced into production.

I recommend management of Workers Compensation Fund and Ngorongoro Conservation Area Authority to restrict access rights

of System Administrators and application testers in the test and production environment respectively to reduce the risk of migration of unauthorized changes and system failures which in turn might lead to financial losses.

Lack of application change management procedure

My review of existence of documented application change management procedures noted that Public Service Social Security Fund (PSSSF) had not developed change management procedure to govern changes to application systems, while Tanzania Communication Regulatory Authority (TCRA) had its change management procedure documented but not approved by management.

I am concerned that implementing the changes without approved change management procedures would lead to implementing changes which are not approved and do not satisfy business needs of the organization.

I recommend management of Public Service Social Security Fund and Tanzania Communication Regulatory Authority to ensure that application change management procedures are documented and operationalized in managing changes to application systems.

5.2.6 ABSENCE OF DOCUMENTED ICT SERVICE MANAGEMENT PROCEDURES

Paragraph 2.3.23 of e-Government infrastructure architecture – standards and technical guidelines requires Public Institutions to develop ICT Service Management Procedures including but not limited to incident management, service request management, helpdesk management and change management.

Review of ICT operations with regard to ICT service management procedures at the Institute of Adult Education (IAE), Kilimanjaro Airport Development Company Limited (KADCO), Tanzania Shipping Agencies Corporation (TASAC) and the National Museum of Tanzania (NMT) noted absence of documented procedures for incident

management, service request management, helpdesk management and change management.

I am concerned that lack of formal documented ICT service management procedures might result to incorrect and insecure ICT operations due to lack of standardized management of ICT operations.

I recommend the managements of the Institute of Adult Education, Kilimanjaro Airport Development Company Limited, Tanzania Shipping Agencies Corporation and National Museum of Tanzania to document procedures for incident management, change management and access control. By the same token, I urge the management to establish mechanism for recording the reported ICT incidents and monitor them to ensure timely resolution through a helpdesk system.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 CONCLUSION

The United Republic of Tanzania has been embarking on investing in ICT to achieve economic benefits through implementation of National ICT strategy and Tanzania e-Government strategy. Formulation of these strategies together with establishment of TCRA, ICT commission and e-GA justifies government commitment in ensuring standardization, coordination and oversight of ICT initiatives to ensure ICT delivers the expected benefits.

Further, the Tanzania Development Vision 2025 recognizes that ICT is central to a competitive social and economic transformation by stating: "*These technologies are a major driving force for the realization of the Vision. They should be harnessed persistently in all sectors of the economy This task demands that adequate investments are made to improve the quality of science-based education and to create a knowledge-based society in general*". Government institutions have been increasingly investing in ICT in facilitating operations and offering services to general public in vision 2025 development goals.

I acknowledge efforts and developments that have been made since formulation of the first National ICT policy 2003. However, I noted challenges related to monitoring and evaluation of National ICT policy strategy and Tanzania e-Government strategy, integration of systems and duplication of efforts in implementing ICT initiatives among government entities, management of ICT projects, ICT governance, application and general controls surrounding accounting systems and revenue application systems, ICT vendor management and management of ICT risks.

The government through Ministry of Works, Transport and Communication and President's Office - Public Service Management and Good Governance should establish effective mechanism to ensure the National ICT policy strategy and Tanzania e-Government

strategy are translated to strategic and operational plans of implementing institutions and all other government entities. This should be coupled with ensuring that monitoring and evaluation of these strategies is effectively conducted and reported. I believe that clear translation, monitoring and evaluation will ensure standardization and effective ICT controls and operations in government entities.

For instance, e-GA is the implementer of the Tanzania e-Government strategy under the oversight of PO-PSMGG, the ministry responsible for e-Government as per National ICT policy 2016. However, there was no clear alignment between e-GA's strategic plan and Tanzania e-Government strategy.

Also, there was no adequate oversight of PO-PSMGG over the implementation of e-GA's strategic plan to ensure objectives of Tanzania e-Government strategy are achieved by addressing major challenges of ICT initiatives in the government, such challenges include: duplication of initiatives, disintegrated application systems, inadequate management of ICT projects and noncompliance with e-Government standards and guidelines.

Consequently, the e-Government strategy has not adequately impacted ICT operations at the level of individual government entities. e-GA has developed ICT standards and guidelines as part of implementation of Tanzania e-Government strategy. However; I noted that the level of compliance of government entities with these standards and guidelines is minimal, most of irregularities identified in this report were attributed by noncompliance with e-Government standards and guidelines and directives provided by Ministry of Finance and planning.

