# THE UNITED REPUBLIC OF TANZANIA
# NATIONAL AUDIT OFFICE

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NATIONAL AUDIT OFFICE
NAOT

# PERFORMANCE AUDIT REPORT ON COST–EFFECTIVENESS OF INTERNALLY DEVELOPED GOVERNMENT ICT SYSTEMS

**CONTROLLER AND AUDITOR GENERAL**
**MARCH 2025**

## About the National Audit Office

**Mandate**

The statutory mandate and responsibilities of the Controller and Auditor General are provided under Article 143 of the Constitution of the United Republic of Tanzania, 1977 and in Section 10 (1) of the Public Audit Act, Cap 418

### NAOT Vision, Mission & Motto

**Vision**
A credible and modern Supreme Audit Institution with high-quality audit services for enhancing public confidence.

**mission**
To provide high-quality audit services through modernization of functions that enhances accountability and transparency in the management of public resources.

**Motto**
Modernizing External Audit for Stronger Public Confidence

### Core Values

**Independence and Objectivity:** We are an impartial public institution, independently offering high-quality audit services to our clients in an unbiased manner.

**Professional competence:** We deliver high quality audit services based on appropriate professional knowledge, skills, and best practices.

**Integrity:** We observe and maintain high ethical standards and rules of law in the delivery of audit services.

**Creativity and Innovation:** We encourage, create and innovate value-adding ideas for the improvement of audit services.

**Results-Oriented:** We focus on achievements of reliable, timely, accurate, useful, and clear performance targets.

**Team Work Spirit:** We value and work together with internal and external stakeholders.

# PREFACE

Section 28 of the Public Audit Act, CAP 418 [R.E. 2021] gives mandate to the Controller and Auditor General to carry out Performance Audit (Value-for-Money Audit) to establish the economy, efficiency and effectiveness of any expenditure or use of resources in the Ministries, Departments and Agencies (MDAs), Local Government Authorities (LGAs) and Public Authorities and Other Bodies which involves enquiring, examining, investigating and reporting, as deemed necessary under the circumstances.

I have the honour to submit to Her Excellency, Hon. Dr. Samia Suluhu Hassan, the President of the United Republic of Tanzania, and through her to the National Assembly, the Performance Audit Report on the Cost-Effectiveness of Internally Developed Government ICT Systems.

The report contains findings, conclusions and recommendations that are directed to the e-Government Authority (e-GA). However, the Management of the e-Government Authority had the opportunity to scrutinise the factual contents of the report and provide comments. I, sincerely acknowledge that, the discussions with e-GA have been useful and constructive.

My Office will carry out a follow-up at an appropriate time regarding the actions taken to implement the recommendations given in this report.

I would like to thank my staff for their commitment to the preparation of this report. I also acknowledge the audited entities for their cooperation with my Office, which facilitated the timely completion of the audit.

Charles E. Kichere
**Controller and Auditor General**
**The United Republic of Tanzania**
**March 2025**

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| | |
|---|---|
| CBMS | Centralised Budget Management System |
| ECTS | Electronic Cargo Tracking System |
| eGA | e-Government Authority |
| eIDSR | Electronic Integrated Disease Surveillance and Response |
| GISP | Government ICT Service Portal |
| GSPP | Government Salary Payment Portal |
| ICT | Information and Communication Technology |
| IDRAS | Integrated Domestic Revenue Administration System |
| ILCMS | Integrated Land Case Management System |
| ILMIS | Integrated Land Management Information System |
| IMES | Integrated Monitoring and Evaluation System |
| ITAX | Integrated Tax Administration System |
| m-Gov | Government Mobile Platform |
| MUSE | Mfumo wa Uhasibu Serikalini |
| NSMIS | National Sanitation Management Information System |
| PLANREP | Planning, Budgeting and Reporting System |
| PO-RALG | President's Office - Regional Administration and Local Government |
| SDD | System Design Document |
| SRS | Software Requirement Specifications |
| TEMS | Tax Exemption Management System |
| THPRS | Tanzania Health Practitioners Registration System |
| TPLMIS | Ten Percent Loan Management Information System |
| CAG | Controller Auditor General |
| TIPS | Tanzania Instant Payment Systems |
| PO-PSMGG | President's Office - Public Service Management and Good Governance |
| TEMS | Tax Exemption Management System |
| ECTS | Electronic Cargo Tracking System |

| | |
|---|---|
| MoF | Ministry of Finance |
| TRA | Tanzania Revenue Authority |
| ISSAIs | The International Standards of Supreme Audit Institutions |
| INTOSAI | International Organisation of Supreme Audit Institutions |
| ICTs | Information and Communication Technologies |
| MDAs | Ministries, Departments and Agencies |
| MTEF | Medium-Term Expenditure Framework |
| SDS | System Developed from Scratch |
| OTS | Off-The-Shelf |
| SRS | Software Requirements Specifications |
| UAT | User Acceptance Testing |
| NECTA | National Examinations Council of Tanzania |
| PReM | Primary Records Manager |
| PLAN-REP | Planning, Budgeting and Reporting System |
| TPA | Tanzania Ports Authority |
| DICT | Directorate of Information and Communication Technology |
| MoH | Ministry of Health |
| HCMIS | Human Capital Management Information System |
| UCSAF | Universal Communications Service Access Fund |
| NBS | National Bureau of Statistics |
| eMAS | Electronic Marking System |

## EXECUTIVE SUMMARY

**Background**

The use of ICT systems in the administration of government functions and the delivery of public services helps institutions achieve greater operational and cost efficiency in the execution of their administrative functions. Meanwhile, this improves public service delivery by enhancing efficiency and effectiveness, making access to Government information and services both convenient and affordable.

Therefore, this audit aimed to assess the performance of the e-Government Authority in overseeing the planning and implementation of internally developed ICT Systems in the Government in order to ensure that, they are cost-effective.

**Main Audit Findings**

**Public Institutions Acquiring ICT Systems with Relatively High Financial Costs**

The audit found that public institutions owned ICT systems at relatively higher financial costs, which were beyond the normal average costs. In the assessment of costs of the internally developed systems from the visited entities, it was found that there were four (4) systems that were acquired at a relatively higher cost than all other systems. The most expensive among these systems was Mfumo wa Uhasibu Serikalini, developed by the Ministry of Finance, which was acquired at a total cost of TZS 8.8 billion. Further analysis revealed that the average cost for acquiring systems through internal development (inhouse) was TZS 459.4 million.

It was generally observed that, outsourced systems were acquired at a relatively higher cost than in-house systems. The average cost for acquiring systems through outsourcing was TZS 1.3 billion. Whereas, a further assessment of outsourced systems found that, the Government Network (Gov-Net) at e-Government Authority, categorised as a network system, was the most expensive system among the outsourced systems, having been acquired at an amount of TZS 41.7 billion.

**Limited Information on Financial Costs of ICT Systems**

The audit noted that, public institutions were not providing complete and accurate financial cost data to the Government ICT Services Portal which was maintained by the eGovernment Authority. Likewise, the e-Government Authority (e-GA) did not ensure the accuracy of cost data of the deployed government ICT systems as submitted by public institutions.

Moreover, the audit found that, out of 438 recorded ICT projects as of 2024, 82.4% had missing information on license fees, 95.9% were missing information on hosting costs, and 82.6% did not contain information on support costs. On the other hand, 93.4% of the systems did not have information on maintenance/upgrading costs, which was mostly linked to inadequate costing details in the GISP as maintained by the e-Government Authority. For instance, some ICT Systems had licensing fee records indicating the presented cost data ranging from an amount of TZS 1 to 8,674. This implies that, there is inconsistent and unreliable cost data to adequately inform e-GA in order to advise accordingly regarding the financial aspects of the proposed government ICT projects.

Similarly, an observation made by the audit team found that, the documented estimate of financial cost data at e-Government Authority was limited to license fees, hosting, support, and maintenance/upgrade costs. In this case, out of 438 recorded ICT projects, 82.4% had missing records for an estimated cost for the license fee, 95.9% for hosting costs, 82.6% for support costs, and 93.4% for maintenance/upgrading costs.

**Existence of Duplicate ICT Systems among Public Institutions**

The audit team noted that there was an ineffective system for tracking the outcomes of the review of concept notes and appraisals. This was confirmed by instances in which the e-Government Authority was not aware of ICT projects' initiatives implemented by public institutions. As a result, cases of system duplication were identified whereby ICT systems with similar functionalities were observed in five (5) main fields: Financial Management, Human Resource Management, Fleet and Transport, Enterprise Resource Management, and Student Management. On the other hand, the analysis of the Software Assets Data from e-Government Authority 2024 indicated that, there was an existence of ICT systems that performed similar functionality

in 19 cases, with a total budget allocation for these systems accounting at TZS 10.2 billion.

**Inadequate Cost Control Measures in Systems Development**

The audit found that, visited public institutions did not adequately implement cost-control measures in system development activities when acquiring ICT systems. In this case, the audit found that, there was ineffective project cost management, which led to variations between the planned and actual costs throughout the project implementation cycles. For instance, it was found that institutions could not accurately estimate costs for 11 out of 18 systems.

Similarly, 11 out of 18 systems did not undertake cost itemisation, which is considered as an essential project cost control measure. Likewise, 6 systems did not have cost information due to limited access from the donor partners, whereas 7 systems had undocumented project expenditure.

Moreover, in a review of budgets for development activities and the final actual costs of projects, it was found that public institutions incurred higher costs than the amount originally budgeted for development activities. In this regard, 3 out of 18 assessed ICT systems, namely THPRS, e-IDSR, and PLANREP, indicated a cost overrun of more than 30 %. Likewise, it was found that 6 systems spent an amount of funds which was not originally budgeted. These systems included CBMS, NSMIS, MUSE and m-GoV, GISP and UCS.

Furthermore, the audit found that, there were variations in the budget costs, the presence of cost overruns and the use of unbudgeted expenditures, which were linked to inadequate project management, weak controls of timelines in development activities and changes in scope and requirements. For instance, it was found that 17 out of 18 projects assessed had encountered delays ranging from 1 month to a maximum of 40 months. In this case, the least delayed project was ILCMIS, which was delayed for 1 month, while the most delayed project was GISP, with a delay of 40 months from the originally planned completion time. Meanwhile, a review of project scope and requirements changes found that 7 out of 18 projects had adopted 18 additional requirements and scope changes.

Furthermore, the audit found that, public institutions were preparing systems designs which were not complete, whereas they were found to miss 6 key components of the system from the respective designs. In this regard, 12 systems were missing network architecture, data dictionary, and hardware architecture, which were key to ensuring that the designed systems would be able to operate within the hosting environment and yield the expected benefits. It was further found that, out of 18 systems reviewed, the audit found that a total of 9 ICT systems were missing database designs, while 10 systems did not provide a non-functional requirement mapping. In this case, the most deficient system designs were UCS, GSPP, GISP and m-Gov, which were missing a total of 6 key design elements.

**Inadequate Testing of the Developed Systems**

The audit found that public institutions were not conducting adequate testing in order to ensure system quality and functionality. This practice was in compliance with the established guidelines. In this regard, the integration tests were done on 3 out of 18 assessed ICT systems, which is equivalent to 18%. On the other hand, the loading tests were conducted in only 1 out of 18 systems, which is equivalent to 6% of the total number of systems. As a result, the deployment of inadequately tested systems posed the risk of inadequate performance and functionality under peak conditions. This, in turn, compromised the value of money and the effectiveness of ICT systems.

**Cost Overruns for Completed ICT Projects**

The audit found that, the completed ICT projects experienced cost overruns over the period under which they were developed. In this case, the budgets for development activities and the final actual costs of projects were found to be different. However, the majority of the systems incurred costs that were higher than originally budgeted. Thus, the presence of cost overruns in the acquisition of ICT Systems increased the total costs of ownership of the developed systems, hence rendering the acquired systems cost-ineffective. For instance, the cost of acquiring the PLANREP system, which was originally planned to be at an amount of TZS 1.4 billion, was eventually acquired at an amount of TZS 3.5 billion, equivalent to a 150% cost overrun.

## Audit Conclusion

The audit concludes that the oversight function undertaken by the e-Government Authority for public institutions has not been effective. This is due to the inability to provide assurance and guarantees for cost-effective, internally developed ICT systems. In this case, public institutions continued acquiring ICT systems with ineffective cost-control measures while due considerations were geared towards developing cost-effective systems. The audit also concludes that the oversight function undertaken by the e-Government Authority for public institutions did not ensure cost-effective planning and implementation of internally developed ICT systems. Therefore, inadequate consideration of cost control measures during the planning and deployment of the respective systems led to unforeseen costs after deploying the respective systems.

## Audit Recommendations

The Management of e-Government Authority is urged to:

a) Revise the project review criteria in order to set clear requirements for identifying and estimating long-term and short-term costs associated with internally developed ICT systems;

b) Ensure that, all the costs for the deployed ICT systems in public institutions are properly documented and reported so as to inform the financial aspects of the project completion;

c) Enhance the performance of regular assessments of internally developed ICT systems in order to ensure their cost-effectiveness;

d) Enhance internal capacity in skills and knowledge for systems development and maintenance and in providing support to other public institutions towards ensuring cost-effectiveness of the internally developed ICT systems; and

e) Ensure public institutions engage relevant key stakeholders in ICT systems from development to the deployment stage.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background

Information and Communication Technology (ICT) is one of the major factors influencing economic change[1]. In this regard, the National ICT Policy aims to promote local manufacturing of ICTs and enhance research and development, innovation, and entrepreneurship for ICT Innovation Policy.[2]

Moreover, the use of ICT systems in the administration of Government functions and the delivery of public services helps institutions achieve greater operational and cost efficiency in the execution of their administrative functions. This, in turn, improves public service delivery by enhancing efficiency and effectiveness, making access to Government information and services convenient and affordable.[3]

Based on this fact, the Government has undertaken various initiatives to facilitate e-government implementation, including oversight at a policy level, establishing the e-Government Authority to coordinate, oversee, and promote e-government initiatives, and enforcing compliance with e-Government. Also, this Authority provides guidance and assistance on e-government initiatives for public institutions and sets technical standards and procedures for ICT planning, acquisition, and implementation.

Therefore, this audit aimed to assess the performance of the e-Government Authority in overseeing the internal development of ICT Systems in the public sector in order to ensure that, the developed ICT Systems are cost-effective.

### 1.2 The Rationale for the Audit

The rationale for carrying out the audit emanated from the fact that the internally developed ICT Systems are either abandoned or do not fulfil the

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[1] Okeleke, K. (2019). Digital transformation in Tanzania - The role of mobile technology and impact on development goals. GSMA. www.gsma.com

[2] National Information and Communications Technology Policy (2016).

[3] President's Office – Public Service Management and Good Governance (Tanzania e-Government Strategy, 2022).

current requirements based on the services provided by a particular government entity. Therefore, this raises a concern about the cost-effectiveness and efficiency of their implementation from the time of their deployment to the current state. The mitigation of these challenges is important as it helps to realise value for money and the effectiveness of ICT systems used across government entities. Apart from these, there are other rationales which motivated the conduct of this audit, as summarised as follows:

## (a) Fluctuating E-Government Development Ranking for Tanzania

According to the United Nations E-Government Survey of 2022 on the e-Government Development Index (EGDI), Tanzania has been in a fluctuating position when ranked globally for the past 10 years. With regard to EGDI scores, Tanzania's position declined from 148th in 2012 to 130th in 2016, while in 2018 further declined to 152. In recent years, the position has dropped from 135th globally in 2020 to 153rd globally in 2022. Despite having an increasing EGDI score globally, the position of the country has, on average, been fluctuating. In Eastern Africa, the latest rankings indicate that, Tanzania ranks 3rd behind Kenya and Mauritius. **Figure 1.1**[4] shows the trend in the position rank of Tanzania from 2016 to 2022, which is indicated in **Figure 1,** while the trend in the actual EGDI scores is indicated in **Figure 1.2**.

**Figure 1.1: Global Position Rank for Tanzania**
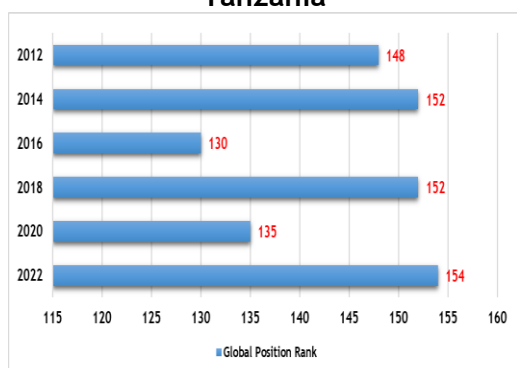
**Figure 1.2: EGDI Scores (2012-2022)**
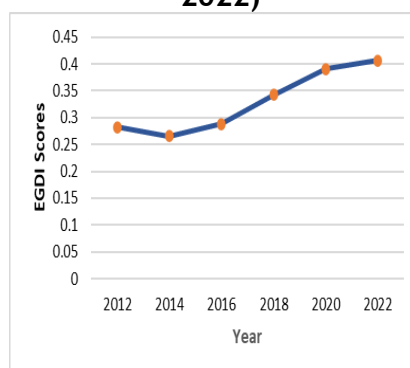


*Source:* United Nations E-Government Survey, 2022

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[4]https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/183-United-Republic-of-Tanzania/dataYear/2022 - *Accessed on 10.07.2024*

With reference to **Figures 1.1** and **1.2**, it is indicated that, Tanzania is globally having a fluctuating performance, which is indicated at an aggregate score by the position that it has been ranked regardless of having an increase in EDGDI scores. However, in the past 10 years, Tanzania dropped in position from 148th to 154th in 2022. Meanwhile, in the past 5 years, the country has experienced a steep decline in position from 135th to 154th in 2022. This decline in position is experienced regardless of having an increase in EGDI scores from 0.28 in 2012 to 0.4 in 2022.

Therefore, the use of the developed ICT systems in public institutions has been a major concern, and Tanzania may continue to lag behind in the global rank for e-government development. This is due to the growing dependence on digitalisation, and e-government has become a key driving force to accelerate work processes and service delivery to citizens and businesses. Also, it increases transparency and accountability and ultimately lowers operational costs.

### (b) Development of Duplicate ICT Systems within the Government

According to a review of Section 2.5.3 of the e-GA Strategic Plan of 2017-2021, it is stated that, public institutions are reluctant to share their ICT resources. This has led to duplication of efforts and resources. Similarly, the e-GA Performance Report of 2012-2017 indicated that, public institutions have implemented and used silo-based e-government initiatives without collaboration with other government agencies.

This is evident because the GISP system at e-Government Authority identifies Tanzania Regional Immigration Training Institute, Institute of Judicial Administration, and Ardhi Institute Morogoro as having developed similar student management information systems, which were developed without involving other government entities. This has led to this system serving overlapping functions in managing student information. It is, therefore, observed that, such fragmentation limits the efficiency and effectiveness of e-government services, culminating in the duplication of effort and resources due to incompatible technology.

It has to be noted that, having silo-based ICT systems, which result in duplicate systems, limit the sharing of information and collaboration across government entities undertaking operations that complement each other.

This in turn, affects the overall effectiveness of the intended public services. Bearing in mind that, different government entities operate in this manner, this may result in efficient implementation due to the inability of the government agencies to streamline processes, improve communication, and deliver services to the citizens.

### (c) Inadequate ICT Experts in the Government

According to the e-Government Strategy of 2022 by PO-PSMGG, the government has inadequate ICT experts, particularly in specialised areas such as software development, cybersecurity, and cutting-edge technologies like robotics, blockchain, artificial intelligence, and cryptocurrency. This inadequacy of experts poses risks with regard to the sustainability of the implemented e-government initiatives, especially those that have been developed and deployed using local resources. Therefore, the lack of skilled professionals in these critical fields threatens the effective implementation and ongoing support of these technologies.

On the other hand, the Government lacks highly qualified cyber-security experts, which results in inadequate cyber-security skills and thus, increases the risk of cyber-attacks. Likewise, inadequate research and innovation related to e-government systems have been conducted. This might result in unviable systems for most internally developed e-government solutions and, thus, the inability to satisfy the needs of the intended users.[5] In this regard, inadequate expertise can limit the successful integration of technology solutions within organisations and eventually lead to unnecessary delays in deployment, increased costs, and unsuccessful projects.

### (d) Loss of Public Funds through Abandoned ICT Systems

A report by the Controller and Auditor General of 2023 found that government institutions were incurring costs to procure systems that were later abandoned. Specifically, the report indicated that, in six (6) visited public institutions, a total of nine (9) ICT Systems worth TZS 2.87 billion acquired between 2017 and 2022 were abandoned and no longer being used. The abandonment of the systems from a functionality perspective was due

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[5] President's Office – Public Service Management and Good Governance – Tanzania e-Government Strategy 2022

to the fact that, the acquired systems were no longer serving their purposes in a manner that enhanced efficient public service delivery. Therefore, the best alternative was for the public institutions to acquire government-wide systems driven by e-government initiatives to ensure a connected government.

Therefore, abandoning the developed systems indicates a waste of public funds, which prompted a re-evaluation of the system requirements based on the intended services of the proposed ICT systems. In this case, the public funds utilised to develop the respective systems could have been committed to other government services.

## 1.3  The Audit Design

### 1.3.1  The Audit Objective

To assess whether the e-Government Authority effectively oversees the planning and the implementation of internally developed ICT Systems in the Government in order to ensure that they are cost-effective.

**The Specific Audit Objectives**

The specific objectives include to assess whether:

a) There are public institutions which acquire ICT Systems which are not cost-effective;

b) e-Government Authority ensures public institutions effectively consider and implement cost control measures when planning to acquire ICT Systems;

c) e-Government Authority ensures public institutions effectively consider and implement cost control measures when developing and deploying ICT Systems; and

d) e-Government Authority ensures that public institutions effectively implement cost control measures during maintenance and support of the deployed ICT Systems.

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Details of audit questions with corresponding sub-questions linked with these specific objectives are provided in **Appendix 2.**

### 1.3.2 The Scope of the Audit

The main audited entity was the e-Government Authority (e-GA). This is due to the fact that, the authority is responsible for overseeing the planning and the implementation of government ICT systems by ensuring that public institutions acquire them in a cost-effective manner.

Moreover, the audit focused on assessing the effectiveness of cost-control measures and other considerations that public institutions undertake to ensure that the acquired ICT Systems are cost-effective. This was done by assessing three main focus areas, including planning for the acquisition of ICT Systems, development and deployment of the systems, and maintenance and planning.

Regarding planning for the acquisition of ICT Systems, the audit focused on assessing whether public institutions effectively consider and implement measures to control costs on evaluation of total costs of acquisitions, identification of business requirements, development of system/software designs and choice of development framework.

Furthermore, based on the development and deployment of ICT Systems, the audit assessed the cost control and considerations in undertaking development activities and deployment of ICT Systems. This is considered in the environment to which the systems are deployed, the execution of testing activities and considerations in deployment, and the utilisation of systems' functionalities.

Regarding maintenance and support of ICT Systems, the audit assessed the cost control measures in the management of software licenses and post-implementation events, as well as the implementation of maintenance schedules.

Therefore, the audit covered five (5) financial years from 2019/20 to 2023/24. The rationale for the choice of this period is based on the fact that, during this period, the number of public institutions that have undertaken ICT systems development activities has increased significantly.

Thus, providing the justification for this period in assessing cost-effectiveness in acquiring the required ICT systems. Therefore, the selected span of years enabled the Audit Team to gather sufficient data to assess the performance of e-Government Authority and selected public institutions in ensuring that the developed ICT Systems within the public sector are cost-effective.

## 1.4 The Assessment Criteria

To respond to the audit questions, the audit was guided by the audit criteria. These criteria were based on the laws, guidelines, manuals, plans, reports, and best practices acceptable for the internal development of ICT systems in the public sector. The following key assessment criteria for each specific audit objective were used to assess the performance of e-GA in managing the internal development of ICT systems in the public sector:

**(a) Planning for Acquisition of ICT Systems**

Paragraph 2.3.1(v) of the Standards and Guideline for ICT Project Implementation of 2020 requires public institutions to identify funding requirements and sources for ICT project implementation, considering potential costs like hardware, subscriptions, technology licenses, maintenance, and support fees in system designs.

Similarly, section 16, sub-section 3(c) of the e-Government Act of 2019 provides for the functions of the National e-Government Steering Committee to include advising on key ICT projects and programmes in order to ensure synergistic and cost-effective adoption of ICT in the Government.

Moreover, section 25(a)(i) of the e-Government Act mandates public institutions to prepare ICT system requirements based on the standards and guidelines provided by the Government to ensure the sustainability, reliability, continuity, and availability of a newly developed ICT system, meanwhile Section 3.3.3 of the e-Government Authority Strategic Plan of 2021/22 – 2025/26 mandates efficient and cost-effective e-service delivery.

**(b) Development and Deployment of ICT Systems**

With reference to section 1.9 of ICT Project Review Criteria, which requires public institutions to ensure that the costs involved in the development of ICT Systems reflect the market value. Similarly, Section 2.3.2 of the Standards and Guidelines for Government ICT Project Implementation requires public institutions to formulate a human resource plan that includes the participation of members of the internal ICT Team.

Moreover, regulation 23(c) of the e-Government General Regulations requires public institutions to comply with the design standards as a minimum requirement when developing, deploying or maintaining information systems. In this regard, the e-Government Authority has developed separate design standards that are supposed to be incorporated into the designs of specific systems.

Likewise, Paragraph 2.2.4 of the Standards for Development, Acquisition, Operation and Maintenance of e-Government Applications of 2022 mandates public institutions to conduct feasibility studies for acquiring ICT systems, considering economic, technical and operational feasibility.

Furthermore, regulation 22(d) of the eGovernment Regulations of 2020 requires the use of open-source technologies during the sourcing of ICT Systems in the Government. Section 2.1.1.2 of the Standards for Development, Acquisition, Operation and Maintenance of eGovernment Applications allows for other application development but with an approved change request. Similarly, section 2.1.1.1 of Standards for Development, Acquisition, Operations and Maintenance of e-Government Applications requires the use of Agile methodology in the development of the software in public institutions.

**(c) Maintenance and Support of Acquired ICT Systems**

Based on Paragraph 2.2.4.1 of the Standards for Development, Acquisition, Operation, and Maintenance of e-Government Applications of 2022 that requires an economic feasibility analysis to be conducted and provides cost-benefit justification concerning the expenses of an application, which includes procurement, project-specific, start-up, and operations cost.

On the other hand, section 2.1 (vii) of the Guidelines for Development, Acquisition, Operation, and Maintenance of e-Government Applications of 2020 provides for the requirement on the use of proper criteria that are to be used for estimating costs related to license fees for all common-use ICT support applications such as antivirus, operating systems, office suites, system/network monitoring, and appropriately planned and budgeted.

## 1.5  Sampling Techniques, Methods for Data Collection and Analysis

The audit team used various sampling techniques and methods for data collection and analysis, as detailed as follows:

### 1.5.1  Sampling Techniques

The audit team used purposive sampling techniques to select institutions to be visited and specific ICT systems to be assessed. Based on the audit, the unit of analysis was considered to be the specific ICT Systems developed by public institutions, also referred to as ICT projects. In this regard, the sampling frame consisted of the list of all ICT Systems internally developed and completed by public institutions in the country between July 2019 and June 2024. From the list of ICT Systems registered in the Government ICT Services Portal, a sampling frame consisted of a total of 201[6] systems.

The sample size of the number of ICT Systems to be assessed was determined using Yamane's formula, as given below.

$$n = \frac{N}{1 + N(e)^2}$$

**Key:**
*n is the sample size,*
*N is the population size*
*e is the level of precision (0.05)*

Given the identified population and using the 90% confidence interval, the sample size was computed using the Yamane Formula to obtain a sample size of 61 ICT systems. To obtain the optimum sample size, the audit team

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[6] This number also excluded ICT systems with unidentified development type i.e neither inhouse nor outsourced.

considered a minimum of 30% of the actual sample size. Hence, 18 internally developed ICT systems were studied under this audit.

*A Sampling of ICT Systems*

A purposive sampling was employed to select internally developed ICT systems in public institutions. In this case, the Government ICT Services Portal (GISP) was used to group software assets from different public institutions based on the costs incurred, including hosting, licence fees, support, and maintenance upgrades.

The total costs were grouped into three categories: Cost above an amount of TZS 1 Billion, Cost above an amount of TZS 500 million but below an amount of TZS 1 billion and below an amount of TZS 500 million. These cost categories ensured that, the selected ICT systems represented a wide range of the costs incurred by public institutions in acquiring the systems. The selected ICT systems with the names of the public institutions are summarised in **Table 1.1.**

**Table 1.1: The List of Selected ICT Systems**

| Name of the Public Institution | Name of the ICT System |
|---|---|
| President's Office – Regional Administration and Local Government (PO-RALG) | • Planning, Budgeting and Reporting System – PLANREP<br>• Integrated Monitoring and Evaluation System (IMES)<br>• Ten Percent Loan Management Information System (TPLMIS) |
| Ministry of Lands, Housing and Human Settlements Development | • Integrated Land Management Information System (ILMIS)<br>• Integrated Land Case Management System (ILCMS) |
| Ministry of Health | • Unified Community System (UCS)<br>• Tanzania Health Practitioners Registration System (THPRS)<br>• National Sanitation Management Information System (NSMIS)<br>• Electronic Integrated Disease Surveillance and Response (eIDSR) |
| Ministry of Finance (MoF) | • Mfumo wa Uhasibu Serikalini (MUSE)<br>• Centralised Budget Management System (CBMS)<br>• Government Salary Payment Portal (GSPP) |

| Name of the Public Institution | Name of the ICT System |
|---|---|
| Tanzania Revenue Authority (TRA) | • Integrated Tax Administration System (ITAX) <br> • Integrated Domestic Revenue Administration System (IDRAS) <br> • Tax Exemption Management System (TEMS) <br> • Electronic Cargo Tracking System (ECTS) |
| e-Government Authority | • Government Mobile Platform (m-Gov) <br> • Government ICT Service Portal (GISP) |

*Source:* Auditors' Analysis of Data from the Government ICT Services Portal, 2024

It has to be noted that, the selection of the the listed ICT systems in **Table 1.1** enabled a comprehensive assessment of adherence to the guiding instruments as issued by the e-Government Authority. The list enabled auditors to make a thorough evaluation of their compliance with established regulations and guidelines in the acquisition of ICT systems.

### 1.5.2 Methods for Data Collection

Both qualitative and quantitative data were collected to enable the acquisition of relevant and reliable data regarding the performance of the e-Government Authority in ensuring adherence to public institutions' guiding instruments in the course of developing ICT application systems. The audit team used different methods to collect information from the audited entity and other selected public institutions as described as follows:

#### (a) Interviews

Interviews were conducted with selected public institution officials to gain insights and clarifications on the information regarding practices in acquiring internally developed ICT systems. In this case, the interviews aimed to clarify conditions observed based on assessment criteria and audit questions, understand root causes in some cases and triangulate the information in order to confirm the consequences of observed conditions.

#### (b) Documents Review

Various documents from the e-Government Authority and other identified public institutions were reviewed to obtain comprehensive, relevant, and reliable information regarding compliance with e-Government guiding

instruments. Document review focused mainly on documents related to the consideration of cost control measures in all phases of the ICT project cycle. The reviewed documents consisted of information within the selected audit timelines that is from July 2020 to June 2024. The summary of the list of the reviewed documents and the justifications for their reviews are indicated in **Appendix 3**.

### (c) System Walkthrough

A system walkthrough was conducted on the selected ICT systems in the visited public institutions. The use of a system walkthrough assessed the functionality of the systems, the indications of errors or bugs from the systems, and the effectiveness of the controls and security features embedded in the acquired ICT systems. Also, the walkthrough determined whether the developed ICT systems increased operational efficiency and substantially reduced the operational challenges.

**Data Analysis Methods**

The audit team used two main data analysis methods, namely quantitative and qualitative data analysis methods, as described as follows:

*Quantitative Data Analysis*

The audit made a comprehensive analysis of the financial and operational aspects of ICT systems within public institutions. This included tabulating and comparing recorded costs for License Fees, Hosting, Support, and Maintenance/Upgrade to assess the extent of cost coverage across different institutions. Also, an analysis of the percentage of ICT systems reviews was conducted, alongside the identification of outliers in the total acquisition costs using Python's Pandas and Matplotlib packages.

Moreover, the analysis involved a comparison of the initial versus actual costs during the requirement gathering and system design phases for the selected ICT systems. It further grouped ICT systems based on similarity in their functionalities in order to quantify costs across sectors. Other aspects which were considered included the identification of missing design elements, the frequency of cost control measures adopted, and the variance between planned and actual acquisition costs.

Furthermore, the audit computed lag times for phases such as pre-development, development, and deployment and the frequency of maintenance checks. On the other hand, the audit team compared the budgeted versus actual maintenance costs and evaluated the time and human resources allocated per service before and after ICT system deployment.

*Qualitative Data Analysis*

The audit employed a comprehensive content and thematic analysis to assess various aspects of ICT system development. In this case, the analysis comprised quantification of themes on the status of ICT system reviews, focusing on both long- and short-term cost considerations and identifying long-term costs. Also, the audit compared the status of engagement for internal and external stakeholders in ICT systems development. Similarly, the analysis focused on identifying and using alternative cost options, the presence of non-budgeted system components, and the coverage of lifecycle processes in system designs.

Moreover, the audit analysed the scope of additional system requirements, the proportions of tests conducted across different categories, and the analysis of systems' walkthrough notes related to monitoring tools and applications. Likewise, the analysis focused on the engagement and acquisition of maintenance services and equipment through the review of interview transcriptions.

## 1.6 Data Validation

## 1.7 The Standards Used for the Audit

The Audit was conducted in accordance with the International Standards of Supreme Audit Institutions (ISSAIs) issued by the International Organisation of Supreme Audit Institutions (INTOSAI). These standards require the audit to be planned and performed to obtain sufficient and appropriate evidence to provide a justifiable basis for the findings and conclusions based on the audit objective.

## 1.8  The Structure of the Audit Report

The main parts of the audit report cover the following:

| CHAPTER 1 | INTRODUCTION |
| CHAPTER 2 | SYSTEM TO ENSURE COST-EFFECTIVENESS OF INTERNALLY DEVELOPED ICT SYSTEMS IN THE GOVERNMENT |
| CHAPTER 3 | AUDIT FINDINGS |
| CHAPTER 4 | AUDIT CONCLUSION |
| CHAPTER 5 | AUDIT RECOMMENDATIONS |
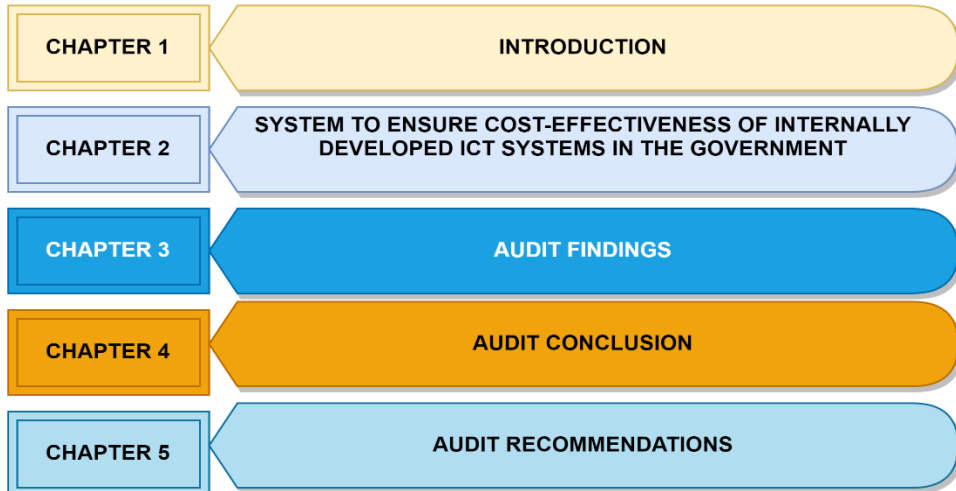
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# CHAPTER TWO

## THE SYSTEM TO ENSURE COST-EFFECTIVENESS OF THE INTERNALLY DEVELOPED ICT SYSTEMS IN THE GOVERNMENT

### 2.1 Introduction

This chapter describes the system to ensure cost-effectiveness and efficiency in the implementation of the internally developed ICT systems in Tanzania. It presents the policy and legal framework governing the overall system and the guidelines, roles, and responsibilities of the key stakeholders involved. The chapter also provides a description of the systems and processes involved in the internal development of ICT systems in the country.

### 2.2 Policy and Legal Framework

The development, monitoring and evaluation of staff competency in the public sector is governed by policies, legal frameworks and strategies in different levels of government operations, as shown in the following subsections.

### 2.2.1 Policy Framework

*National Information and Communications Technology Policy of 2016*

The main objective of the National Information and Communications Technology Policy of 2016 is to accelerate socio-economic development with the potential to transform Tanzania into an ICT-driven middle-income economy and society. Specifically, the policy aims to (a) strengthen the legal and regulatory environment that facilitates the acquisition, utilisation, and development of ICT in Tanzania; (b) have reliable, interoperable, and ICT infrastructure that is sustainable and facilitates widespread nationwide connectivity; and (c) strengthen management and promote efficiency in spectrum allocation and utilisation that guarantees its availability and competition in both urban and rural areas.

### 2.2.2  The Legal Framework

**Table 2.1: The Legal Framework for e-Government Subsector**

| Act/Regulation | Description |
|---|---|
| e-Government Act of 2019 | The Act provides the basis of a legal and regulatory framework for the development and implementation of ICT systems developed internally by the government. It outlines the regulatory requirements for the internal development or acquisition of ICT systems in the government at all stages, including initiation, requirements gathering, development, testing, commissioning, deployment, support and maintenance. |
| Public Procurement Act (R.E) of 2022 | An Act to make better provisions for the regulations of public procurement, to provide for the repeal of the Public Procurement Act of 2004 and re-enact the Public Procurement Act and consequential matters and to provide for other related matters. Regarding the cost-effectiveness of the developed ICT application systems, this Act aims to ensure transparency, accountability, and efficiency in the procurement processes. Also, it seeks to promote fair competition among bidders. |
| e-Government General Regulations of 2020 | The regulations intend to address several matters, including management and operations of e-government data management, infrastructure and system requirements, and management and governance of e-government security.

These regulations also outline guidelines for internal acquisition and deployment of e-Government projects. On the other hand, the regulations emphasise the importance of collaboration and coordination to ensure smooth integration of e-government services across different government departments. |

*Source:* Auditors' Review of Acts/Regulations on ICT Systems, 2024

### 2.2.3  National Goals and Objectives

**National Development Vision 2025**

The National Development Vision 2025 aims at promoting Information and Communication Technologies (ICTs) with the objective of achieving

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competencies and competitiveness. In this case, ICT is termed to be the driving force for the realisation of the Vision, and therefore, it has to be promoted in such a way that, it benefits all social groups to facilitate the acquisition of the basic needs of the people, increase productivity and promote competitiveness. This vision is concurrent with the current growth in the development of ICT systems in the public sector, which aims to improve efficiency and productivity.

**National 5-Year Development Plan (2021/22-2025/2026)**

The National 5-Year Development Plan aims to promote innovation and the application of ICT in service delivery. The plan also requires key actors in the communication sector to speed up the deployment of ICT infrastructure, thus making the digital revolution possible.

### 2.2.4 The Strategies for Overseeing the Internal Development of ICT Systems in the Public Sector

**Table 2.2: Strategy for Overseeing Internal Development of ICT Systems in the Public Sector**

| Strategy | Description |
|---|---|
| e-Government Strategy of 2022- 2027 | The strategy provides an important stage for the development of the e-government sector and for the country to become more digital, data-centric, and business-driven. This strategy sets the means, objectives, and targets in coordination, oversight, and promotion of e-Government initiatives and enforcement of compliance of e-Government; establishing related policies, laws and regulations; instituting appropriate ICT governance structure; improving Government Business Processes; acquiring and implementing various application systems to support Government internal operations; and establishing e-Government infrastructure. |
| The National ICT Policy Implementation Strategy of 2016/17 – 2020/21 | Tanzania National ICT Policy of 2016 Implementation Strategy was prepared to translate the National ICT Policy of 2016 statements into actions, covering five years from 2016/17 to 2020/21. This policy focused on creating an enabling environment to facilitate the acquisition, utilisation, and exploitation of ICT for social and economic development in Tanzania. In addition, this strategy offers a fundamental strategic direction for enhancing the ICT Sector that is responsible for implementing ICT Policy. |

| Strategy | Description |
|---|---|
| Strategic Plan of *e-*Government Authority of 2021/22-2025/26 | The e-Government Authority strategies focus on aligning to enhance and sustain the provision of e-government services by public institutions as well as compliance with policies, laws, regulations, standards, and guidelines related to e-government initiatives in public institutions. |

*Source:* Auditors' Analysis of Strategy for Internal Development of ICT System in the Public Sector, 2024

The internal development of ICT systems is guided by 4 main specific guidelines cascaded from the planning stage to the project closure and post-implementation phase. The guidelines are meant to provide the standards and means of ensuring that, the developed ICT systems comply with the requirements of the e-Government Act of 2020 and its Regulations. The guidelines are presented in **Table 2.3** as follows:

**Table 2.3: Guidelines for Internal Development of ICT System**

| Guideline | Description |
|---|---|
| Standards and Guidelines for Government ICT Project Implementation of 2020 | These Standards and Guidelines aim to provide guidance on managing ICT Projects to ensure successful implementation, not vendor-driven, no duplication of efforts, risks are managed at an acceptable level, benefits are realised, and resources are optimised.[7] |
| Standards for Development, Acquisition, Operation and Maintenance of e-Government Application of 2022 | This document describes the standards that apply when developing, acquiring, operating and maintaining applications in public institutions and outlines specific standards that must be adhered to when building applications. The application development, acquisition, operation and maintenance standards document is directed at application developers who will be designing, developing, and maintaining applications for their institutions. |
| Guidelines for Development, Acquisition, Operation and Maintenance of e-Government Application of 2020 | The Guidelines provide directives to all public institutions during the application development, acquisition, operation, and maintenance activities to have quality and sustainable applications that support |

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[7] PO-PSMGG-Standards and Guidelines for Government ICT Project Implementation – Document Number eGA/EXT/BSA/008 (2020)

| Guideline | Description |
|---|---|
| | the enhancement of internal business operations and service delivery.[8] |
| Guideline for the Proper, Correct and Safe Use of Equipment, Data, and ICT Systems in the Government of 2022. | This Guideline aims to establish a procedure for the optimal, correct, and safe use of the government's Tools, Data, and ICT systems. In particular, the guideline intends to advise public institutions on how to use and maintain the safest, most accurate, and most effective ICT systems and advise them to adhere to the requirement of having few information-sharing systems in the government.[9] |
| e-Government Application Architecture - Standards and Technical Guidelines of 2017 | The Application Architecture aims to minimise complexity and encourage reusability, flexibility and extension, simplicity and ease of use, adherence to open standards, service-oriented technology, and vendor independence to maximise return from the ICT investments. Furthermore, this aims to reduce the time, money, and complexity involved in developing, deploying, maintaining and enhancing the application eco-system in the future.[10] |

*Source*: Auditors' Review of Guidelines for Internal Development of ICT system, 2024

## 2.3   The Roles and Responsibilities of Key Actors

The key actors in the development of ICT systems act at different levels in order to ensure that, the Government meets its objective of streamlining eGovernment services. The following table presents the roles of each of the actor.

**Table 2.4: The Roles and Responsibilities of Key Actors**

| Actor | Roles |
|---|---|
| e-Government Authority (e-GA) | The e-Government Authority is responsible for ensuring that public institutions acquire ICT systems in a cost-effective manner by issuing guiding instruments and monitoring their compliance. Specifically, the e-Government Authority has issued guidelines for the acquisition, operations, and maintenance of e-Government applications, as well as ICT Project Review Criteria and Government ICT |

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[8]  PO-PSMGG-Guidelines for Development, Acquisition, Operation, and Maintenance of e-Government Application – Document Number Ega/EXT/APA/006 (2020).

[9] Ofisi ya Rais – Menejimenti ya Utumishi wa Umma na Utawala Bora - Mwongozo wa Matumizi Bora, Sahihi na Salama wa vifaa, Data, na Mifumo ya Tehama Serikalini (2022).