I am of the view that this is due to inadequate controls to ensure Tanzania e-Government strategy is monitored, evaluated and translated from PO-PSMGG as a parent ministry to e-GA as implementing Agency and finally to individual government entities.

6.1 RECOMMENDATIONS

Finally, as per the mandate vested in me under Sect. 12 of Public Audit Act, No. 11 of 2008, following weaknesses I have noted in government entities with respect to management of ICT initiates, I have made a number of recommendations to the Ministries and Agencies responsible for oversight of ICT adaptation in the country and government. It is my belief that, if these recommendations are implemented will contribute to improving the management of ICT to ensure security and effectiveness leading to economic benefits. The recommendations include the following among others:

- Ministry of Works, Transport and Communication to ensure monitoring and evaluation of the National ICT policy implementation strategy is done and reported as stated in the strategy. Also, to develop fund mobilization plans for funding of the strategy to ensure commitment and management of changes and associated risks.
- Ministry of Works, Transport and Communication to develop operational plan that clearly outlines activities, timeline and responsibility of each implementing institutions of the National ICT policy implementation strategy. This will ensure easy monitoring and accountability considering that one objective of the strategy is implemented by more than one institution.
- PO-PSMGG to improve oversight on implementation of Tanzania e-Government strategy by closely monitoring e-GA's strategic plan. Also should ensure monitoring and evaluation of the strategy is effectively conducted and impact is translated to the individual government entities.
- Ministry of Finance and Planning to strengthen follow up of circular number 5 of 2019 so that acquisition and implementation of accounting and revenue systems in government entities is managed so as the noted anomalies of application controls are avoided to improve revenue collection and reporting of financial.

- Ministry of Finance and planning to ensure acquired accounting and revenue application systems are fully utilized to ensure value for money and all transactions are done in the systems for consistence of information.
- Ministry of Finance and planning to ensure accounting systems and revenue collection systems are integrated for effective reporting of revenue collection.
- Ministry of Finance and planning to ensure issues noted with regard to online payments through Government Electronic Gateway are rectified to improve convenience and avoid loss of revenue.
- PO-RALG to improve effectiveness integration of IFMS Epicor with other financial related systems and ensure all accrual transactions are captured in IFMS Epicor. Furthermore PO-RALG is required to ensure all modules in IFMS Epicor are fully utilized in order to realize value for money on the invested systems, also to enhance reliability of LGAs' financial information.
- I urge PO-RALG to ensure management of the LGAs strengthen IT units by recruiting staff, set aside adequate ICT budget and procure the required ICT equipment. Also, to improve access controls in order to ensure ICT equipment, infrastructures and information are adequately protected. Finally LGAs have to ensure computers are running with updated antivirus.
- PO-RALG to ensure the noted anomalies of LGRCIS are rectified and also issues reported by LGAs through helpdesk are resolved timely.
- The e-Government Agency to improve internal controls to ensure effective identification, coordination and reporting of common ICT initiative and system integration in the government.
- The e-Government Agency to avoid conflicting its function by ensuring that it does not review or audit entities which e-GA was implementer of ICT initiatives.

- The e-Government Agency and NDC to sign a memorandum of understanding to avoid duplication of services offered to government entities. Also to ensure the MoU includes right to audit clause to allow e-GA to get assurance on control effectiveness at NDC.
- The e-Government Agency to ensure it has contracts and SLAs with all government entities receiving its services for accountability purposes.
- The e-Government Agency to ensure the noted deficiencies on ERMS application are rectified to ensure proper recording of transactions and generation of financial statement reports.
- PO-PSMGG through E-Government Agency to improve follow up of compliance with e-Government guidelines and standards in government entities to ensure:
    - Adequate reporting structure of ICT departments, ICT strategic plans are developed, monitored and evaluated.
    - Management of ICT operations is centralized and performed by the ICT department. User departments should not have their own arrangements with respect to management of ICT services.
    - Accounting officers submit details of ICT projects and existing application systems to e-GA to ensure the government has a database of all ICT initiatives to avoid duplication and identify possible integrations. Also this will ensure that ICT projects are effectively managed.
    - Assessments of ICT related risk are done, risk registers are prepared and identified mitigation controls are implemented.
    - BCP and DRP are developed and tested periodically and key staff trained accordingly.
    - ICT incidents reported by user departments are proper recorded and resolved timely. Also, Operational Level Agreements should be established with ICT

departments to benchmark and measure performance of ICT service.

- Organizations have contracts with ICT vendors offering services for accountability and measurement of quality of service.
- Changes to application systems are deployed in accordance to change management controls to avoid disruptions of operations and raising security concerns.
- ICT service management procedures such as incident handling, software change management and data backup and restoration processes are documented to foster standardized ICT operations.