[10] E-GA - e-Government Application Architecture – Standards and Technical Guidelines - Document Number eGA/EXT/APA/001.

| Actor | Roles |
|-------|-------|
| | Project Implementation Guidelines. These guidelines have provided a set of criteria and checks that have to be observed by public institutions before and after acquiring ICT Systems, including the observance of costs while acquiring the systems. |
| President's Office - Public Service Management and Good Governance (PO-PSMGG) | The President's Office - Public Service Management and Good Governance (PO-PSMGG) oversees e-government and ICT systems implementation in public institutions, establishing policies, laws, and regulations, monitoring government business processes, and establishing infrastructure to link e-government objectives with National Development Goals.[11] Specifically, PO-PSMGG is responsible for developing policies and standards that are instruments for overseeing the acquisition of ICT systems in the government, such that they are done in a cost-effective manner and that they are implemented efficiently. |
| Ministries, Departments and Agencies (MDAs) | The e-governance initiatives are to embrace ICT in executing daily operations and services by using a networked computer with internet access. Therefore, public institutions are required to set up ICT Administration Units in their MDA offices. This is a potential platform to improve the coordination of ICT activities, capacitate staff with adequate ICT skills and equip the ICT Division to accommodate challenges that come with ICT applications. |
| Citizens | These are direct and indirect beneficiaries of the developed ICT systems implemented by public institutions. |

*Source:* Auditors' Analysis of the Roles and Responsibilities of Key Actors, 2024

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[11] https://www.utumishi.go.tz

**Figure 2.1: Relationship Among Key Stakeholders in the Management of Internally Developed Government ICT Systems[12]**
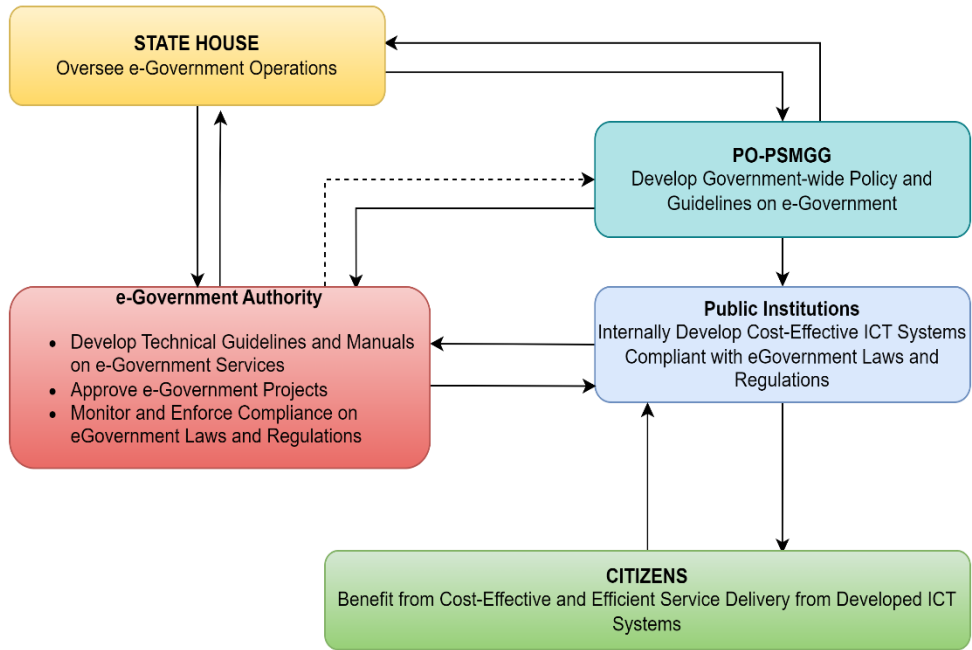


Source: Auditors' Analysis of Acts, Policies and Guidelines on e-Government, 2024

## 2.4 Resources

### (a) Financial Resources

e-GA is required to secure financial resources to oversee the internal development of ICT systems in public institutions—funds from government subvention finance the Annual Budget of the e-Government Authority. The details of the annual budget are provided in **Figure 2.2.**

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[12] Currently the eGovernment Authority reports to Permanent Secretary - State House

**Figure 2.2: The Disbursed Funds at e-Government Authority (Billions TZS)**
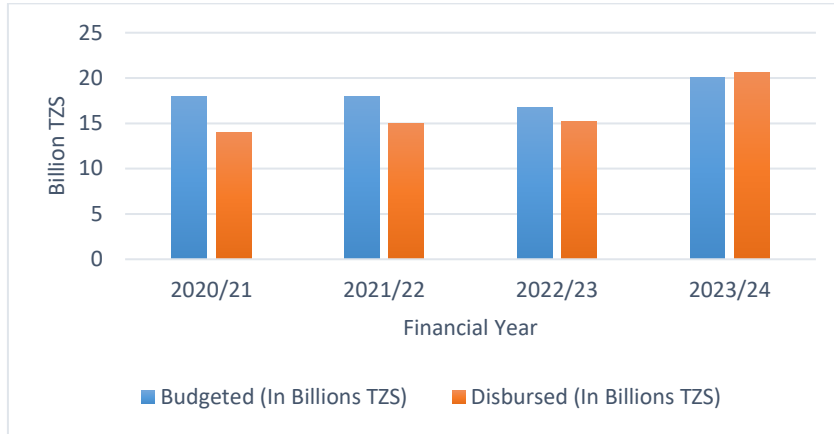


*Source:* Auditors' Analysis on e-GAs MTEF and Annual Financial Reports, 2024

### (b)  Human Resources

The human resources at e-Government Authority is comprised of employees who undertake different roles in overseeing the internal development and implementation of ICT systems in public institutions. In this case, the staffing portfolio consists of a total of 221 professionals in information and communication technology and supporting staff. The staffing profile is presented in **Figure 2.3**.

**Figure 2.3: The Staff Category by Profession at e-GA as of June, 2022**
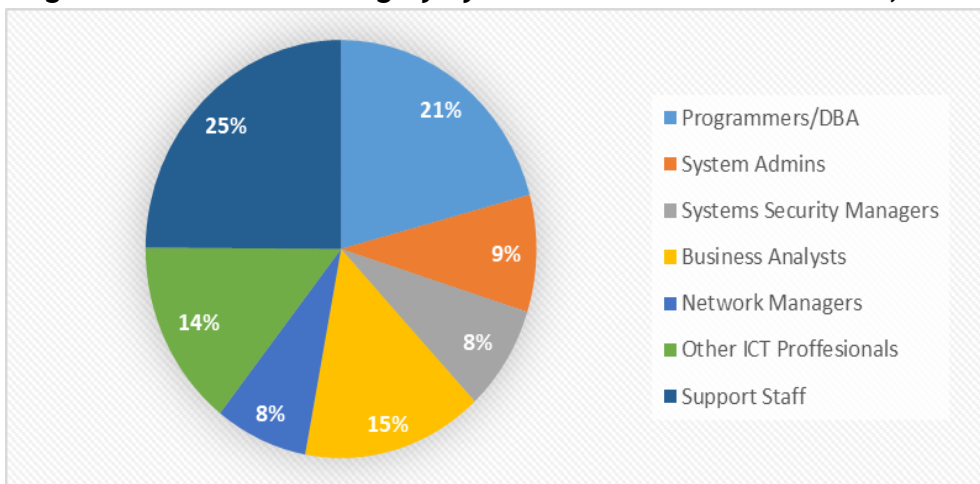


*Source:* Auditors' Review of e-GA Staffing Documents, 2023

## 2.5 The Processes Involved in Internal Development of ICT Systems with Cost Consideration

This part describes the processes involved in the internal development t of ICT Systems and the considerations of costs during the acquisition of the respective ICT Systems. In this respect, the cost considerations are divided into two approaches. The first approach is when the system is acquired through developing from scratch, which is referred to as a System Developed from Scratch (SDS), and the other approach is when the system is acquired Off-The-Shelf (OTS).

### *Stage 1: ICT Project Initiation/Planning*

The initiation phase is critical for both SDS and OTS approaches. During this phase, a public institution identifies the high-level requirements, goals, and challenges involving stakeholders from across the organisation, from business process owners to the ICT team. A feasibility study may be conducted to assess the project's technical, economic, legal, and operational viability, followed by detailed cost estimates for development, implementation, and maintenance. The output of this phase includes high-level planning documents and conceptual designs of the planned system.

**Cost Considerations:**

- Total cost of ownership should be assessed, considering both upfront and long-term costs;
- The source of financing for both the acquisition and long-term operation needs to be identified; and
- Ensure the system does not duplicate the existing solutions.

**Required Documents:**

At this stage, the final output is the document that consists of high-level plans and conceptualisation of the planned system to be acquired.

**Table 2.4: The Required Output during Project Initiation/Planning**

| Project Cost | Required Document |
|---|---|
| Project Cost > TZS 200,000,000 | Feasibility Study |
| 50m< Project Cost<200m | Project Proposal |
| Project Cost < 50m | Project Concept Note |

*Source:* Auditors' Analysis of the Review of ICT Project Initiation Phase, 2024

## *Stage 2: Requirements Gathering and Analysis*

At this stage, the focus is on collecting and analysing functional and non-functional requirements. In this case, business analysts are responsible for identifying and documenting these requirements through stakeholder engagement and validating them. Hence, the requirements form the basis for system design and implementation.

**Cost Considerations:**

- Evaluate the total cost of gathering the requirements, ensuring all requirements are captured and validated; and
- All stakeholders must be involved to ensure that no essential requirement is missed.

The expected output includes a Business Case or Software Requirements Specifications (SRS) document detailing the system's functional and non-functional requirements.

## *Stage 3: Software Selection and Acquisition*

For the Off-the-Shelf systems stage, this translates the identified needs into a structured framework. After identifying requirements, the next step is to select the appropriate software and hardware components. This includes procuring software that meets the requirements and acquiring necessary physical components such as servers, terminals and other peripheries.

**Cost Considerations:**

- Evaluate the total cost of the software; and
- Compare various options to ensure the selected solution meets business requirements at the most affordable price.

The output at this stage is the final type of system or software solution and features required by the organisation, which might be included in the evaluation report. This may include the actual name of the software and specific functionalities or modules that are required.

*Stage 4: System Design*

System design focuses on creating a conceptual framework for how the system will operate, detailing how users will interact with the system. There are two levels: High-Level Design (HLD) and Low-Level Design (LLD). In this regard, HLD involves developing system architecture, database design, and defining the technologies used, while LLD dives deeper into the specifications of each system module.

**Cost Considerations**

- Select technologies that support scalability, maintainability, and integration. Choose open-source solutions where feasible; and
- Choose hardware that is cost-effective and vendor-neutral to avoid future vendor lock-in.

The output of this phase is the System Design Document, which maps requirements into detailed technical specifications for the development team.

*Stage 5: System Configuration*

In case the system is acquired Off-The-Shelf (OTS), the system configuration phase follows, involving setting up hardware, software, and network components to ensure everything works together seamlessly. This stage focuses on configuring the system's operating system, drivers, and other system-level settings.

**Cost Considerations:**

- All stakeholders must be involved in system configuration to ensure that, it meets the business needs; and
- Accurate documentation of the software's features and configurations is critical.

The output is a configured version of the system, ready for testing and deployment.

### *Stage 6: System Development and Testing*

In this phase, business requirements are translated into code for systems developed from scratch. In this case, programmers and analysts work together to create a functional system. However, testing is equally important and involves several types: unit testing, integration testing, and user acceptance testing (UAT).

**Cost Considerations:**

- The costs of programming and testing must be carefully calculated; and
- Ensure all tests, such as unit tests and integration tests, are completed and any bugs are fixed.

The output of this phase is the tested and approved source code, which is ready for deployment. Hence, test results and deployment notes are documented.

### *Stage 7: Implementation (Deployment)*

This phase focuses on deploying the system into the live environment, ensuring it integrates with the existing processes, and delivering the intended benefits. In this case, security measures and initial testing are critical during the implementation. It is also important to train users to operate the system effectively.

**Cost Considerations:**

- Consider the cost of deployment and ensure that all functionalities of the system are utilised; and
- Deploy the system in a secure and reliable environment.

The expected output is a fully functional ICT system or software ready for use by business process owners.

## Stage 8: Post-Implementation Review

After deployment, continuous monitoring and evaluation are essential for tracking the system's performance in order to ensure it meets the expectations of the users. The evaluation comprises evaluating uptime, error rates, and overall functionality and conducting a cost analysis to ensure financial efficiency.

**Cost Considerations:**

- Evaluate the cost of services before and after deployment;
- Assess the number of transactions, human resources, and time taken to process tasks, comparing pre- and post-deployment metrics; and
- Ensure the system operates within the projected budget and identify any cost optimisation opportunities.

The output includes post-implementation notes detailing any issues, challenges, or change requests.

## Stage 9: Maintenance and Support

Ongoing maintenance and support are crucial for ensuring the ICT system remains functional, secure, and efficient. This means that, regular updates, bug fixes, and user support are part of this stage. Also, it involves addressing performance issues to maintain system availability.

**Cost Considerations:**
- Account for ongoing licensing costs and support services; and
- Ensure that, the system is regularly updated and well-supported.

The output is maintenance and support documentation detailing the support provided and any system issues that were addressed.

**Figure 2. 4: The Processes for Internal Development of ICT Systems among Public Institutions**
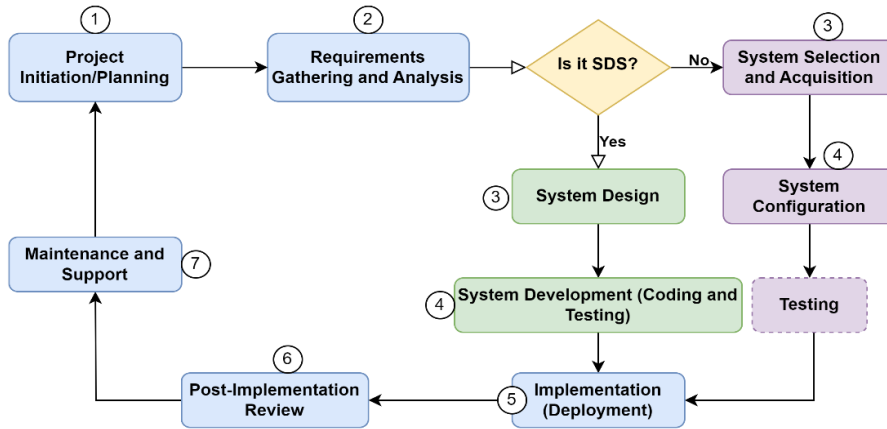


Colour Key
- Off-The-Shelf (OTS)
- System Developed from Scratch (SDS)
- Both SDS and OTS

*Source:* Auditors' Analysis of Guidelines and Certified Information System's Audit Review Manual, 2024
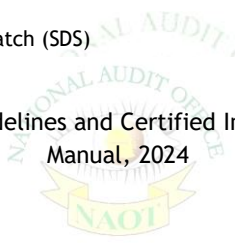
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# CHAPTER THREE

## AUDIT FINDINGS

### 3.1    Introduction

This chapter presents audit findings on the assessment of the cost-effectiveness of internally developed Government ICT Systems under the e-Government Authority (e-GA). The findings present the extent of the problem based on four specific audit objectives as described in Section 1.3.1 of this Report. It covers the extent to which public institutions acquired the systems that are cost-ineffective, the effectiveness of public institutions in implementing cost-control measures during project planning and acquisition, the development and deployment of ICT Systems, and the maintenance of the acquired systems. The following are the details of the findings:

### 3.2    Public Institutions Acquiring and Hosting ICT Systems which are not Cost-Effective

The audit noted that the e-Government Authority (e-GA) demonstrated a commitment by regularly reviewing the information received on government software assets. In this regard, the initiatives to establish the Government ICT Services Portal (GISP) have made it possible for e-GA to be informed of the developed government ICT systems, hence improving transparency in government operations.

Moreover, through the GISP platform, e-GA can easily access information and be informed of the ICT services offered across public institutions. Generally, e-GA has played a crucial role in modernising government operations to realise the value for money in the delivery of ICT services to citizens. However, the audit team identified issues that need to be addressed in order to ensure that, public institutions acquire and host cost-effective ICT systems.

### 3.2.1 Public Institutions Acquiring Systems with Relatively High Financial Costs

A review of the total costs of acquisition of the ICT systems from the visited entities found that there were public institutions that owned systems that were not cost-effective. This practice is contrary to paragraph 1.9.2 of the Government ICT Project Review Criteria of 2014, which requires public institutions to acquire systems with costs that reflect the market value. In this case, public institutions were expected to acquire ICT systems that are cost-effective and reflect market value.

On the other hand, an analysis was done to identify outliers, and the audit team noted that there were relatively expensive systems deployed in public institutions. In-house and outsourced systems were considered to provide a country-wide assessment of the cost of ICT systems. The assessment of the costs was done by categorising costs into three groups, namely, in-house and outsourced systems separately, and then the combination of both of them. The results of the analysis are presented as follows:

### (a) Cost Assessment for Internally Developed ICT Systems

The assessment of the internally developed systems using the outlier detection method and Python analytical tools identified relatively expensive internally developed systems within the Government. The results indicated that a total of 4 out of 111 internally developed and completed ICT systems from 4 different institutions had relatively high financial costs. The results of the cost assessment for internally developed systems are indicated in **Table 3.1**.

**Table 3.1: The ICT Systems with Relatively High Total Acquisition Costs**

| Project Name | Institution Name | Total Cost (In billion TZS) |
|---|---|---|
| Mfumo wa Uhasibu Serikalini (MUSE) | Ministry of Finance | 8.8 |
| Electronic Marking System (e-MAS) | National Examinations Council of Tanzania (NECTA) | 5.3 |
| Tanzania Instant Payment System (TIPS) | Bank of Tanzania | 4.9 |
| Electronic Ticketing Platform (ETP) | National Internet Data Centre | 4.5 |

*Source:* e-Ga's ICT Projects' Data Spreadsheet and GISP, 2024

**Table 3.1** indicates that, four (4) institutions acquired ICT systems with the highest cost of acquisition. The most expensive among 5 systems was Mfumo wa Uhasibu Serikalini (MUSE), which was acquired at the total cost of TZS 8.8 Billion. Further analysis of the costs for internally developed systems shows that, the average cost for all internally developed systems was an amount of TZS 459.4 million.

Moreover, an analysis of costs for acquired systems involved grouping and ranking the total portfolios of the ICT systems from the reviewed ICT Project spreadsheets from the e-Government Authority. The audit team established a list of the top 10 public institutions that acquired internally developed ICT systems at the highest cost combined. The results of the analysis are presented in **Figure 3.1**.

**Figure 3. 1: The Cost Overview of the Internally Developed Government ICT Systems**
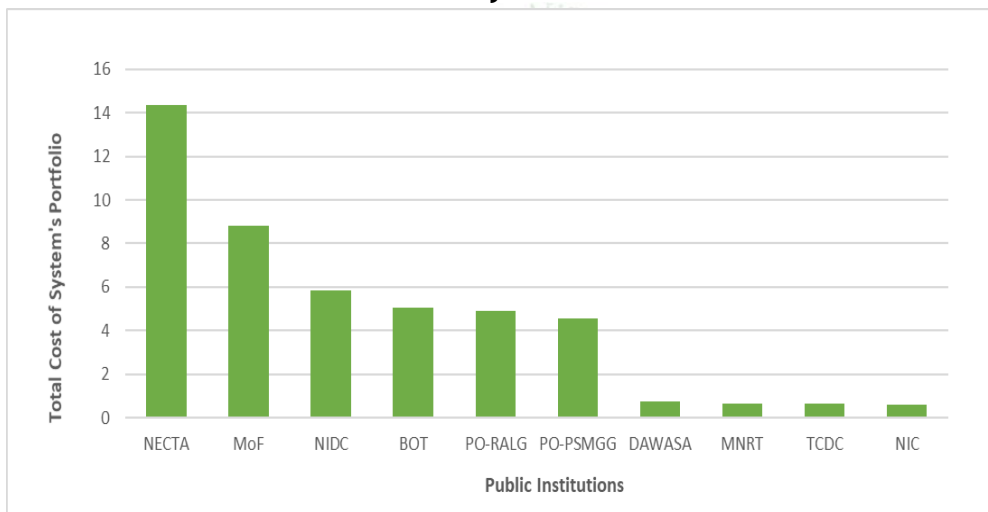


*Source:* ICT Projects Spreadsheets, 2024

The result of the analysis indicates that, the Bank of Tanzania was the leading institution in the country with an ICT system portfolio with the highest financial costs. In this case, the total costs of ICT systems at the Bank of Tanzania accounted for an amount of TZS 14.3 billion. The next among the top ten was the Ministry of Finance, with a portfolio of internally developed ICT Systems amounting to TZS 8.8 billion. Further analysis indicates that more than 50% of the internally developed systems were acquired at a cost equal to or less than an amount of TZS 50 million.

### (b) Cost Assessment for Outsourced Systems

The audit team assessed the costs of the ICT systems in public institutions by analysing the outsourced systems separately. By using the outlier detection method, the team computed the upper and lower limits and identified the outlier ICT systems with extreme costs outside the normal acquisition costs. The results indicated that, the Government Network (Gov-Net) at e-Government Authority (e-GA), categorised as a network system, was acquired at a relatively higher cost among the outsourced systems assessed. In this regard, the system was acquired at a cost of TZS 41.7 Billion, with the second-ranked cost in this category being the Agricultural Routine System at the Ministry of Agriculture, which was acquired at a total of  TZS 40 Billion.

The assessment of the costs further revealed that the average cost for outsourced systems was TZS 1,318,470,323. Further analysis revealed that, 50% of the systems were developed at a cost equal to or less than TZS 142,760,335.

### (c) Cost Assessment for both Inhouse and Outsourced Systems Combined

According to Section 2.2.1 (iii) of the Guidelines for Operationalisation of Institutional ICT Steering Committees of 2020, it is stated that, the Steering Committees have the role of reviewing and providing advice on ICT investment portfolios and priorities with a view to attaining value delivery.

Moreover, the audit team assessed the costs of the ICT systems among public institutions by combining both in-house and outsourced systems. The results indicated that, the Government Network (Gov-Net) at e-Government Authority (e-GA), categorised as a network system, was the most expensive system with the highest cost among the outsourced and in-house systems. The assessment of the costs further indicated that, the average cost for both internally developed and outsourced systems combined was an amount of TZS 781.1 million.

**Figure 3. 2: The Average Costs of Acquisition for Internally Developed and Outsourced Systems**
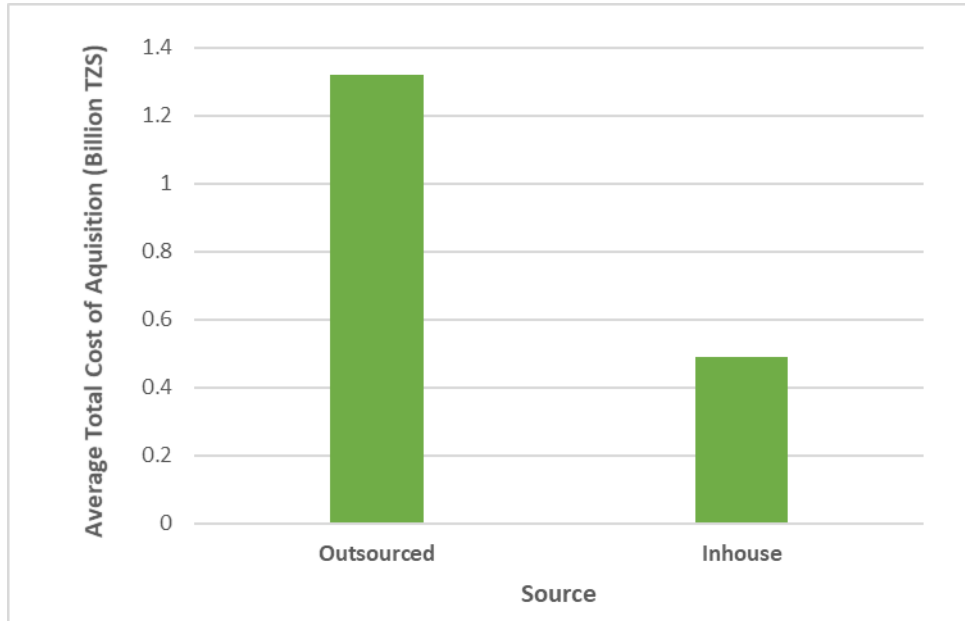


*Source:* Auditors' Analysis of Total Costs of Acquisition, 2024

**Figure 3.2** indicates the average costs for internally developed and outsourced systems. Generally, the analysis of costs for a total of 146 outsourced systems shows that, they were more expensive than internally developed systems. In this regard, the outsourced systems were acquired at an average of TZS 1.3 billion, while the internally developed systems (in-house) were acquired at an average cost of TZS 459.4 million.

Moreover, the overall cost structure for the systems was assessed in detail during this audit. The results indicated that, different systems in the Government are currently hosted and being used, having been acquired at different costs and operating at different operational efficiencies, with some being cost-effective whereas others were not. The factors for their existence and other conditions are assessed in the subsequent sections of this report.

### 3.2.2 Limited Information on Financial Cost of ICT Systems in the Public Institutions

The audit team noted that, public institutions were not providing complete and accurate financial cost data to the Government ICT Services Portal

which was maintained by the eGovernment Authority. On the other hand, the e-Government Authority (e-GA) did not ensure the accuracy of cost data of the deployed government ICT systems as submitted by public institutions. This practice was contrary to section 2.2.4.1 of the Standards for Development, Acquisition, Operation, and Maintenance of e-Government Applications of 2022, which requires analysis that provides cost-benefit justification with regard to the expenses of an application.

However, a review of the Government ICT Services Portal (GISP) indicated that, the documented costing aspects were limited to License Fees, Hosting, Support, and Maintenance/Upgrade costs while ignoring other aspects such as costs in requirements gathering, software selection and acquisition, system design, system configuration, system development and testing. The documented cost-related aspects recorded from GISP for 438 systems traced in the GISP Project register are summarised in **Figure 3.3**.

**Figure 3.3: Documented Costing Aspects in GISP 2024**
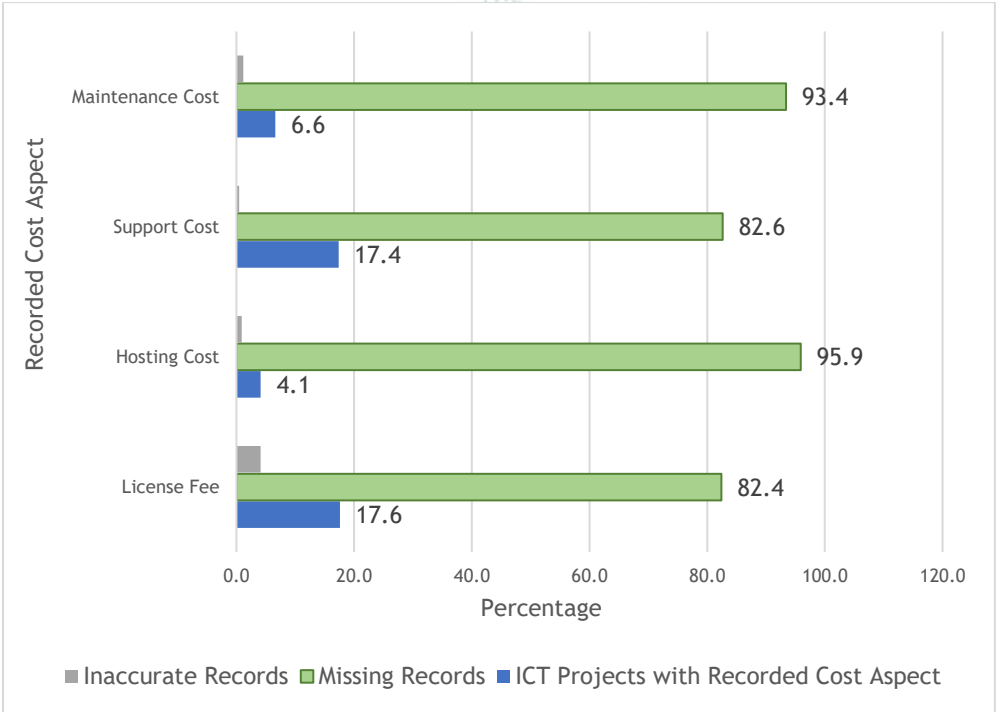


*Source:* Auditors' Analysis of the Government ICT Services Portal GISP, 2022

From **Figure 3.3**, it is found that, a large number of the registered ICT projects in GISP have missing records for the identified costing aspects. In

this case, out of 438 recorded ICT projects, 82.4% have missing records for the license fee, 95.9% for hosting costs, 82.6% for support costs, and 93.4% for maintenance/upgrading costs. This implies that, the financial aspects of the documented ICT initiatives were not adequately monitored.

On the other hand, it was noted that, regardless of the approval made through different managerial levels of the respective public institutions, there were no defined procedures to assist the e-Government Authority in verifying the accuracy of costing data to reflect the actual conditions on the ground. The audit team noted the existence of incorrect data on costs for the acquired systems regardless of the efforts made by the e-Government Authority to remind public institutions of the need to submit the correct and complete financial data.

It was further noted that, the observed insufficient documentation of the available government ICT assets was due to insufficient assessment reviews of the existing ICT systems across public institutions.  The proportion of actual assessment reviews made compared to planned assessments based on the number of recorded ICT projects in the GISP from the year 2020 to the year 2023 is summarised in **Figure 3.4**.

**Figure 3.4: The Percentage of Conducted ICT Project Assessment Reviews**
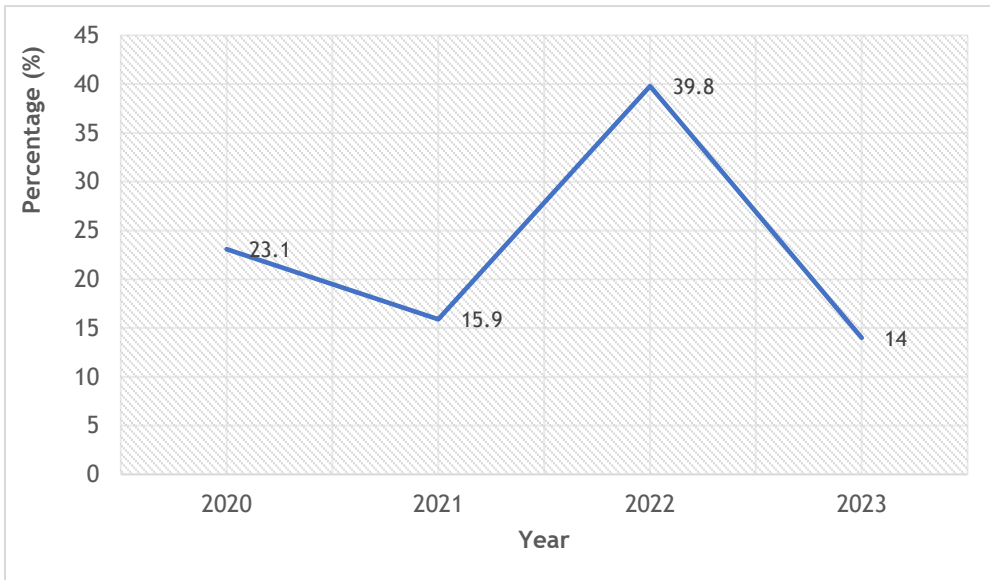


*Source:* Auditors' Analysis of the Data from e-GA, 2024

**Figure 3.4** indicates that the percentage of actual assessments of Government ICT projects declined from 23.1% to 15.9% between the year 2020 and the year 2021 compared to the planned assessments, with an increase of 39.8% in the year 2022. Also, it significantly declined to 14% in the year 2023.

Moreover, in an interview with one of the officials from the Directorates of Information and Communication Technology (DICT) in the visited public institutions, it was highlighted that, the importance of assessment reviews of the deployed ICT systems is not only limited to verifying that, they are in compliance with relevant regulations or standards but also help in evaluating the overall performance and efficiency of the deployed ICT systems.

However, the audit team noted that, there were insufficient assessment reviews of the established ICT projects in the visited public institutions. It was revealed that, only 2 out of 18 ICT projects in the visited public institutions had assessment reviews conducted. This suggests the need to thoroughly assess the deployed ICT systems across various government entities. Similarly, a review of the assets and documents from the e-Government Authority found that, there was inadequate enforcement on the public institutions on the review of project costs.

Furthermore, the assessment found that the e-Government Authority, which was supposed to ensure that there were proper records of costs and other financial details, did not adequately undertake reviews of the entities. As a result, this led to the government being unable to accurately establish the total cost of ICT systems, which is one of the key strategic information for the government.

## 3.3    Inadequate Consideration and Implementation of Cost Control Measures in Planning and Acquisition of ICT Systems

It has to be noted that, cost control considerations in project initiation and planning are essential for setting realistic budgets, managing financial risks, and allocating resources efficiently. In systems development, where projects often involve complex technologies, tight schedules, and evolving requirements. Therefore, the inability to adequately address cost issues in

a timely manner can lead to significant challenges. The following were the noted issues in the visited public institutions:

### 3.3.1 Inadequate Identification and Consideration of Costs Associated with Software Acquisition

Regardless of the established standard method of estimating the cost as per section 2.2.4.1 of the Standards for Development, Acquisition, Operations, and Maintenance of Government Applications of 2022, which requires an analysis to provide cost-benefit justification regarding the expenses of an application, which comprise of procurement, project-specific, start-up, and operation costs.

However, the audit team found that, there was inadequate adherence to the stipulated standards on cost estimation, which requires public institutions to identify funding requirements and sources while planning to acquire respective ICT Systems. Nevertheless, this audit identified factors that contribute to cost based on the systems from selected entities as explained as follows:

### (a) Inconsistent Cost Estimation Method Used in Public Institutions

In a review of project concept notes in the visited public institutions, it was observed that, the cost estimation methods were not clearly identified from the budget and other cost documentation. It was further noted that, there were inconsistent methods on how the public institutions calculated specific costs while generating costs, which was expected to provide assurance for the decision-makers on whether the presented costs were reasonable to be accepted. For instance, there was unclear guidance on the establishment of costs for man-days, which was a major cost component in the development activities. Likewise, some cost items in the budgets and appraisals did not indicate whether the estimated costs were market-based, expert consultations, historical data or legislature-based costs.

Moreover, in an Interview with one of the officials responsible for the preparation of budget documents, it was revealed that, the main reason for inconsistent methods in cost estimation was the absence of a standardised framework for the estimation of costs when planning or appraising ICT Projects. As a result, the planned budgets by the public institutions were

less than the actual costs incurred (Refer to Table 3.16) in acquiring and hosting the respective systems.

## (b) Inadequate Consideration of the Factors Contributing to Long-Term Costs

According to a review of 18 ICT systems from 5 visited public institutions, indirect costs, such as utilities and rental costs, were seldom taken into account and were found to be documented in 2 out of 18, equivalent to 11% of the ICT systems. Long-term costs, such as operational and maintenance costs, were taken into account in 3 out of 18 ICT systems, equivalent to 16.7% of the assessed ICT systems. These results are summarized in **Table 3.2**.

**Table 3.2: Cost Consideration During Development of the ICT Systems**

| Name of the Public Institution | Name of the ICT Deployed Systems | Cost Consideration | | |
|---|---|---|---|---|
| | | Long-Term Costs | Direct Costs | Indirect Costs |
| e-Government Authority (e-GA) | GISP | No | No | No |
| | m-Gov | No | No | No |
| Ministry of Finance (MoF) | MUSE | No | Yes | No |
| | CBMS | Yes | Yes | No |
| | GSPP | No | No | No |
| Ministry of Health (MoH) | UCS | No | Yes | No |
| | THPRS | No | Yes | No |
| | NSMIS | No | Yes | No |
| | eIDSR | No | Yes | No |
| Ministry of Lands, Housing and Human Settlements Development | ILMIS | Yes | Yes | No |
| | ILCMS | No | Yes | No |
| PO-RALG | IMES | No | Yes | No |
| | PLANREP | No | Yes | No |
| | TPLMIS | No | Yes | No |
| TRA | ITAX | No | No | No |
| | IDRAS | Yes | Yes | No |
| | TEMS | No | No | No |
| | ECTS | No | Yes | No |

*Source:* Auditors' Analysis of Data from the Visited Public Institutions, 2024

In addition, further analysis was done on 3 ICT projects which considered long-term costs, namely, CBMS, IDRAS, and ILMIS (See **Table 3.2**), to

determine recorded incidences of identification and consideration of the long-term cost components.

The analysis found that the entities acquiring the ICT systems emphasised direct costs incurred during project planning more than other costs. This was evident in 13 out of 18 systems, which were assessed as equivalent to 72% of the systems. None of the 18 systems which were assessed had considered indirect costs during the planning and budgeting stage. A summary of the recorded incidences of the mentioned ICT systems is presented in **Table 3.3**.

**Table 3.3: Incidences of Long-Term Costs Identification and Consideration**

| Cost Component | Incidences |
|---|---|
| Infrastructure (Hosting etc.) | 6 |
| License Costs | 8[13] |
| Administrative Costs | 0 |
| Hardware Upgrade Costs | 5 |
| Scheduled Maintenance | 12 |
| Data Storage and Backups costs | 9 |

*Source:* Auditors' Analysis of the ICT Systems' Budget in the Visited Public Institutions, 2024

Table 3.3 indicates that various components contribute to long-term costs. In this case, scheduled maintenance was recorded as the most frequent (12 incidences), whereas administrative costs were not identified as an identifiable cost in any of the selected systems.

### 3.3.2 Inadequate Engagement of System Stakeholders

In a review of stakeholders' meeting minutes and an interview with one of the officials responsible for planning the system acquisition, it was revealed that potential stakeholders were not engaged adequately in the preparation of system requirements for the developed systems. However, this practice was contrary to section 25 (a)(ii) of the e-Government Act of 2019, which requires public institutions to involve relevant stakeholders in identifying the system requirements to ensure sustainability, reliability, continuity and availability of the newly developed ICT Systems.

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[13] Case out of the applicable incidences of licenses

Therefore, internal stakeholders, such as quality assurance, training teams, and other top institutional managers, were missing in the respective system development phases.

**Figures 3.5** and **3.6** indicate the extent of engagement of internal and external stakeholders during the planning and development of the ICT Systems in the visited entities.

**Figure 3.5: The Extent of Engagement of Internal Stakeholders**
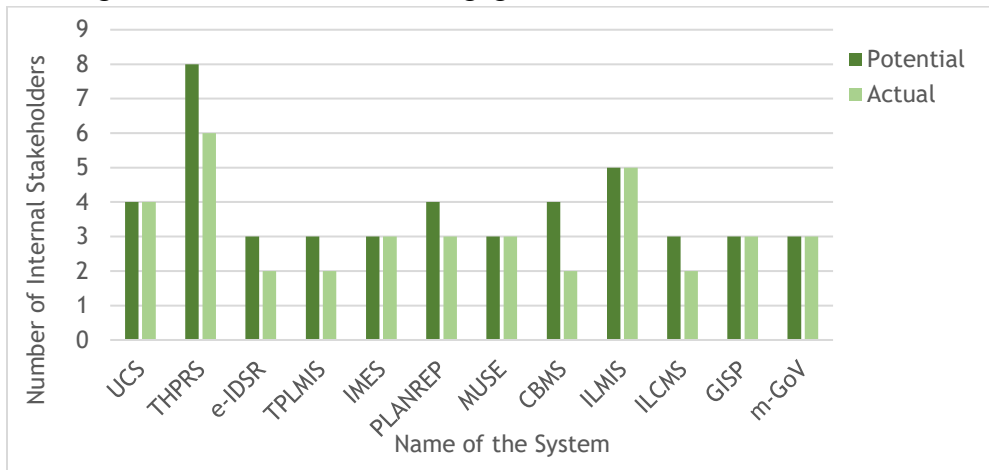


*Source:* The Auditors' Analysis of Data on ICT System Requirement Specifications in the visited Public Institutions, 2024

**Figure 3.5** indicates that, there was inadequate engagement of potential internal stakeholders. The internally missing stakeholders included quality assurance, training teams, and top institutional managers in respective system development phases. In this regard, 6 out of 12 ICT systems had less engagement of actual stakeholders than the pre-determined number of potential stakeholders. These systems were TPHRS, e-IDSR, TPLMIS, PLANREP, CBMS, and ILCMS.[14] The extent of engagement of external stakeholders from the visited entities during the planning and development of the ICT Systems is indicated in **Figure 3.6**.

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[14] Data on 6 ICT systems were not recorded by respective entities

**Figure 3.6: The Extent of Engagement of External Stakeholders**
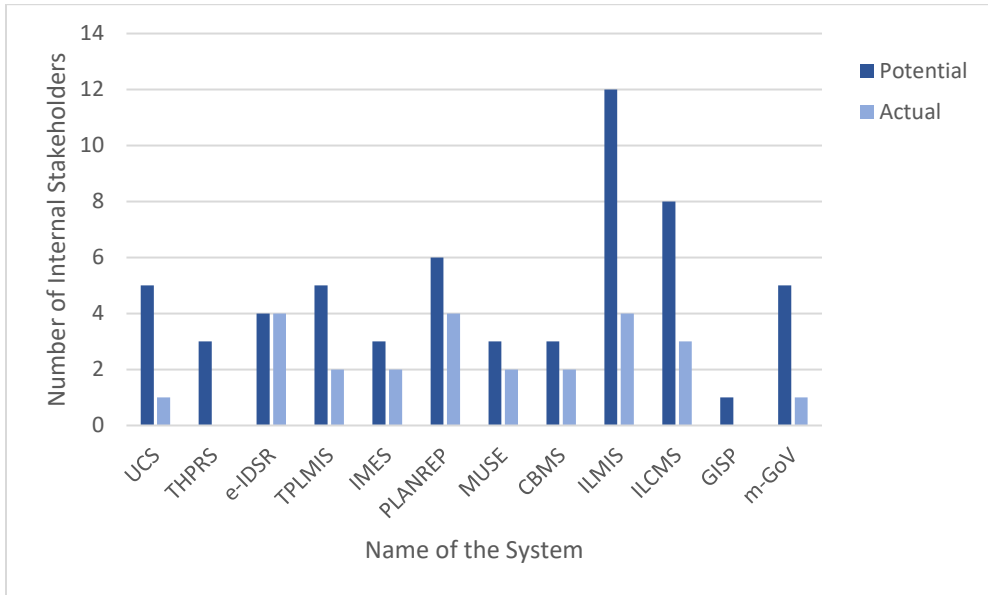


*Source:* The Auditors' Analysis of Data on ICT System Requirement Specifications in the visited Public Institutions, 2024

**Figure 3.6** indicates that, external stakeholders were inadequately engaged. In this regard, 11 out of 12 ICT systems had less engaged external stakeholders than the required engagement level. These were all assessed ICT systems with the exception of e-IDSR, which had all potential external stakeholders engaged.[15]

Moreover, the audit found that, inadequate engagement of stakeholders was linked to inadequate consideration of stakeholders that were supposed to be involved during requirements gathering. Similarly, the audit found that, there was inadequate coordination among stakeholders when the projects were to be appraised. In this case, public institutions did not have adequate procedures to engage stakeholders in such a way that some of the key stakeholders were left in the appraisal process. Consequently, this posed a risk that the deployed systems could have malfunctioning features.

Furthermore, inadequate engagement of stakeholders during planning resulted in additional costs in development, and after implementation as a result of developing a new system with similar functions to other already developed systems, frequent change requests or system redesigns, which

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[15] Data on 6 ICT systems were not recorded by respective entities

increased the total costs of ownership for the deployed systems among the public institutions.

This was evident in the Ministry of Finance, which developed a Government Salary Payment Platform (GSPP). However, the system was completely replaced by a newly developed Human Capital Management Information System (HCMIS) 2 years later, in 2019. Furthermore, the Ministry of Lands, Housing and Human Settlements Development developed ILMIS-Dar and ILMIS-Dodoma, which could be avoided by adequately engaging all stakeholders related to land, housing and human settlement in developing one system that could cater for the needs of all stakeholders.

### 3.3.2 Inadequate Cost Estimation in Requirement Gathering and Designing of the ICT Projects

The audit team noted that there was no cost breakdown per component to inform analysis and evaluation at the designing stage of the acquired ICT systems. However, this practice was contrary to section 2.3.2 (ii) of the Standards and Guideline for Government ICT Project Implementation of 2020. For instance, the estimation and recording of costs in requirement gathering were inadequately done to provide a clear understanding of the financial implications of the deployed ICT projects.

Moreover, a review of project charters, proposals, and concept notes found that, visited public institutions did not estimate the costs adequately for the requirements gathering and designing. This was observed in 11 out of 18 systems which were assessed, and this is equivalent to 61% of all systems assessed, as shown in **Table 3.4**.

**Table 3.4: The List of ICT systems with un-estimated costs for Requirement Gathering**

| Name of the Public Institution | Name of the Deployed ICT System | Reasons for Missing Costs |
|---|---|---|
| e-Government Authority (e-GA) | GISP | Not Regarded as Cost |
| | mGov | |
| Ministry of Finance (MoF) | MUSE | Not Traceable |
| | CBMS | Not Traceable |
| | GSPP | Not Traceable |
| Tanzania Revenue | ITAX | Un-Itemised Budget |
| | IDRAS | Un-Itemised Budget |

| Name of the Public Institution | Name of the Deployed ICT System | Reasons for Missing Costs |
|---|---|---|
| | TEMS | Un-Itemised Budget |
| | ECTS | Un-Itemised Budget |
| Ministry of Health | NSMIS | Donor Reserved |
| | e-IDSR | Donor Reserved |

*Source:* Auditors' Review of Project Proposal and Concept Notes, 2024

Further analysis identified institutions and specific systems with estimated costs for requirement gathering. **Table 3.5** shows that only 7 out of 18 systems had records of estimates for requirement gathering. This is equivalent to 39% of all assessed systems, as shown in **Table 3.5.**

**Table 3.5: The List of Systems with Cost Estimates for Requirement Gathering for the Selected ICT Systems**

| Name of the Public Institution | Name of the Deployed ICT System | Estimated Cost ( TZS) |
|---|---|---|
| Ministry of Health (MoH) | UCS | 150,000,000 |
| | HPRS | 6,580,000 |
| Ministry of Land | ILMIS | 40,040,000 |
| | ILCMS | 25,200,000 |
| PO-RALG | IMES | 67,040,000 |
| | PLANREP | 62,800,000 |
| | TPLMIS | 39,090,000 |

*Source:* Auditors' Analysis of Data from the Project Charter and Concept Notes of the Respective ICT Systems, 2024

The consideration of systems both with and without cost estimates noted the presence of inconsistencies in the estimation of costs among public institutions. The observed inconsistencies were due to the absence of a cost estimation method, which was expected to include the estimation of project budgets and fully account for all potential costs associated with requirement gathering.

The audit further noted that 4 out of 6 public institutions visited did not take into account the estimated costs for system design, which was largely attributed to additional requirements during design and development, as shown in **Table 3.6**.

**Table 3. 6: The Systems Missing the Estimated Costs for Design Activities and the Provided Reasons**

| Name of the Public Institution | Name of the Deployed ICT System | Reasons for Missing Costs |
|---|---|---|
| e-Government Authority (e-GA) | GISP | Not Identified as Cost |
| | mGov | Not Identified as Cost |
| Ministry of Finance (MoF) | MUSE | Untraceable |
| | CBMS | Untraceable |
| | GSPP | Untraceable |
| Ministry of Health | NSMIS | Donor Reserved |
| | eIDSR | Donor Reserved |
| TRA | ITAX (e-filling) | Un-itemised Budget |
| | TEMS | Un-itemised Budget |
| | ECTS | Un-itemised Budget |
| | IDRAS | Un-itemised Budget |

*Source:* Auditors' Analysis of Data from the Project Charter and Concept Notes of the Respective ICT Systems, 2024

**Table 3.6** indicates that, the initial estimated cost for the design of 10 out of 18 systems was not considered based on three main reasons as follows: the included approach used for the development of the systems was not necessary to estimate the design cost, not documented to be traceable and some were donor reserved information. The analysis shows that 2 out of 10 systems did not identify the respective costs, while the costs for three (3) systems were not traceable.

Moreover, it was further indicated that donors reserved information on the costs for two systems, whereas the remaining three (3) systems did not include the respective costs in their budgets. In this case, 3 visited public institutions could estimate and disclose costs for system designs, as shown in **Table 3.7**.

**Table 3. 7: The Estimated Costs of Systems Design for the Selected ICT Systems**

| Name of the Public Institution | Name of the Deployed ICT System | Initial Estimated Design Cost (In TZS) |
|---|---|---|
| Ministry of Health (MoH) | UCS | 345,000,000 |
| | HPRS | 1,173,000 |
| Ministry of Land | ILMIS | 12,100,000 |
| | ILCMS | 18,000,000 |
| PO-RALG | IMES | 429,800,000 |
| | PLANREP | 68,890,000 |
| | TPLMIS | 42,000,000 |

*Source:* Auditors' Analysis of Data Extracted from Project Charter and Concept Notes of the Respective ICT Systems, 2024

In this regard, the non-identification of costs in different stages was largely attributed to insufficient enforcement by e-GA. This practice was contrary to the requirements of section 9.2 of the Government ICT Project Review Criteria of 2014.

Consequently, inadequate identification and estimation of the specific costs contributed to inadequate control of total costs for projects. This, in turn, posed a risk to public institutions of acquiring ICT systems with cost overruns that would be realised in later stages, especially during project closure.

### 3.3.4 Inadequate Cost Analysis of the Developed ICT Systems

A review of Projects' concept notes in the visited entities found that public institutions do not analyse and evaluate cost estimates for internally developed systems. However, this practice was contrary to paragraph 2.2.4.1 Standards for Development, Acquisition, Operation and Maintenance of e-Government Applications of 2022, which requires public entities to conduct economic feasibility and provide analysis of cost-benefit justification with regard to the costs of an application, which include procurement, project-specific, start-up, and operation costs.

Similarly, a review of the project financial details in GISP observed similar conditions in the project cost analysis. It has to be noted that, this cost analysis could inform the decisions regarding the choice of ICT systems to be acquired and whether they have to be developed internally or outsourced. A summary of cost considerations of the assessed ICT systems in the visited public institutions is shown in **Figure 3.7**.

**Figure 3.7: The Status of Costs Identification among visited Public Institutions**
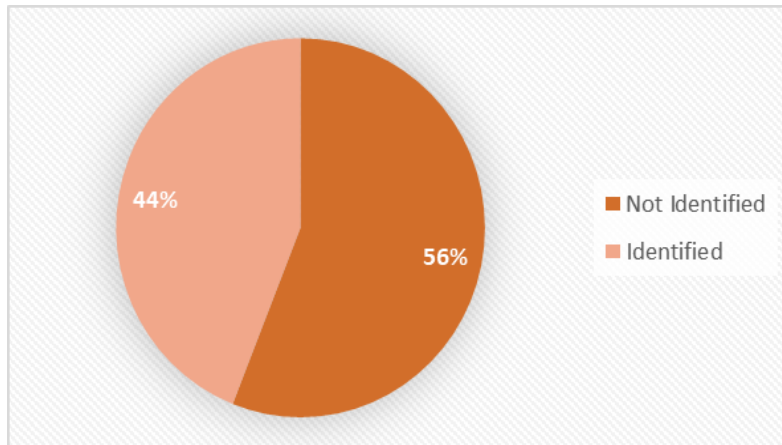


*Source*: Auditors' Analysis of the Concept Notes and Budgets from the Visited Public Institutions, 2024

With reference to **Figure 3.7**, it is indicated that, 56% of 18 systems which were assessed did not identify the costs, while the remaining 44% were able to identify the respective costs. In an interview with some officials from respective entities, it was responded that, public institutions were not able to identify the particular costs of the respective systems.

Likewise, it was reported that, public institutions did not investigate or analyse alternative acquisition options as a means of providing assurance that the costs associated with the respective system were reasonable in order to guarantee that, the transactions made could be cost-effective. This assessment was expected to inform the decision-makers regarding the available alternatives that were less costly than the options considered.

However, in an interview with one of the officials in the visited public institutions, it was revealed that, in practice, no specific budgets were allocated for system development. Instead, the estimation of costs was based on the time allocated till deployment. In this case, an assessment is made regarding the budget and a decision as to whether developers can build the system on-site or off-site. In case the systems were to be developed internally, they relied on internal sources, whereas the engagement of the government institution in the development of the system had an external resources implication.

This was linked to an absence of clearly defined processes that would entail an oversight function of e-GA to ensure that public institutions consider and identify costs associated with all components of the deployed ICT systems. This leads to the government spending money on costly ICT systems while being denied an opportunity to explore other alternatives.

### 3.3.5 Inadequate Budgetary Provisions for System Support and Maintenance

The audit found that 15 out of 18 ICT systems in the visited public institutions did not allocate budgets for commonly used systems components. However, this practice was contrary to section 1.9.4 of the Government ICT Projects Review Criteria of 2014, which requires public institutions to consider sustainable sources to cater for costs associated with projects, including implementation costs, running costs, upgrade costs and operational costs.

In this respect, the public institutions were expected to adequately consider and make budgetary provisions for all common-use support applications, including hardware and software, in order to provide a complete cost profile for systems to be acquired.

Moreover, the hosting component was a highly mentioned system support component that was not accounted for in budgeting for 11 out of 15 ICT systems, regardless of having long-term cost implications after deployment. The inclusion of these items was expected to portray a clear picture of the cost structure and cost-effectiveness of the developed system.

In this case, the application components without cost estimates included server operating systems, database management systems and security tools. The list of system elements with costs not considered in the planning but expected to be incurred consistently by the public institutions is presented in **Table 3.8**.

**Table 3.8:The Cost Items Occurred Consistently but Not Included in Cost Estimates**

| Name of the Public Institution | Name of the ICT System | Non-Budgeted System Application Support Components |
|---|---|---|
| Ministry of Finance (MoF) | MUSE | Microsoft SQL Server 2012 |
| | | Oracle DBMS |
| | | Oracle Security Vault |
| | | Back-Up Host Server |
| | GSPP | Open Manager Plug-in for Oracle Database Manager |
| | | Back-Up Host Server |
| Ministry of Health (MoH) | UCS | Back-Up Host Server |
| Ministry of Lands, Housing and Human Settlements Development | ILMS | Back-Up Host Server |
| PO-RALG | TPLMIS | Back-Up Host Server |
| | IMES | Back-Up Host Server |
| Ministry of Health (MoH) | HPRS | Back-Up Host Server |
| e-Government Authority (e-GA) | GISP | None |
| | mGoV | None |
| PO-RALG | PLANREP | Back-Up Host Server |
| Ministry of Health (MoH) | e-IDSR | Back-Up Host Server |
| Ministry of Health (MoH) | NSMIS | Back-Up Host Server |
| Ministry of Finance (MoF) | CBMS | Microsoft SQL Server 2016 Back-Up Host Server |

*Source:* Auditors' Analysis of the System Design Documents and Budgets from the Visited Public Institutions, 2024

**Table 3.8** indicated the existence of system components appearing consistently and with cost implications to the public institutions but not included in their cost estimates. In this case, the audit team found 6 items, including backup host servers, Microsoft SQL Server 2012 and 2016, and Oracle DBMS, together with its security tool and plug-in. In this regard, the costs for hosting systems in the government-approved data Centres as primary or backup sites accounted for an amount of TZS 2.0 million as per the e-Government Regulations of 2020 were not included in the budget regardless of being a mandatory requirement during deployment or immediately after the completion of the system.

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This phenomenon was evident in all of the 18 assessed ICT systems. Furthermore, Microsoft SQL servers for 2016 and 2012 were also skipped from estimates of CBMS and MUSE systems at the Ministry of Finance. In an interview conducted with one of the officials in the visited public institutions, it was revealed that, the non-inclusion of the licensed items in the planning documents was due to inadequate organisation during the planning and designing of the acquired systems. Also, it was noted that, TRA did not have a budget estimation for all four sampled systems, but the actual cost was only provided for audit purposes.

Consequently, the non-inclusion of system components with perpetual cost implication did not provide an appropriate impression of the nature of costs for the systems and the long-term impact on the ICT cost portfolio among public institutions.

### 3.3.6 Insufficient Reviews to Guarantee the Absence of Duplicate Efforts of the Initiated ICT Systems

Regardless of conducting inspections, compliance assessments, security assessments and system reviews that facilitate in providing a clear overview and visibility of ICT initiatives which are implemented by public institutions, the audit team noted that, there was insufficient tracking of the outcomes of the review process. This practice was contrary to section 24(2) of the e-Government Act of 2019, which requires public institutions intending to implement ICT projects to submit to the e-Government Authority (e-GA), the concept note for guidance to ensure and avoid duplication of efforts. This is purposely done in order to ensure that instances of system duplication are timely identified and addressed in a timely manner.

Based on these facts, the audit noted some instances in which e-GA was unaware of the initiatives implemented by public institutions for ICT projects. This was confirmed in a review of the Correspondence Letters between e-GA and The National Examinations Council of Tanzania (NECTA), the Universal Communications Service Access Fund (UCSAF), and the National Bureau of Statistics (NBS). It was revealed that e-GA was unaware that the three (3) developed ICT systems were already in the development stages, as summarised in **Table 3.9**.

**Table 3.9: The Summary of the Developed ICT Systems without e-GA's Knowledge**

| Name of the Public Institution | Name of the Developed ICT System | Correspondence Letter Reference No. |
|---|---|---|
| National Examination Council of Tanzania (NECTA) | Electronic Marking System (eMAS) | AC.155/287/01P/74 Dated 6th May, 2022 |
| Universal Communications Service Access Fund (UCSAF) | Electronic Project Management System (e-PMS) | AC.155/287/01P/135 Dated 31st May, 2022 |
| National Bureau of Statistics (NBS) | NBS Ajira Portal | AC.155/287/01P/72) Dated 30th April, 2022 |

*Source:* Correspondence Letters from the e-Government Authority, 2024

**Table 3.9** indicates that, several public institutions successfully developed and implemented various ICT systems without prior knowledge of e-GA. This was evident in public institutions such as the National Examination Council of Tanzania (NECTA), which introduced the Electronic Marking System (eMAS), whereas the Universal Communications Service Access Fund (UCSAF) launched the Electronic Project Management System (e-PMS) and the National Bureau of Statistics (NBS) established the NBS Ajira Portal.

However, it was also noted that, regardless of the requirement for the submission of the concept notes, there are no clearly stipulated procedures as to how e-GA is notified with regard to the implementation status of the issued technical recommendations in order to ensure that, there is compliance with the stipulated standards and guidelines. This was mainly linked to inadequate enforcement that would guarantee compliance with the stipulated standards. Consequently, e-GA was not well-informed of the effectiveness of the deployed ICT systems in public institutions.

**(a)** *The Existence of Duplicate ICT Systems*

The analysis of Software Assets Data of 2024 indicated that, there was an existence of ICT systems that perform a similar functionality. This phenomenon was contrary to section 25(a) of the e-Government Act of 2019, which emphasises the requirements for the sustainability and reliability of digital systems, including avoiding duplication and utilising centralised systems whenever feasible.

It was further revealed that, similar functionalities were observed in the ICT systems in 5 institutional function categories: Financial Management, Human Resource Management, Fleet and Transport, Enterprise Resource Management and Student Management, as summarised in **Table 3.10.** The details of the list of duplicate ICT systems are provided in **Appendix 4.**

**Table 3.10: The List of ICT Systems with  Similar Functionality**

| System Category/sector | No. of Identified ICT Systems (Similar Function) | Recorded Total Budget (In TZS) |
|---|---|---|
| Financial Management | 4 | 9,952,116,417 |
| Human Resource Management | 5 | 132,019,884 |
| Fleet and Transport Management | 2 | 92,907,200 |
| Enterprise Resource Management | 3 | 0 |
| Student Management | 5 | 56,500,000 |
| Total | 19 | 10,233,543,501 |

***Source:*** Auditors' Analysis of Data from e-Government Authority Software Assets Data, 2024

**Table 3.10** indicates that, there is a total of 19 identified ICT systems with similar functionality across different fields. Thus, the total budget allocated for these systems amounts to TZS 10.2 billion. It is further elaborated that, the highest budget allocation was for ICT systems in the financial sector, which accounted for an amount of TZS 9,952,116,417. This implies that there has been a duplication of efforts and resources in developing similar ICT systems in various fields. This was attributed to inadequate coordination between different institutions that are involved in developing ICT systems from different sectors.

**(b)** *The Development of ICT Systems that Do Not Meet Project Review Criteria*

The audit team noted that there were ICT systems that did not comply with the Government ICT Project Review Criteria. However, this practice was contrary to the requirement of Section 24 (2)(a) of the e-Government Act of 2019, which requires public institutions intending to implement ICT projects to submit project information for guidance during the planning stage and secure an authority clearance based on the review criteria.

Moreover, in a review of the Government ICT Service Portal of 2024, it was found that, there were no supporting documents to verify as to whether the

identified inadequacies, as stated by e-GA, were taken into consideration when the systems were being developed. This was evident in a review of the Advisory Notes issued to the Ministry of Finance, which indicated that, there were 3 unmet review criteria, namely project conceptualisation, project sustainability, and financial considerations for the ICT systems on PV-VB 2010 and AID Management Platform.

Consequently, the inability to meet the mentioned review criteria implies that the institutional strategic goals may not be achieved and that the intended value-for-money for the deployed ICT systems may not be realised either.

## 3.4 Inadequate Cost Control in the Development and Deployment of ICT Systems

The audit team noted that, there was inadequate cost control in the development and deployment of ICT systems. This led to budget overruns for ICT systems contrary to the requirement of section 2.1 (vii) of the Guidelines for Development, Acquisition, Operation, and Maintenance of e-Government Applications of 2020. It is emphasised that, this section requires the use of proper criteria for estimating costs related to license fees for all common-use ICT support applications such as antivirus, operating systems, office suites, and system/network monitoring, and have to be appropriately planned and budgeted.

This practice is in compliance with Section 1.9 of the ICT Project Review Criteria of the e-Government Authority of 2020, which requires public institutions to ensure that, the costs associated with developing ICT systems reflect their market value. Consequently, inadequate cost control led to unnecessary costs and delays in the project timeline. This subsection provides details to support the identified inadequacies in ensuring effective cost control throughout the development and deployment of ICT systems in the visited public institutions.

### 3.4.1 Ineffective Transfer of Knowledge to Guarantee Sustainable ICT Expertise

A review of the Annual Performance Reports of 2020-2023 in the visited public institutions found that plans to ensure capacity-building activities for

the internal development of staff that were expected to enhance the transfer of knowledge were not effectively implemented. This tendency was contrary to Section 1.8.1 of the Government ICT Projects' Review Criteria of 2014 when referred concurrently with the requirement of section 2.3.5 (iii) of the standards and guidelines for Government ICT project implementation on the need to ensure that, human resource capacity and capability of internal ICT team is built within public institutions.

However, in an interview with one of the public officials, it was elaborated that, knowledge-sharing among staff was occasionally done through informal arrangements such as peer-to-peer discussions. The assessment of the extent of the transfer of technical skills for developed systems in the visited public institutions is provided in **Table 3.11**.

**Table 3.11: The Transfer of Technical Skills for Developed Systems in the Visited Public Institutions**

| Knowledge Transfer Practices | Number of Systems with Respective Knowledge Transfer Practices[16] | | | | | | Total |
|---|---|---|---|---|---|---|---|
| | MLHHSD | MoH | PO-RALG | TRA | MoF | eGA | |
| Engagement of internal staff | 2 | 4 | 3 | 4 | 3 | 2 | 18 |
| Training of ICT teams | 2 | 4 | 3 | 4 | 3 | 2 | 18 |
| Knowledge exchange practice (coaching) | 0 | 0 | 3 | 2 | 0 | 0 | 5 |
| Retention Strategy | 0 | 0 | 3 | 1 | 3 | 2 | 9 |

*Source:* Auditors' Analysis of Data from the Visited Public Institutions, 2024

**Table 3.11** indicates that, there are inadequate practices of knowledge transfer among the visited public institutions. In this case, public institutions commonly adopted the use of traditional training approaches in order to enhance knowledge transfer. This was observed in all 18 assessed ICT systems.

However, sustainable and long-term means, such as knowledge exchange practice, including coaching and mentoring, were observed in only 5 out of 18 ICT systems. Similarly, public institutions did not adopt retention strategies to ensure the key technical staff engaged in the development of

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[16] The knowledge transfer referred in this case is for knowledge expertise within institutions from either inhouse expertise or outsourced expertise for internally developed systems

critical and high-value systems are retained. This was the case in 9 out of 18 assessed ICT systems.

**Table 3.12: The Summary of ICT Staff Retention Rate in the Visited Public Institutions**

| Knowledge Transfer Practice | Total Number of Sampled Systems | Incidences/ Number/ Occurrence |
|---|---|---|
| Engagement of internal staff | 17 | 17 |
| Training of ICT teams | 17 | 17 |
| Knowledge exchange practice (coaching) | 17 | 5 |
| Retention Strategy | 17 | 9 |

*Source:* Auditors' Analysis of Data from the Visited Public Institutions, 2024

Table 3.12 indicates that there was inadequate knowledge transfer practice through exchange practice (coaching) and retention strategies. In this regard, the lack of knowledge transfer plans was due to the inability of the public institutions to prioritise knowledge management initiatives in light of the available departmental opportunities.

As a result, this might lead to a lack of ICT expertise in the key technical areas, sustainable systems support, and possibly increased costs due to the involvement of external consultants.

### 3.4.2  The Development of Systems with Missing Design Elements

The audit found that the system designs that were prepared to inform the system developers were not complete enough to enable the developers to develop high-quality ICT Systems adequately. This practice was contrary to Regulation 23(c) of the e-Government General Regulations, which requires public institutions to comply with the design standards as stipulated in Section 2.1.1 and 2.1.4 of the Standards for Development, Acquisition, Operation and Maintenance of e-Government Applications of 2022 which provides design standards for ICT systems. In this case, the systems design documents were found to be missing the key components of the systems, such as Database Design, Data Dictionary, Network Architecture and Security Architecture, as presented in **Table 3.13.**

**Table 3.13: The Overview of Missing Design Elements from the System Design Documents**

| System Design Element | Incidence out of 18 Systems | Percentage of Incidence |
|---|---|---|
| Database Design | 9 | 50 |

| System Design Element | Incidence out of 18 Systems | Percentage of Incidence |
|---|---|---|
| Non-Functional Requirements | 10 | 56 |
| Data Dictionary | 12 | 67 |
| Network Architecture | 12 | 67 |
| Security Architecture | 13 | 72 |
| Hardware Architecture | 12 | 67 |

*Source:* Auditors' Analysis of the System-Design Documents from the Visited Public Institutions, 2024

**Table 3.13** indicates that public institutions were preparing systems designs that were not complete. This means that key components of the system were missing in the respective designs. Based on this fact, a total of 6 major design deficiencies were identified. These included database design, network architecture, database designs and data dictionaries for the assessed ICT systems.

It was further revealed that twelve (12) systems were missing network architecture, data dictionary, and hardware architecture, which were key to ensuring that the designed systems would be able to operate within the hosting environment and that they would bring the expected benefits. In this respect, out of 18 systems that were reviewed, a total of 9 ICT systems were missing database designs. Meanwhile, 10 systems did not provide a non-functional requirement mapping. The most deficient system designs were UCS, GSPP, GISP, mGov, and UCS, which were missing a total of 6 key major design elements.

Moreover, the audit team found that, the preparation of incomplete systems design documents was linked to inadequate awareness of the requirements and technical guidelines for the preparation of system design documents. Similarly, a review of the Standards Documents developed by eGA noted the presence of technical standards, which were part of the design documents. Consequently, this led public institutions to incur additional costs related to two issues. First, the design deficiencies were causing changes to the systems, which led to premature additional costs. Secondly, the design deficiency would compel institutions to incur additional costs by purchasing hardware and other equipment which were not identified during the design while they were found to be necessary for the operation of the systems.

### 3.4.3 Inadequate Cost Control Measures in the System Development Activities

In a review of Project Concept Notes in the visited public institutions, it was found that, there was inadequate adoption of the system's development approaches that aimed to minimise costs for the system's development. This practice was in compliance with Regulation 22(d) of the eGovernment Regulations of 2020and, paragraphs 2.2.1.1 and 2.2.1.2 of the Standards for Development, Acquisition, Operations and Maintenance of e-Government Applications, which require the use of guided and appropriate software development approaches.

Similarly, in the review of concept notes and design documents of 18 sampled ICT systems from 6 visited public institutions, it was found that, cost control for the acquisition of internally developed ICT systems was not effectively considered. This was evident in the review of development approaches within the visited public institutions. However, they did not effectively institute cost-control measures to acquire the ICT systems. In this case, the most common measure adopted was the use of free and open-source technologies as observed and practised in 12 out of 18 assessed ICT systems. Therefore, the audit team assessed seven (7) main cost control measures from the visited institutions and the extent of their effectiveness, as presented in **Figure 3.8.**

**Figure 3.8: The Extent of Adoption and Implementation of Cost Control Measures**
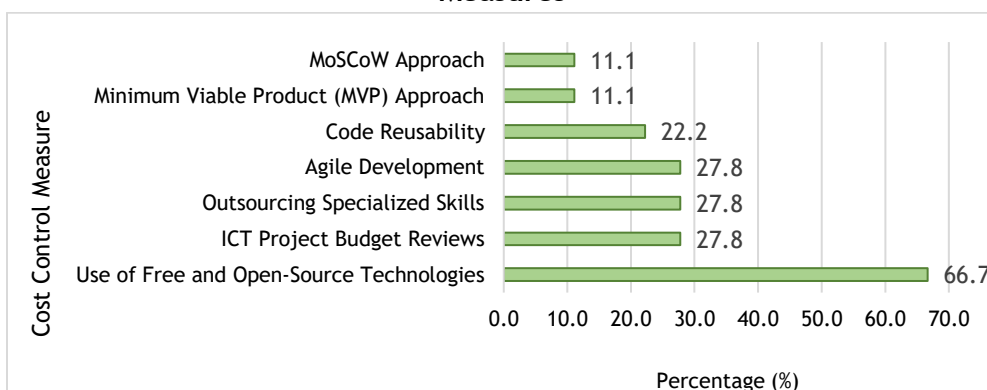


*Source:* Auditors' Analysis of System Design Documents, Concept Notes, Systems Development Budgets, 2024

**Figure 3.8** indicates that, there has been a low adoption of measures to control costs in public institutions while acquiring ICT systems internally. The most commonly adopted measures were the use of free and open-source technologies in development. This aspect was observed in 12 out of 18 systems. In this respect, the most uncommon method was the use of the minimum viable product, as observed in only 1 out of 18 assessed ICT systems.

Moreover, an interview with one of the officials in the visited public institutions elaborated that the low adoption of different cost control approaches was a result of the experience and knowledge of the teams responsible for software development. In this case, technical staff involved in development activities were aware of a few methodologies, including the use of free and open software, but were not technically capable of adopting other approaches.

Consequently, the inadequate adoption of cost control increases the risks of public institutions hosting systems that are expensive in such a way that value for money cannot be realised. Therefore, inadequate cost control measures might lead to expensive software licenses, cost overruns, and high maintenance costs, especially when associated with vendor locking.

### 3.4.4 Undefined System's Design Lifetime

The audit found that, the developed ICT systems within the visited public institutions did not have specific design lifetimes contrary to Clause 8.3.5 (Design and Development Outputs) of ISO 9001:2015, which requires design and development outputs, including the characteristic of products and services that are essential to their intended purposes necessary to determine maintenance, minor or major changes.

It should be noted that the design lifetime is a key parameter in identifying when the system would require minor or major changes or when the system has to be completely disposed of. Based on these facts, the audit team reviewed the system documents, including design documents and requirements documents, to determine the extent to which the systems defined lifetime and presented the results in **Table 3.14**.

**Table 3.14: The Extent of Coverage of Lifecycle Processes in System Designs**

| Name of the Public Institution | Number of ICT systems assessed (n) | Number of ICT Systems lacking design lifetimes (n) | Names of the ICT Systems | Implications |
|---|---|---|---|---|
| MoH | 4 | 4 | e-IDSR NSMIS UCS THPRS | • Unmatched Hardware and Software Maintenance Schedules<br>• Pre-mature disposal<br>• Delayed Re-designs |
| MLHHSD | 2 | 1 | ILCMS | • Unmatched Hardware and Software Maintenance Schedules<br>• Pre-mature disposal<br>• Delayed Re-designs |
| MoF | 3 | 3 | GSPP MUSE CBMS | • Unmatched Hardware and Software Maintenance Schedules<br>• Pre-mature disposal<br>• Delayed Re-designs |
| TRA | 4 | 0 | ITAX (e-filing) IDRAS TEMS ECTS | • No implication the schedule provided for two years |
| PO-RALG | 3 | 3 | PLANREP TPLMIS IMES | • Unmatched Hardware and Software Maintenance Schedules<br>• Pre-mature disposal<br>• Delayed Re-designs |

| Name of the Public Institution | Number of ICT systems assessed (n) | Number of ICT Systems lacking design lifetimes (n) | Names of the ICT Systems | Implications |
|---|---|---|---|---|
| e-GA | 2 | 2 | GISP mGov | • Unmatched Hardware and Software Maintenance Schedules<br>• Pre-mature disposal<br>• Delayed Re-designs |

*Source:* Auditors' Analysis of System's Design and Requirement Documents from the Visited Public Institutions, 2024

**Table 3.14** indicates that, the deployed systems lacked specifications for lifecycles and specific lifetimes, which were key for determining how long the system would provide service until it was to undergo major changes or to be disposed of. In this case, out of 17 assessed ICT systems, 5 systems defined the lifetime of the system based on the lifetime of the operating system, while the remaining 12 systems did not define the system's lifecycle.

Moreover, ILMIS at the Ministry of Lands, Housing, Human Settlement and Development provided software design lifecycle by defining both the expected lifecycles as well as ITAX (e-filling, IDRAS, ECTS, TEMS) for hardware and its support applications, which together provide an aggregate system's design lifetime.

However, in an interview with one of the officials in the visited public institutions, it was found that, the lack of system design lifetimes across the visited public institutions was linked to the e-Government Authority's inability to provide guidance regarding the estimation of the system lifecycle process and the design life of a system. Consequently, the absence of a clearly defined system lifetime might lead to unclear maintenance and upgrade and re-design planning, which might lead to unexpected malfunction and increased downtimes.

### 3.4.5 Ineffective Management of ICT Project Costs

The audit team found that, there was ineffective project cost management, leading to variations between the planned and actual costs throughout the project implementation cycle. This practice was contrary to para 2.3.4 (ii) of the Guidelines for ICT Project Implementation of 2020, which requires public institutions to ensure that costs are effectively controlled.

**Table 3.15: The Observed Inadequacies in Project Cost Management**

| Cost Management Aspect | Observation | Incidences Observed (Systems) |
|---|---|---|
| Cost Identification Skills | Inadequate Skills in Identification of Project Cost | 2 |
| Cost Estimation | Inability to estimate costs | 11 |
| Access to Project Cost Data | No access to cost information from donor partners | 6 |
| Cost Documentations | Undocumented Project Expenditure | 7 |
| Cost Itemisation | Absence of Itemised Budgets | 11 |

*Source:* Auditors' Analysis of the Project Cost Data of the Assessed ICT Systems, 2024

**Table 3.15** indicates that there were inadequacies in managing project costs throughout the project lifecycles. IN this case, the most observed inadequacies included the cost estimation and the inability to itemise the components of the project costs. This was evident in 11 out of 18 assessed ICT systems.

Consequently, ineffective management of costs in public institutions was a major cause for the acquisition of ICT systems, which might be cost-ineffective. In this regard, public institutions could not develop cost profiles for their ICT systems due to a lack of project cost information. This resulted in officials in the visited entities being unable to ascertain the extent to which the acquired ICT systems were cost-effective.

### 3.4.6 Variations of Budget on Assessed ICT Projects

The audit found that, the completed ICT projects experienced cost overruns over the period under which they were developed. This practice was contrary to paragraph 2.3.4 (ii) of the Guidelines for ICT Project Implementation of 2020, which requires public institutions to ensure that, activities leading to the acquisition of ICT projects are within budget and scope and meet schedule and milestones as well. In this case, budget control and the scope of project activities are done in order to ensure that ICT projects do not experience cost overruns.

However, in a review of budgets for development activities and the final actual costs of projects, it was found that, most of the systems incurred costs more than what was originally budgeted. The comparison of the original budgets and the actual costs of ICT projects are presented in **Table 3.16**.

**Table 3.16: The Budget and Costs Overview Before and After Completed ICT Projects**

| Name of Institution | Name of the System | Planned Costs | Actual Costs (TZS) | Variance (%) | Remarks on Costs |
|---|---|---|---|---|---|
| PO-RALG | PLANREP | 1,399,200,000 | 3,500,000,000 | 150 | Overrun |
| MoH | THPRS | 32,250,000 | 61,103,000 | 89 | Overrun |
| MoH | e-IDSR | 140,000,000 | 190,000,000 | 36 | Overrun |
| MLHHSD | ILMS | 1,336,250,000 | 520,800,000 | -61 | N/O |
| MLHHSD | ILCMIS | 183,000,000 | 100,021,000 | -45 | N/O |
| TRA | IDRAS | 65,000,000,000 | 2,137,608,000 | -97 | N/O[17] |
| TRA | ECTS | 382,906,571 | 262,389,000 | -31 | N/O |
| PO-RALG | TPLMIS | 250,000,000 | 250,000,000 | 0 | N/0 |
| PO-RALG | IMES | 1,722,315,000 | 1,722,315,000 | 0 | N/O |
| TRA | iTAX | 382,906,571 | 382,906,571 | 0 | N/O |
| MoF | CBMS | 0 | 367,400,000 | - | Unbudgeted Expenditure |
| MoH | NSMIS | 0 | 360,000,000 | - | Unbudgeted Expenditure |
| MoF | MUSE | 0 | 8,836,016,417 | - | Unbudgeted Expenditure |
| eGA | mGov | 0 | 37,500,000 | - | Unbudgeted Expenditure |
| eGA | GISP | 0 | 52,346,500 | - | Unbudgeted Expenditure |

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[17] The system is still undergoing development and not yet completed

| Name of Institution | Name of the System | Planned Costs | Actual Costs (TZS) | Variance (%) | Remarks on Costs |
|---|---|---|---|---|---|
| MoH | UCS | 0 | 1,030,000,000 | - | Unbudgeted Expenditure |
| MoF | GSPP | 0 | 0 | - | Undisclosed Costs |
| TRA | TEMS | 0 | 0 | - | Undisclosed Costs |

*Source:* Auditors' Analysis of Budgets and Payments for the Acquisition of Systems from GISP, Project Charters, Software Costs, 2024

**Table 3.16** indicated that, 3 out of 18 assessed ICT systems, namely THPRS, e-IDSR, and PLANREP, experienced cost overrun of more than 30 %, whereas 4 out of 18 systems were indicated to have spent less than the planned amount ranging between 31% and 97 %. However, two systems, namely PLANREP and THPRS, indicated an extremely high cost of development with a threshold of 150% and 89%, respectively. On the other hand, it was found that, PLANREP experienced an additional cost due to additional requirements raised during the development period.

Further analysis found that, four (4) systems spent less than the originally planned costs, which were found to have no cost overruns. For instance, the IDRAS system planned to spend an amount of TZS 65 billion, but it had utilised an amount of TZS 2.1 billion up to the time of this audit. However, it was still in 1st phase of development stage. Also, it is indicated that 3 systems spent the same amount as per the planned budget and, thus, had no cost overrun.

Similarly, it was found that, 6 systems spent an amount of funds which was not originally budgeted. These systems included CBMS, NSMIS, MUSE and m-GoV, GISP and UCS. In this case, there were no records indicating budgets or money spent on the acquisition or operations of GSPP and TEMS.

The review of project budgets and expenditure reports found that the cost overruns and use of unbudgeted expenditure in the development of ICT systems were a result of the following factors.

**(a) Inadequate Control of Timelines**

The audit found that, one of the reasons for cost overruns was the inadequate control of timelines during pre-development, development, and deployment activities. In this regard, the timelines for these activities were

extended longer than planned. This ultimately led to an increase in the costs of financing the development activities and eventually increasing the total project costs. The assessment of timelines for pre-development, development and deployment activities is presented in **Table 3.17**.

**Table 3.17: The Timelines for Pre-development, Development and Deployment Activities**

| Name of a System | Pre-development, Development and Deployment Timelines | | | |
|---|---|---|---|---|
| | Planned Start Date | Planned Completion Date | Actual Completion Date | Delayed Period (In Months) |
| MUSE | 01.07.2017 | 30.06.2018 | 01.07.2019 | 11 |
| THPRS | 01.11.2020 | 23.12.2020 | 31.03.2022 | 16 |
| UCS | 18.11.2021 | 10.08.2022 | 31.12.2023 | 16 |
| NSMIS | 01.07.2016 | 30.06.2018 | 01.10.2021 | 32 |
| e-IDSR | 31.01.2018 | 27.03.2018 | 01.08.2019 | 17 |
| GSPP | 01.01.2016 | 01.04.2017 | 01.07.2017 | 3 |
| ILMIS | 01.06.2020 | 01.06.2021 | 30.06.2023 | 24 |
| ILCMIS | 24.01.2022 | 30.06.2022 | 11.07.2022 | 1 |
| TPLMIS | 22.06.2021 | 02.10.2021 | 01.09.2023 | 25 |
| PLANREP | 24.10.2016 | 21.07.2018 | 30.06.2018 | 3 |
| IMES | 05.02.2018 | 14.07.2018 | 31.12.2018 | 5 |
| MGov | 01.01.2014 | 29.04.2016 | 30.06.2017 | 14 |
| GISP | 16.09.2019 | 30.06.2020 | 30.10.2024 | 40 |
| CBMS | 01.06.2016 | 01.07.2017 | 31.12.2017 | 5 |
| i-TAX | 01.09.2020 | 01.08.2021 | 30.06.2022 | 10 |
| IDRAS | 02.07.2023 | 30.06.2026 | Ongoing | - |
| TEMS | 01.11.2019 | 27.02.2020 | 03.10.2020 | 8 |
| ECTS | 01.07.2020 | 20.02.2021 | 01.05.2021 | 3 |

*Source:* Auditors' Analysis of the System Development Reports from e-GA, 2024

**Table 3.17** indicates that, pre-development, development and deployment timelines for all of the assessed ICT systems extended beyond the originally planned time. In this case, the delays ranged from a period of 1 month to a maximum of 40 months for the implementation of the project activities. The least delayed project was ILCMIS, which was delayed for 1 month, while the most delayed project was GISP, which was implemented with a delay of a 40-month period from the originally planned completion time. Therefore, the delay in project implementation resulted in changes with regard to project scope, timely availability of funds and emerging requirements during the development process.

## (b) The Changes in Scope and Requirements

Changes in scope and requirements were also another factor that contributed to increased costs in the development of the ICT Systems. In this respect, immediate changes in scope and additional requirements resulted in additional work in design and programming activities. Thus, the increase in user requirements compelled developers to increase the timelines for development activities, leading to an increase in direct costs associated with the projects.

**Table 3.18: The Extent of Additional Requirements/Scope**

| Name of the ICT System | Additional Requirements/Scope |
|---|---|
| HPRS | • Non-Lab Testing<br>• Health Practitioners Portal<br>• NIDA Integration |
| MUSE | • Modified Account Payable Module<br>• Modified Purchasing Module<br>• Modified General Ledger Module |
| GSPP | • Integration with HCMIS |
| GISPP | • Service Module<br>• Security Management Module |
| ITAX (e-filling) and IDRAS | • Deployment of new digital tax registration<br>• Modification of AppSetting for Digital TP Obligation Service<br>• Approval of IDRAS enhancement |
| ECTS | • TANCIS- ECTS Integration enhancement<br>• ECTS Rollout<br>• ECTS enhancement-going live<br>• ECTS modules enhancement |
| TEMS | • Deployment of Tax exemption system to live environment<br>• Approval to deploy enhancement on VAT exemption management portal |

*Source:* Auditors' Analysis of the System Design Documents and Development Reports from the Visited Public Institutions, 2024

The presence of the additional scope immediately after the completion of the ICT project was the major factor that contributed to an increase in the costs. It was found that 9 changes were introduced during and immediately after the completion of NSMIS. This was evident in the review of the systems, whereas HPRS and MUSE accommodated significant changes immediately after closure. A further review found that, 17 out of the 18 ICT

projects reviewed had adopted a total of 18 additional requirements and scope changes during and immediately after deployment.

Based on a review of project documents, including budgets and concept notes, it was found that, there was ineffective project planning and management among the staff responsible for managing ICT projects. This was realised from the extent of activities undertaken prior to the project commencement to the final documentation of project activities.

Consequently, cost overruns in the acquisition of ICT Systems increased the total costs of ownership of the developed systems, leading to the acquired systems being cost-ineffective.

### 3.4.5  Inadequate Testing of the Developed ICT Systems

The audit team found that public institutions were not conducting all the necessary tests to ensure the quality and functionality of the developed systems. This practice was contrary to sections 2.1.6.1, 2.1.5.7 and 2.1.6.5 of the Standards for Development, Acquisition, Operation, and Maintenance e-Government applications of 2022, which requires public institutions to conduct tests in accordance with the requirement for the application including unite load, acceptance and integration tests.

However, a review of test reports noted that, public institutions were conducting selective types of tests while leaving other important tests unconducted. Similarly, the audit team determined the extent to which public institutions were conducting important tests during development and deployment, as presented in **Table 3.19**.

**Table 3.19: The Types and Extent of Conducting Necessary Tests for the Assessed 17 ICT Systems**

| Type of Test | Incidence(s) | Percentage | Remarks |
|---|---|---|---|
| Unit Tests | 15/17 | 88 | Sufficient Assurance of Unit-Level Functionality |
| Integration Tests | 3/17 | 18 | Insufficient Assurance of Combined Functionality |
| Load Tests | 1/17 | 6 | Insufficient Assurance on Maximum Loading Capacity |
| User Acceptance Tests (UAT) | 17/17 | 100 | Sufficient Assurance of Overall Functionality |

*Source: Auditors'* Analysis of Test Reports of the Developed ICT Systems from Visited Institutions, 2024

Table 3.19 indicates that testing of the developed systems was inadequately done for all of them. In this regard, among 4 key tests to be conducted by the developed systems, 2 of them were frequently conducted, but the remaining 2 were occasionally conducted. Thus, out of 18 ICT systems that were assessed, only 1 of them conducted load tests, which is equivalent to 6% of the total number of systems. The load tests were conducted with the expectation to provide assurance of the capacity of the systems at maximum loading conditions. In this case, a total of 3 out of 18 systems conducted integration tests, which is equivalent to 18%. The integration tests were expected to provide assurance on the combined functionality of the systems with different units and modules combined.

Moreover, a review of the test reports and correspondences from the e-Government Authority found that, there was inadequate enforcement by the Authority on the implementation of all the necessary tests during the development and deployment of the systems. In this case, public institutions were not enforced or assessed as to whether they were conducting all the necessary tests. However, they presented reports of only the common tests conducted, particularly UAT.

Consequently, the deployment of systems that were not adequately tested increased the risks of acquiring systems of substandard quality, thus, compromising the value for money. On the other hand, inadequately tested systems were susceptible to malfunction when subjected to sudden increases in workloads, continuous workload over a period of time, unresponsiveness or increased response times during peak periods, simultaneous high number of transactions per user, etc. This was evident in the case that, THPRS, which was not load-tested, was reported to have frequent periods of unresponsiveness and downtimes during peak periods of registrations in the months of August to September when students were in the process of graduating from colleges and universities or when there was a mass call for employment applications in the Government.

### 3.4.6  Inadequate Utilisation of System Functionalities

A review of the functionalities of the systems that were deployed in the visited public institutions found that, there was an existence of developed ICT systems involving an expenditure of Government funds that were underutilised. This practice is contrary to paragraph 2.3.1 of the Standards for Development, Acquisition, Operation and Maintenance of e-Government

Applications of 2022, which requires on-going monitoring and maintenance of the system during the system maintenance cycle.

**Table 3.20: The Extent of System Modules/Submodules which are Underutilised**

| Name of ICT System | Under-utilised System Functionalities/Modules | Effects/Risks |
|---|---|---|
| THPRS | Internship<br>Examinations<br>CPD Providers | • Wasted Public Funds<br>• Increased vulnerability to system malfunction and cyber-attacks |
| NSMIS | GIS Module<br>Event Capture<br>Data Entry<br>• *Occupation Health and Safety sub-module (All Data Sets)*<br>• *Water Safety sub-module (All Data Sets)*<br>• *Waste Management*<br>Pivot Table | • Wasted Public Funds<br><br>• Increased exposure to system malfunction and cyber-attacks |
| GSPP | Wage bill<br>Unpaid Repayment<br>Issue Payroll<br>Generate Exchanger<br>CPO<br>Employee Contribution<br>Employer Contribution<br>PSAF Deductions<br>Reconciliation<br>Report Initialisation<br>Data Management<br>User Management | • Increased exposure to system malfunction and cyber-attacks<br><br>• Risk of pre-mature disposal |
| GISP | ICT Service Management<br>Security Management<br>Reports<br>    • Project Implementation Reports<br>    • Project Closure Report<br>    • Certification Revoke | • Wasted Public Funds<br>• Operational Inefficiency |

*Source:* Observation of the System's Walkthrough, 2024

**Table 3.20** indicates that, there are systems that are being deployed within the government with functionalities that the respective users are not utilising. In this case, out of 18 reviewed systems, 6 had different functionalities that were not being used. This was contrary to the aim of their development. In this regard, critically unused system was the

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Government Salary Payment Platform, which the Ministry of Finance developed to manage salaries in the government sector. The system had a total of 14 major modules. However, only 3 of the modules were being used, and the remaining 11 out of 14 remained unused.

Moreover, the other unused system was the National Sanitation Management Information Systems (NSMIS), which had a total of 4 modules which were underutilised out of 13 modules. Generally, in 5systems that were noted to be comprised of underutilised systems, a total of 18 main modules were not being used.

Furthermore, in an interview with one of the officials from the visited public institutions, it was pointed out that, the main reason for the existence of underutilised systems was the inadequate engagement of stakeholders during the planning and development of the respective systems. Likewise, the introduction of other government-wide systems performing similar functions was also mentioned as a reason for ICT systems having underutilised functionalities. For instance, the GSPP system, which was developed by the Ministry of Finance to handle public sector salaries, was immediately unused and thus turned out to be redundant.

### 3.4.7 Inadequate Assessment of User Satisfaction

The audit team noted that, customer satisfaction surveys regarding the efficiency of the deployed ICT systems were carried out in 6 out of 18 of the assessed ICT systems in the visited public institutions. This practice was contrary to paragraph 2.2.2.3 (iii) of Guidelines for Development, Acquisition, Operation and Maintenance of e-Government Applications of 2020, which requires public institutions to ensure that there is a mechanism to assess user satisfaction with regard to the performance of application services.

However, in interviews conducted with officials from ICT departments of the e-Government Authority (e-GA) and Tanzania Revenue Authority (TRA), it was revealed that, users were satisfied with the functions under the survey. This implies that, the system attained value for money as well as cost-effectiveness.

Moreover, the inability to ensure the achievement of user requirements suggests the inability to utilise opportunities to identify customer needs, address concerns, and enhance overall service delivery. On the other hand, the audit found that, there was a lack of an integrated system for collecting data that could provide actionable insights into customer perceptions and service improvement areas in internally developed systems. These sampled entities were found to lack reliable data on customer expectations and satisfaction levels. This led to the decisions related to customer service being made using the developed system without comprehensive customer feedback.

In this regard, it might lead to decisions that are not customer-driven. This subjected the government to the risk of misalignment between customer demands and government strategies due to the absence of objective data on customer satisfaction. Thus, the lack of a customer satisfaction survey hinders the organisation's ability to track progress over time and measure the effectiveness of the developed system implemented. The audit further found that, the lack of formal assessment of system functionalities utilisation effectiveness for service delivery was linked to a lack of prioritisation in self-review.

## 3.5    Inadequate Implementation of Cost Controls in Maintenance and Support

The audit team found inadequacies in cost control measures during maintenance services as detailed in the following sections, contrary to the requirement of Section 18(3e) of the e-Government Act of 2019, which requires institutional ICT Steering Committee to ensure continuous monitoring and evaluation of institutional ICT projects. The inadequacies identified included the following:

### 3.5.1 Inadequate Monitoring of System's Performance

An observation of the operating environment done through a system walk-through found that, the performance levels of the systems were not adequately monitored from within and outside the systems. This was contrary to the requirement of paragraph 2.3.1 of the Standards for Development, Acquisition, Operation and Maintenance of e-Government Applications of 2022, which emphasises the use of resources to be monitored

in order to ensure that, the required system meets the performance targets and expectations as a means of capacity management.

Moreover, the monitoring functions were expected to provide assurance on whether the acquired systems were performing at the required service levels and delivering the specified requirements, particularly the non-functional requirements, achieving the intended value for money. Based on this fact, the audit team identified key system components that should be frequently monitored by the developed systems and assessed the extent of their monitoring as presented in **Table 3.21.**

**Table 3.21: The Status of System's Monitoring**

| Name of System | Inherent Monitoring | External Monitoring | | | |
|---|---|---|---|---|---|
| | | Security | Application | Server | Network |
| UCS | × | × | × | × | × |
| eIDSR | × | × | × | × | × |
| HPRS | × | × | × | × | × |
| NSMIS | × | × | × | × | × |
| CBMS | × | ✓ | ✓ | ✓ | ✓ |
| MUSE | ✓ | ✓ | ✓ | ✓ | ✓ |
| GSPP | ✓ | ✓ | ✓ | ✓ | ✓ |
| ILMIS | × | ✓ | ✓ | ✓ | ✓ |
| ILCMIS | × | ✓ | ✓ | ✓ | ✓ |
| TPLMIS | × | ✓ | ✓ | ✓ | ✓ |
| GISP | ✓ | ✓ | ✓ | ✓ | ✓ |
| m-GoV | ✓ | ✓ | ✓ | ✓ | ✓ |
| IDRAS | ✓ | ✓ | ✓ | ✓ | ✓ |
| ECTS | ✓ | ✓ | ✓ | ✓ | ✓ |

*Source:* Walkthrough of the Deployed ICT Systems in the Visited Public Institutions, 2024

**Key:** ✓ = Presence of Monitoring Tool
        × = Absence of Monitoring Tool

**Table 3.21** indicates that, the developed systems were not being monitored effectively as a means of providing assurance on the performance of the systems. In this case, out of 18 systems that were assessed, it was found that only six systems had inherent monitoring functions within the systems, while the remaining 12 systems did not have the inherent monitoring tools.

With regard to external monitoring tools, the audit found that, only 10 out of 18 systems assessed had installed external monitoring tools. These included ILMIS, ILCMIS, IDRAS, ECTS, mGOV, TPLMIS, CBMS, MUSE, GSPP and

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PLANREP. The external tools assisted the public entities in providing real-time monitoring of the system's performance and surveillance. In this respect, the monitored System parameters included performance information from the systems, including application performance, foreign traffic, security parameters, server status and network status. The remaining 8 out of 18 did not have the respective monitoring tools.

Based on a review of System Requirements Specifications (SRS) and System Design Documents (SDD), it was noted that the inadequate performance monitoring of the deployed systems was linked to inadequate definition of non-functional requirements. This posed the risks of interruptions due to unforeseen incidences or events and other emergencies that disrupt services, or that may cause major loss of service or total collapse of the systems. This could have been avoided if they were detected in advance using the appropriate tools.

### 3.5.2 Ineffective Frameworks for Hardware Replacement Services of ICT Systems

The audit found that, public institutions visited did not have effective frameworks for maintenance services of the deployed systems in case of a need for replacement of infrastructure hardware. This practice was contrary to the requirement of paragraph 2.2.6.6 of Standards for Development, Acquisition, Operation and Maintenance of e-Government Applications of 2022, which requires the establishment of effective frameworks for implementing maintenance and support services.

However, a review of maintenance arrangements indicated that, in all 18 assessed ICT systems in the visited public institutions, the engagement of maintenance support services was done upon request. Similarly, the acquisition of ICT equipment for maintenance was made using a normal procurement process. For example, in the case of software or hardware malfunction, public institutions could request the required goods directly from the vendor without undergoing a full procurement process, with payments to be settled later.

Moreover, further review of the annual procurement plans and maintenance schedules indicated that public institutions relied on normal procurement methods to acquire items or engage in expertise for maintenance services.

For instance, hardware replacement arrangements for all of 6 visited public institutions used the normal procurement procedures whenever there were emergencies. This implies that all the visited 6 institutions used normal approaches to undertake maintenance services.

Consequently, adopting normal procurement procedures in acquiring ICT equipment during maintenance and emergencies might result in prolonged downtimes and inefficiencies in the management of critical ICT infrastructure. For instance, the inability to immediately replace a damaged server may result in prolonged service interruptions, thus affecting service availability and compromising business operations.

### 3.5.3 Ineffective Oversight on ICT Hosting Facilities

The audit team found that some of the visited public institutions were hosting ICT systems in facilities that were not approved by the e-Government Authority. This practice was contrary to section 25(b) of the e-Government Act of 2019. In this regard, the hosting of ICT in government-approved hosting facilities is a way of providing assurance on the security of government information, thus preventing risks of data breaches and guaranteeing continuity of service provision that ensures business continuity.

Moreover, the review of hosting environments found that, the developed systems were hosted in two main categories of hosting facilities, primary and secondary hosting facilities, to provide redundancy. While the assessment indicated that, secondary hosting facilities included the Government Data Centre and National Internet Data Centre. In this case, the primary hosting facilities were located on institutional premises or other locations managed by the respective institutions. However, the Authority did not grant the required approvals for the hosting facilities. The extent of approvals of primary and secondary hosting facilities from the visited public institutions is presented in **Table 3.22**.

**Table 3.22: The Extent of Approvals of Primary Hosting Facilities**

| Institution | Name of a System | Primary Hosting Facilities | Status of Approval |
|---|---|---|---|
| PO-RALG | PLANREP | PO-RALG Data Centre | Not Approved |
| MLHHSD | ILMS | National Land Information Centre | Not Approved |
| MLHHSD | ILCMIS | National Land Information Centre | Not Approved |

| Institution | Name of a System | Primary Hosting Facilities | Status of Approval |
|---|---|---|---|
| TRA | IDRAS | TRA Data Centre | Not Approved |
| TRA | ECTS | TRA Data Centre | Not Approved |
| PO-RALG | TPLMIS | PO-RALG Data Centre | Not Approved |
| PO-RALG | IMES | PO-RALG Data Centre | Not Approved |
| TRA | iTAX | TRA Data Centre | Not Approved |
| TRA | TEMS | TRA Data Centre | Not Approved |
| MoH | HPRS | NIDC | Approved |
| MoH | eIDSR | NIDC | Approved |
| MoF | CBMS | Government Data Centre | Approved |
| MoH | NSMIS | NIDC | Approved |
| MoF | MUSE | Government Data Centre | Approved |
| eGA | mGov | Government Data Centre | Approved |
| eGA | GISP | Government Data Centre | Approved |
| MoH | UCS | NIDC | Approved |
| MoF | GSPP | Government Data Centre | Approved |

*Source:* Auditors' Analysis of Hosting Data, 2024

**Table 3.22** indicates that public institutions have been hosting their systems in facilities that were not approved by the government. In this regard, it was found that, 9 out of 18 systems, equivalent to 50% of the systems, were being hosted at primary hosting facilities that were not approved by the e-Government Authority. It was further revealed that, the remaining 9 systems were being hosted at primary facilities under the Government Data Centre (GDC) and the National Internet Data Centre (NIDC), which the Authority approved.

Furthermore, a review of correspondence documents between the e-Government Authority and public institutions revealed that, there was inadequate enforcement of the approval requirements in public institutions. This means that public institutions continued to host their systems in their own facilities without being adequately informed that they had to be approved by the eGovernment Authority.

Consequently, the tendency of hosting facilities without being approved by the Government posed the systems with risks of disasters that could significantly interrupt service provision. Thus, ultimately affects service delivery objectives. Meanwhile, hosting systems in an unapproved environment exposes the systems and the country at large to the risk of data breaches and loss of government data or information.

### 3.5.4 Inadequate Maintenance Management of Data Centres

The audit team found that, there were several areas where these requirements were not met. This practice was contrary to the requirement of paragraph 2.10.9 of the Data Centre Standards for Public Institutions of 2020, which emphasises that, public institutions have to ensure that, for non-mission essential data Centres services are maintained with minimum service availability of 99.7% (22 hours of downtime yearly). It is further emphasised that, all components of the data Centre facility are checked regularly in order to ensure that, everything is in its proper operations and proper documentation is observed as well.

A review of the Government ICT Services Portal of 2022 indicates that, e-GA has not adequately ensured documentation of the hosting plans[18] of the proposed ICT projects to guarantee their security. In this case, 357 out of 438, equivalent to 81.5% of the documented ICT projects hosted internally, lacked information to ascertain whether appropriate security measures were in place to safeguard data. Similarly, 81 out of 438, which is equivalent to 18.5%, recorded ICT systems were hosted by third-party vendors or did not provide hosting information to e-GA. Meanwhile, 23 out of 438, which is equivalent to 5.3% of recorded ICT projects, were hosted off-site from either NIDC or GDC and relied on external support. The audit team suggests that the lack of documentation and oversight of this aspect poses risks regarding the confidentiality and integrity of sensitive government information.

Moreover, the audit team noted that, not all the assessed ICT systems in the visited public institutions conducted regular maintenance checks of their data centre facilities. In this case, 9 assessed ICT systems used the Government Data Centre and National Internet Data Centre (NIDC) for the Ministry of Finance, the Ministry of Health, and the Ministry of Lands, Housing and Human Settlements Development. Regardless of the proposed five-time periodical maintenance checks as per paragraph/section 2.2.2.2 of the Guidelines for Acquisition, Operations and Maintenance of e-Government Applications of 2020, it was noted that, there was no assurance

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[18] Subsection (1.6.1) of the Government ICT Project Review Criteria (Version 1.0, August 2014)

of maintenance being conducted at these institutions. However, some public institutions, including the e-Government Authority and Tanzania Revenue Authority, have conducted periodic checks of their data centres. The status of period checks is presented in **Table 3.23**.

**Table 3.23: Information Availability on Data Centre Maintenance to Hosted Institutions**

| Name of the Public Institution | Name of the Deployed ICT System | Name of the Host Data Centre | Frequency of Maintenance Information Sharing | |
|---|---|---|---|---|
| | | | Minimum Proposed No. (2019/20-2023/24)[19] * | Actual Conducted |
| e-Government Authority (e-GA) | GISP | Government Data Centre | 5 | 2 |
| | mGov | Government Data Centre | 5 | 2 |
| PO-RALG | IMES | Government Data Centre | 5 | 0 |
| | PLANREP | PO-RALG Data Centre | 5 | 2 |
| | TPLMIS | PO-RALG Data Centre | 5 | 3 |
| TRA | ITAX (e-filling) | NIDC | 12 | 9 |
| | IDRAS | NIDC | 12 | 9 |
| | TEMS | NIDC | 12 | 9 |
| | ECTS | NIDA | 12 | 9 |

*Source:* Auditors' Analysis of the Data from the Visited Public Institutions and Institutional Maintenance Plan, 2024

**Table 3.23** indicates that 9 systems from 3 public institutions conducted maintenance checks on their data at least once a year over a period of 5 years. These institutions included eGovernment Authority, TRA and PO-RALG. The periodic maintenance check was purposely conducted in order to provide assurance to the hosting facilities that the systems were hosted in a secure environment.

This was linked to a lack of awareness by ICT officers responsible for supervising the acquisition of ICT systems among public institutions

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[19] The suggested number of the maintenance checks is meant to be once per year, hence the frequency of inspections was to align with the assessed five financial years.

regarding the importance of regularly reviewing the terms and conditions for the hosting data centres.

Consequently, the lack of periodic maintenance checks in data centres exposed the systems to service interruptions and risks of data loss. Also, it poses security risks and raises concerns about the security and compliance with the mentioned data centres. Thus, without a proper review of the terms and conditions, sensitive data may be at risk of exposure or unauthorised access.

### 3.5.5 Ineffective Cost Control in Service and Maintenance Support for Deployed ICT Systems

The audit found that, visited public institutions did not implement cost control mechanisms for the ongoing service and maintenance of their systems. This practice was contrary to the requirement of paragraph 2.3.1 of the Standards for Development, Acquisition, Operation and Maintenance of e-Government Applications of 2022. The guideline requires public institutions to perform ongoing monitoring and maintenance of the system during the system maintenance cycle. This is purposely emphasised in order to ensure the performance and functionality of the system match the user's requirements.

Moreover, the audit found that, the visited public institutions were consistently unable to track and report costs for service and maintenance. The extent of cost estimation and records for the systems deployed in the visited public institutions is presented in **Figure 3.9**.

**Figure 3.9: The Identified Costs for In-service and Maintenance Costs**
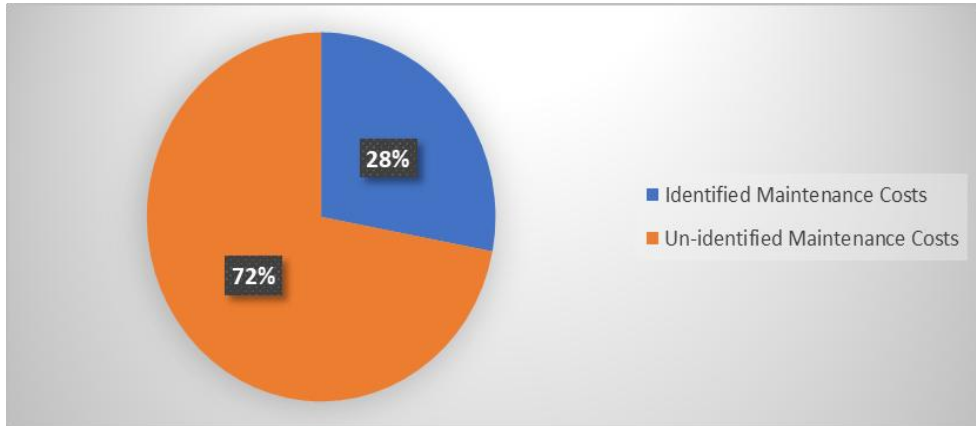


*Source*: Auditors' Analysis of Projects' Contracts, Concept Notes and Project Charter in the Visited Public Institutions, 2024

**Figure 3.9** indicates that public institutions did not effectively identify costs as part of cost control measures during maintenance. The analysis shows that, 72% of the total number of systems assessed did not identify costs for the respective projects. On the other hand, only 28% of the projects were able to estimate and track the maintenance costs during the execution.

Furthermore, it was identified that, government entities did not institute cost controls for the service and maintenance of ICT systems. This was partly due to inadequate risk management for ICT systems in public institutions. In this regard, public institutions lacked comprehensive risk management plans for their ICT assets, which were expected to include timelines and maintenance schedules.

Consequently, the absence of effective measures to control maintenance costs exposed public institutions to the risk of incurring higher costs during emergencies and maintenance operations. This resulted in the systems being prone to higher costs of services or equipment maintenance.

# CHAPTER FOUR

# AUDIT CONCLUSION

## 4.1 Introduction

This chapter provides a conclusion of the audit. The basis for the conclusion is the general and specific audit objectives of this audit. The general and specific conclusions are presented as follows:

## 4.2 The General Conclusion

The audit concludes that, the oversight function undertaken by the e-Government Authority to public institutions has not been effective in providing assurance and guarantees that internally developed ICT systems are cost-effective. Public institutions have continued to acquire ICT systems with inadequate cost control measures and considerations that are geared towards developing systems in a cost-effective manner. Similarly, the documentation and estimation of costs for the acquired ICT systems are still not clearly understood by the practitioners in the industry. Thus, the documentation of costs related to system development activities is not adequately emphasised. This is because it is not regarded as an essential aspect of ICT project management.

Moreover, the audit also concludes that, the oversight function undertaken by the e-Government Authority to public institutions has not ensured the planning and implementation of cost-effective internally developed ICT systems.

Furthermore, there has been inadequate consideration of cost control measures during the planning, development, and deployment of the respective systems. This has led to unforeseen costs after deploying the respective systems. On the other hand, public institutions have not been able to implement cost-control measures during the maintenance and support phase. This has led to the generation of unforeseen costs that were not forecasted in the planning, development and deployment phases.

## 4.3 Specific Conclusions

The following are the specific audit conclusions:

### 4.3.1 Public Institutions have been Acquiring Costly ICT Systems

The e-Government Authority (e-GA) has not been well-informed to perform its oversight function necessary to ensure that the acquired ICT systems across public institutions are cost-effective and comply with the established standards and guidelines. This was due to insufficient documentation and tracking of internally developed ICT systems. In addition, the lack of regular review and tracking meant that potential issues regarding the cost-effectiveness of the developed ICT systems were not found to be addressed on time.

The public institutions are not adequately assessing and evaluating their project portfolios to identify the extent to which their systems are cost-effective. As a result, the institutions end up acquiring systems under conditions that bring about risks of acquiring ICT systems that are relatively costly.

### 4.3.2 There is no Assurance on Consideration and Implementation of Cost Control Measures in Planning to Acquire ICT Systems

The e-Government Authority (e-GA) has not ensured public institutions adequately identify and consider long-term and indirect costs associated with ICT software acquisition. This has led to unrealistic budget estimates. This inadequacy in cost estimation has led to additional post-implementation costs.

The e-Government Authority has not ensured adequate engagement of system stakeholders during the preparation of system requirements and system designs. This resulted in additional costs in development and after the implementation as a result of frequent change requests or system redesigns. This tendency increased the total costs of ownership for the deployed systems among the public institutions. Also, the e-Government Authority has not ensured adequate planning for the estimated costs during the requirements gathering and project design phases in public institutions.

The oversight has resulted in increased budgets and challenges in cost management.

Moreover, the e-Government Authority has not ensured that public institutions analyse and evaluate costs for internally developed ICT systems, which could help inform decisions regarding ICT system acquisition. Currently, there is no structured approach to cost analysis for internally developed systems that allows for cost comparison with commercially available software. Without such analysis, there is a risk that public institutions might overinvest in custom-developed solutions when alternative, cost-effective options are available. The delivered systems have not been able to effectively engage stakeholders in such a manner that they would provide an assurance that the deployed systems are useful and capture the needs of all the key stakeholders.

The e-Government Authority has not ensured that public institutions identify costs associated with support applications during project budgeting. The oversight results in underestimations of the total cost of system ownership, with unforeseen expenses accumulating over the system's lifecycle.

### 4.3.3 e-GA is not Ensuring that Public Institutions Effectively Consider and Implement Cost Control Measures when Developing and Deploying ICT Systems

The current level of oversight by the e-Government Authority has not provided sufficient assurance that, public institutions will consider and implement cost-control measures while acquiring ICT Systems. This has resulted in inadequacies observed in the whole system of developing and deploying ICT systems in public institutions.

Public institutions have been acquiring systems which are accompanied by cost overruns as a result of inadequate controls for timelines and scope management. This emanated from, among other things, inadequate project cost management, which contributed to inadequacies that have contributed to inadequate documentation, estimation and access to cost information, particularly for donor-funded ICT projects. Furthermore, public institutions are not effectively undertaking the required tests for the developed systems, which provide assurance of the quality of systems and the

guarantee of not experiencing breakdown during operations. This may result in additional costs or losses in the production environment.

In addition, there has been inadequate identification of costs for the public institutions. There is a limited scope of costs identified in the planning documents and during the development and deployment of ICT systems. As a result, the total costs of ownership are underestimated. Nevertheless, the systems have been able to provide immediate outcomes by shortening the processing times and reducing the costs of acquiring services among public institutions.

### 4.3.4 There is no Assurance on the Implementation of Cost Control Measures during the Maintenance and Support of Internally Developed ICT Systems

The current systems for cost control during the maintenance of the acquired ICT systems do not provide assurance that the developed ICT systems would undergo maintenance in a cost-effective manner. The costs that are incurred during the maintenance period were not properly forecasted during the planning stages. This has led to public institutions facing an increased cost of ownership of the ICT systems due to increased costs which were not predicted before. The acquired systems are not being delivered in a timely manner that guarantees cost-effective deployment in order to safeguard the value for money and meet the customer's needs in a timely manner.

Moreover, public institutions have continued to adopt cost-ineffective means of maintaining their systems. This includes using procurement approaches that do not guarantee immediate delivery of equipment when institutions are faced with emergencies that demand immediate fixing of the encountered challenges.

# CHAPTER FIVE

## AUDIT RECOMMENDATIONS

### 5.1    Introduction

The audit findings and conclusions pointed out inadequacies in the internal development of ICT Systems in a manner that ensures cost-effectiveness as managed by the e-Government Authority (eGA) and the respective public institutions as implementers. Areas for further improvements have been identified in the internal development of ICT Systems in the public sector, as well as the oversight role of e-GA.

In order to resolve the identified inadequacies, improvements are recommended in the management of internal development of ICT systems, which have to establish systems for cost controls and, therefore, provide an assurance of acquiring cost-effective systems.

### 5.2   Recommendations to the e-Government Authority

The Management of e-Government Authority is urged to:

a) Revise the project review criteria in order to set clear requirements for identifying and estimating long-term and short-term costs associated with the internally developed ICT systems;

b) Ensure that, all the estimated and actual costs of the deployed ICT systems in public institutions are properly documented and reported to inform the financial aspects based on project completion;

c) Enhance the performance of regular assessments of internally developed ICT systems in order to ensure their cost-effectiveness;

d) Enhance internal capacity in skills and knowledge for systems development and maintenance and in providing support to other public institutions towards ensuring cost-effectiveness of the internally developed ICT systems; and

e) Ensure public institutions engage relevant key stakeholders and ICT systems from development to deployment.

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# APPENDICES

## Appendix 1: Responses from e-Government Authority

This part provides responses from the President's Office - Public Service Management and Good Governance (PO-PSMGG) on the recommendations issued by the CAG.

## General Comments

e-Government will continue performing its mandates in line with the e-Government Act, 2019, e-Government General Regulations, 2020 and existing e-Government Standards and Guidelines.

## Specific Comments

| S/N | Recommendation | Comments | Planned Action | Implementation Timeline |
|-----|----------------|----------|----------------|------------------------|
| 1 | Revise the project review criteria to set clear requirements for identifying and estimating long-term and short-term costs associated with the internally developed ICT systems. | e-GA Management has noted the auditor's recommendation for implementation.<br><br>The Authority has established and operationalized e-government project review criteria, which are reviewed by the Government ICT Projects using those criteria. Among other things, aspects of costs such as operation and maintenance costs were considered. | In line with Objective D of e-Government Strategic Plan 2021/22 – 2025/26, the Authority will;<br><br>i) Ensure ICT project review criteria accommodate elements of identifying and estimating long-term and short-term costs associated with the | FY 2025/2026-FY 2026/2027 |

| S/N | Recommendation | Comments | Planned Action | Implementation Timeline |
|-----|----------------|----------|----------------|------------------------|
| | | | developed systems more clearly. <br>ii) Continue conducting awareness sessions to enhance the capacity of public institutions to identify and estimate long-term and short-term costs associated with the developed systems. | |
| 2 | To ensure all estimated and actual costs of the deployed ICT systems in public institutions are properly documented and reported to inform the financial aspects upon project completion. | e-GA Management has noted the auditor's recommendation for implementation.<br><br>i)   As part of ensuring all costs of the deployed ICT system are reported, the Authority has been reviewing and reminding public institutions on submission of complete and accurate ICT initiatives as well as updating their information through the Government ICT Services Portal- GISP available through https://gisp.gov.go.tz/<br><br>ii)  Further, the authority has issued Guidelines for the | In line with Objective D of e-Government Strategic Plan 2021/22 – 2025/26, the Authority will;<br><br>i)   Continue to perform compliance assessments of public institutions to ensure the Steering committees perform their duties of ensuring continuous monitoring and evaluation of institutional ICT | FY 2024/2025 -FY 2025/2026 |

| S/N | Recommendation | Comments | Planned Action | Implementation Timeline |
|---|---|---|---|---|
| | | Operationalization of Institutional ICT Steering committees to assist Public institutions in executing their mandates as required under section 18(3) of the e-Government Act Na. 10 of 2019, including their task of ensuring continuous monitoring and evaluation of institutional ICT projects.<br><br>iii) The Authority has collaborated with the Internal Auditor General – IAG to provide awareness and training to Internal Auditors from Public Institutions on e-Government Related policies, laws, regulations, standards, and guidelines so that compliance on the matter is closely enforced and achieved at the individual institutional level. | projects in the institutions, including the cost aspects of the projects and the systems in operation as required by the law.<br><br>ii) The Authority will enhance the GISP to enable public institutions to submit estimated and actual costs of the internally developed ICT system to address the financial aspects more comprehensively. | |
| 3 | Enhance the performance of regular assessments of internally developed ICT systems to ensure their cost-effectiveness. | e-GA Management has noted the auditor's recommendation for implementation.<br><br>So far, the Authority has taken the following initiatives: | In line with Objective D of e-Government Strategic Plan 2021/22 – 2025/26, the Authority will; | FY 2025/2026 |

| S/N | Recommendation | Comments | Planned Action | Implementation Timeline |
|---|---|---|---|---|
| | | i) As part of ensuring internally developed ICT systems by public institutions are cost-effective, the Authority performs regular ICT project inspections, compliance assessments, security assessments and system reviews to provide a clear overview and visibility on the aspect of the cost-effectiveness of the internally developed system.<br><br>ii) Also, the Authority developed and operationalized GISP to review the concept notes of the ICT project to make sure the developed system is cost-effective.<br>iii) The Authority developed and operationalized Standards and Guidelines for Acquisition, Operations and Maintenance of e-Government applications. The mentioned Standards and Guidelines set controls for the whole life cycle of ICT systems planning, acquisition, development, maintenance, and operations to ensure the cost- | **(i)** Enhance the performance of regular ICT inspections, compliance assessments, security assessments and system reviews to ensure internally developed ICT systems by public institutions.<br>**(ii)** Continue follow-up on implementation of the recommendation provided in various assessments to ensure that internally developed systems are cost-effective.<br>**(iii)** Collaboration with the Internal Auditor General –IAG to provide awareness and training to Internal Auditors from Public<br><br>Institutions on e-Government | |

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| S/N | Recommendation | Comments | Planned Action | Implementation Timeline |
|-----|----------------|----------|----------------|-------------------------|
| | | effectiveness of the internally developed ICT systems.<br><br>iv) Further, the authority has issued Guidelines for the Operationalization of Institutional ICT Steering committees to assist Public institutions in executing their mandates as required under section 18(3) of the e-Government Act Na. 10 of 2019, including their task of ensuring continuous monitoring and evaluation of institutional ICT projects.<br><br>v) The Authority has collaborated with the Internal Auditor General – IAG to provide awareness and training to Internal Auditors from Public Institutions on e-Government Related policies, laws, regulations, standards, and guidelines so that compliance on the matter is closely enforced and<br><br>vi) achieved at the individual institutional level. | Related policies, laws, regulations, standards, and guidelines so that compliance on the matter is closely enforced and achieved at the individual and institutional levels. | |
| 4 | Enhance internal capacity in skills and knowledge for systems development | e-GA Management has noted the auditor's recommendation for implementation. | In line with Objective D of e-Government Strategic Plan 2021/22 – 2025/26; | FY 2024/2025 -FY 2026/2027 |

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| S/N | Recommendation | Comments | Planned Action | Implementation Timeline |
|---|---|---|---|---|
| | and maintenance and in providing support to other public institutions towards ensuring the cost-effectiveness of the internally developed ICT systems. | The e-Government Authority Management, through its Directorate of Corporate Services, conducted a Training Needs Assessment (TNA) to its staff, which needs to be undertaken through both short-term and long-term solutions, which has resulted in an Annual Training Plan. The Authority implemented the plan in order to provide staff with the necessary skills and knowledge to help them to deliver their respective assigned duties.<br><br>The Authority Training Plan has been prepared with the purpose of giving a road map for accomplishing both short- and long-term staff training needs (emanating from the training needs assessment conducted) by adhering to a well-set up timetable and budget. The plan will, therefore, be a cornerstone for achieving maximum performance from each individual staff member, which will consequently result in the attainment of the Authority's objectives. | The Authority will<br>(i) Continue developing and operationalizing the Training Plan, which reflects the e-Government Strategic Plan with the guidance towards building capacity and skills of staff necessary in line with the e-GA strategic plan and available training budget for the respective financial year.<br>(ii) Provide technical support to ensure that the development of internal ICT systems is cost-effective.<br>(iii) Conduct technical training to capacitate internal auditors and security SPOC<br>(iv) Collaboration with the Internal Auditor | |

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| S/N | Recommendation | Comments | Planned Action | Implementation Timeline |
|---|---|---|---|---|
| | | Moreover, as part of support to Public Institutions' the Authority to date has already conducted awareness sessions on aspects related to ICT project management, Security management and Compliance with 385 public institutions where, among other things, elements of system development and maintenance are taken care of. | General –IAG to provide awareness and training to Internal Auditors from Public Institutions on e-Government Related policies, laws, regulations, standards, and guidelines so that compliance on the matter is closely enforced and achieved at the individual and institutional levels. | |

| S/N | Recommendation | Comments | Planned Action | Implementation Timeline |
|---|---|---|---|---|
| 5 | Ensure public institutions engage relevant key stakeholders and ICT systems from development to deployment. | e-GA Management has noted the auditor's recommendation for implementation.<br><br>The Authority has established and operationalized Government ICT Project Review Criteria, where, among other things, stakeholder engagement criteria take care of the involvement of technical experts in the ICT systems being acquired throughout the project lifecycle. Also, as part of enforcement, the Authority reviews the ICT project for clearance as well as, after clearance, performs ICT project inspection where, in both cases, among other things, aspect of stakeholder engagement is regularly reviewed and recommended in accordance with e-Government, Act 10, 2019, its Regulations, Standards and Guidelines. | In line with Objective D of e-Government Strategic Plan 2021/22 – 2025/26;<br><br>(i) The Authority will continue conducting awareness sessions, technical training, and ICT project inspections on ICT project management to public institutions.<br>(ii) Ensure stakeholder engagement is among the key criteria stipulated in standard ICT Project Review Criteria, and that is always explained in every formal issued advisory that goes to a public institution as approval. | FY 2025/2026 |

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## Appendix 2: List of Audit Questions and Sub-Audit Questions

This part provides the list of audit questions and subquestions which were used during the audit.

| Audit Question 1 | Are there public institutions that have acquired and hosting ICT Systems which are not cost-effective? |
|---|---|
| Sub-Question 1.1 | Is there an effective review and update of the cost-effectiveness of software assets in the Government? |
| Sub-Question 1.2 | To what extent are public institutions acquiring ICT systems that are not cost-effective? |
| Audit Question 2 | Does the e-Government Authority ensure public institutions effectively consider and implement cost control measures when planning to acquire ICT Systems? |
| *Sub-Question 2.1* | Are all potential costs related to requirement gathering and system design effectively identified and estimated? |
| *Sub-Question 2.2* | Are public institutions conducting a thorough analysis and evaluation of the total direct and indirect cost of acquiring new ICT application systems? |
| *Sub-Question 2.3* | Do the cost analysis and evaluation results inform the decisions and choice of ICT Systems to be acquired? |
| *Sub-Question 2.4* | Are there effective review and approval measures to ensure that the planned ICT Systems to be acquired do not duplicate the efforts of other ready-made systems? |
| *Sub-Question 2.5* | Are all stakeholders effectively engaged in the identification of ICT system requirements to ensure that all functional and non-functional requirements are adequately included in business cases? |
| *Sub-Question 2.6* | Does the total cost of ownership justify the system's design lifetime? |
| *Sub-Question 2.7* | Are there adequate estimates and considerations of costs associated with licence fees for all common-use ICT support applications? |
| *Sub-Question 2.8* | Do public institutions prepare system designs that assure functionality, usability and maintainability? |
| Audit Question 3 | Does the e-Government Authority ensure public institutions effectively consider and implement cost control measures when developing and deploying ICT Systems? |
| *Sub-Question 3.1* | Do public institutions effectively implement measures to control costs involved in undertaking development/programming activities? |
| *Sub-Question 3.2* | Are the total direct and indirect costs involved in the development and deployment of ICT Systems reasonable? |

| | |
|---|---|
| *Sub- Question 3.3* | Are the ICT Systems deployed in an environment that supports business continuity? |
| *Sub- Question 3.5* | Were pre-development, development and deployment activities and timelines effectively controlled to prevent delays and cost overruns? |
| *Sub-Question 3.6* | Are there realisable outcomes/benefits of the acquired ICT System? |
| *Sub-Question 3.7* | Do public institutions effectively undertake all testing activities for developed systems prior to deployment? |
| *Sub- Question 3.8* | Are the deployed systems hosted in reliable and secure data centres? |
| *Sub- Question 3.9* | Are the institutional internal development staff engaged sufficiently during the system's development to ensure effective knowledge transfer? |
| *Sub-Question 3.10* | Are users satisfied with the functionalities of the deployed systems? |
| *Sub-Question 3.11* | Do users effectively utilise the system functionalities during operations? |
| **Audit Question 4** | **Does the e-Government Authority ensure public institutions effectively implement cost control measures during maintenance and support of the deployed ICT Systems?** |
| *Sub-Question 4.1* | Did the e-Government Authority ensure effective cost-control measures in managing software licenses and post-implementation events after deployment of the systems? |
| *Sub-Question 4.2* | Did the e-Government Authority ensure effective cost control in service and maintenance support for the deployed ICT Systems? |
| *Sub-Question 4.3* | Did the e-Government Authority proactively implement a maintenance schedule for the deployed ICT Systems? |
| *Sub-Question 4.4* | Did the e-Government Authority monitor key performance indicators (KPIs) relating to maintenance and support, such as response times, resolution times, and user satisfaction? |

## Appendix 3: List of Documents Reviewed and Reasons for Reviews

This part provides the list of documents which were reviewed during the audit and the reasons for reviewing them.

| Category of Documents | Title of Documents Reviewed | Reasons for Review |
|---|---|---|
| Planning for Acquisition of ICT Systems | • Business Case Document<br>• Systems Requirements Specifications (SRS)<br>• Approvals (Internal/AO and External/e-GA)<br>• System Design Documents (SDD)<br>• Stakeholders Engagement Reports<br>• Appraisal Document<br>  ○ Proposals<br>  ○ Feasibility Reports<br>  ○ Concept Notes<br>• Advisory Notes from e-GA<br>• GISP Software Assets Report<br>• GISP ICT Projects Report | To establish the extent of consideration and implementation of cost control measures when planning to acquire ICT Systems in the Government.<br><br>To obtain causes for observed conditions as a result of assessing conditions based on assessment criteria |
| Development and Deployment of ICT Systems | • Systems Deployment Reports<br>• Tested and Approved Source Codes and Corresponding Documentation<br>• Development/Programming Reports<br>• Test Reports<br>  ○ Unit Tests<br>  ○ Integration Tests<br>  ○ User Acceptance Tests<br>• System Monitoring Reports<br>• System Logs<br>• Audit Trails<br>  ○ System Level<br>  ○ Application Level<br>  ○ Network Level<br>• Patch Notes<br>• Change Logs<br>• Release Notes (If applicable) | To establish the extent of consideration and implementation of cost control measures when developing and deploying ICT Systems in the Government.<br><br>Obtain evidence of the observed conditions as a result of assessing deviations of conditions from criteria.<br><br>To obtain causes for observed conditions as a result of assessing conditions based on assessment criteria. |
| Maintenance and Support | • Post-Implementation Notes<br>• Maintenance Reports<br>• Change Requests and Documentations | To establish the extent of consideration and implementation of cost control measures during |

| Category of Documents | Title of Documents Reviewed | Reasons for Review |
|---|---|---|
| | • Update Notes<br>• Re-design Reports (if any) | maintenance and support for the deployed ICT systems.<br><br>Obtain and document evidence of the observed conditions as a result of assessing deviations of conditions from the criteria.<br><br>To obtain causes for observed conditions as a result of assessing conditions based on assessment criteria. |

*Source:* Auditors' Analysis of the List of Reviewed Documents, 2024

**Appendix 4: List of Duplicate ICT Systems as per the Listed System Category**

This part provides the names of institutions with duplicate ICT Systems as per the list of system categories.

| System Category/Sector | Name of the Institution | Name of the System(s) | Budgeted Amount (In TZS) |
|---|---|---|---|
| Student Management | Institute of Rural Development Planning (IRDP) | Student Records System (SRS) | Not Available |
| | Dar es Salaam Institute of Technology | Online Students Information System (OSIM) | Not Available |
| | National Institute of Transport | Student Academic Register Information System (SARIS) | 7,000,000 |
| | | Student Information Management System | 13,000,000 |
| | | Student Information Management System (Short Course) | 5,000,000 |
| | Institute of Finance Management (IFM) | Student Information Management System (Short Course) | 5,000,000 |
| | Water Institute (WI) | Student Information Management System | 26,500,000 |
| | President's Office – Regional Administration and Local Government (PO-RALG) | Enterprise Resource Planning - ERP | Not Available |
| | Public Procurement Regulatory Authority (PPRA) | Enterprise Resource Planning | Not Available |

| System Category/Sector | Name of the Institution | Name of the System(s) | Budgeted Amount (In TZS) |
|---|---|---|---|
| Fleet Transport Management | Mwanza Urban Water and Sanitation Authority | Fleet and Generator Management System | 82,907,200 |
| | Tanzania Telecommunication Corporation Limited (TTCL) | Fleet Management | 10,000,000 |
| HR Management | National Housing Corporation (NHC) | Human Resource Management System-HRM | 46,920,000 |
| | PO-PSMGG | Human Capital Management Information System (HCMIS) | Not Available |
| | National Social Security Fund (NSSF) | Human Resource Management System (HRMS) | Not Available |
| | Mwanza Urban Water and Sanitation Authority | Human Resource and Payroll System (Aruti) | 100,000 |
| | Tanzania Shipping Agencies Corporation (TASAC) | Aruti Payroll and Human Resource Management System | 84,999,884 |
| | Public Service Social Security Fund (PSSSF) | Human Resource Payroll System | Not Available |
| Financial Management | National Housing Corporation (NHC) | Vote-Book Financial Management Information System - VFMIS | 16,100,000 |
| | President's Office – Regional Administration and Local Government (PO-RALG) | Facility Financial Accounting and Reporting System - FFARS | 1,100,000,000 |
| | National Social Security Fund (NSSF) | Financial Management System (FMS) | Not Available |
| | Ministry of Finance | Mfumo wa Uhasibu Serikalini (MUSE) | 8,836,016,417 |

Source: Auditors' Analysis of the ICT Project Spreadsheets and List of ICT System from Visited Public Institutions, 2024

## Appendix 5: Selection of ICT Systems which were assessed in the visited Public Institutions

This part provides an overview of the steps in selecting ICT systems that were assessed during the audit.

| Sector Rank Based on ICT (Portfolio Load Ratio) | Ranked Sector ICT Inhouse Portfolio Load | Selected Institution | Ranked and Selected ICT Systems Within the Institution |
|---|---|---|---|
| Financial Sector (0.4) | 1. Tanzania Revenue Authority 2. Ministry of Finance 3. Bank of Tanzania | • Tanzania Revenue Authority[20] • Ministry of Finance | **Ministry of Finance** • Mfumo wa Uhasibu Serikalini (MUSE) • Centralised Budget Management System (CBMS) • Government Salary Payment Portal (GSPP)  **Tanzania Revenue Authority** • Integrated Tax Administration System (ITAX) • Integrated Domestic Revenue Administration System (IDRAS) • Tax Exemption Management System (TEMS) • Electronic Cargo Tracking System (ECTS) |
| ICT Sector (0.2) | 1. e-Government Authority 2. National Internet Data Centre (NIDC) 3. Ministry of Communication and Information Technology | • e-GA | • Government Mobile Platform (m-Gov) • **Government ICT Service Portal (GISP)** |
| Health Sector (0.2) | 1. Ministry of Health | • Ministry of Health | • Unified Community System • Tanzania Health Practitioners Registration System (THPRS) • National Sanitation Management Information |

[20] The Financial Sector selected 2 institutions based on its Portfolio Load Ratio being higher then the other at 0.4

| Sector Rank Based on ICT (Portfolio Load Ratio) | Ranked Sector ICT Inhouse Portfolio Load | Selected Institution | Ranked and Selected ICT Systems Within the Institution |
|---|---|---|---|
| | | | System (NSMIS)<br>• Electronic Integrated Disease Surveillance and Response (eIDSR) |
| Administrative Sector (0.1) | 1. PO-PSMGG<br>2. PO-RALG<br>3. PSRS | • PO-RALG | • Planning, Budgeting and Reporting System – PLANREP<br>• Integrated Monitoring and Evaluation System (IMES)<br>• Ten Percent Loan Management Information System |
| Land Sector (0.1) | 1. MLHHSD<br>2. Ardhi Institute<br>3. National Land Planning Commission | • MLHHSD | • Integrated Land Management Information System (ILMIS)<br>• Integrated Land Case Management system (ILCMS) |

*Source:* Auditors' Analysis of the List of ICT Project from e-GA, 2024

## Appendix 7: List of the Assessed ICT Systems with Detailed Documented Costing Aspects

This part shows the list of ICT systems with the details of the documented cost aspect.

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|----|------------------|------------------|--------------------|-------------------|--------------------|-------------------------------|
| 1 | SELFORM | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 2 | HUMAN RESOURCE MANAGEMENT SYSTEM-HRM | NATIONAL HOUSING CORPORATION(NHC) | - | 23,920,000 | 6,900,000 | - |
| 3 | RDDSS AGING | SHINYANGA URBAN WATER SUPPLY AND SANITATION AUTHORITY(SHUWASA) | - | - | 4,000,000 | 5,000,000 |
| 4 | VOTEBOOK MANAGEMENT SYSTEM | DAR ES SALAAM INSTITUTE OF TECHNOLOGY | - | - | - | - |
| 5 | CALL CENTRE | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 6 | ELECTRONIC CARGO TRACKING SYSTEM | TANZANIA REVENUE AUTHORITY | - | 263,000 | - | - |
| 7 | EPICOR 10.2 | TANZANIA NATIONAL ROADS AGENCY | - | - | 40,000,000 | - |
| 8 | FISHERIES MANAGEMENT SYSTEM | MINISTRY OF LIVESTOCK AND FISHERIES (FISHERIES SECTOR) | 4,103,405 | - | 8,000,000 | - |
| 9 | PROCUREMENT MANAGEMENT INFORMATION SYSTEM | PUBLIC PROCUREMENT REGULATORY AUTHORITY | - | - | 9,600,000 | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 10 | MSD PROOF OF DELIVERY (POD) | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 11 | GSPP | LINDI MUNICIPAL COUNCIL | - | - | - | - |
| 12 | HFR | MINISTRY OF HEALTH | - | - | - | - |
| 13 | WINDOWS 10 | KILWA DISTRICT COUNCIL | - | - | - | - |
| 14 | T24 CORE BANKING SYSTEM | TIB DEVELOPMENT BANK LTD | - | - | 378,350,000 | - |
| 15 | ENTERPRISE RESOURCE PLANNING | PUBLIC PROCUREMENT REGULATORY AUTHORITY | - | - | - | - |
| 16 | REA WEBSITE WWW.REA.GO.TZ | RURAL ENERGY AGENCY - REA | - | - | - | 15,000,000 |
| 17 | IT AUDITS SOFTWARE FROM NETWRIX | ROADS FUND BOARD | - | 14,890,080 | 2,680,214 | - |
| 18 | OPEN JOURNAL SYSTEM | INSTITUTE OF FINANCE MANAGEMENT (IFM) | - | - | - | 1,000,000 |
| 19 | INTERNAL PROCESS MANAGEMENT SYSTEMS | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 20 | CARTRACK | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 21 | MOCLAMIS | MINISTRY OF CONSTITUTIONAL AND LEGAL AFFAIRS | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|----|-----------------|------------------|--------------------|-------------------|--------------------|-------------------------------|
| 22 | FUNDS MANAGEMENT INFORMATION SYSTEM (FMIS) | RURAL ENERGY AGENCY - REA | - | - | - | - |
| 23 | E-MONITORING APPLICATION | ROADS FUND BOARD | - | - | - | - |
| 24 | TIIS | MINISTRY OF HEALTH | - | - | - | - |
| 25 | WINDOWS SERVER 2019 | WEIGHTS AND MEASURES AGENCY | - | - | - | - |
| 26 | SAGE | TANZANIA RAILWAYS CORPORATION | - | 8,674 | - | - |
| 27 | MAIL SERVER | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 28 | PROGRAM MANAGEMENT SYSTEM | TANZANIA COMMISSION FOR UNIVERSITIES (TCU) | - | - | - | - |
| 29 | INSURANCE MANAGEMENT INFORMATION SYSTEM - IMIS | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT(TAMISEMI) | - | 1 | - | - |
| 30 | BMS | BANK OF TANZANIA | - | - | - | - |
| 31 | TOMSHA | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 32 | INTRANET SITE | PUBLIC PROCUREMENT REGULATORY AUTHORITY | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 33 | STUDENT INFORMATION MANAGEMENT SYSTEM (SHORT COURSE) | NATIONAL INSTITUTE OF TRANSPORT | - | - | 300,000 | - |
| 34 | ARCGIS ENTERPRISE 10.6 | RURAL ENERGY AGENCY - REA | - | - | - | - |
| 35 | KASPERSKY | KILWA DISTRICT COUNCIL | - | - | - | - |
| 36 | BASIC EDUCATION MANAGEMENT INFORMATION SYSTEM(BEMIS) | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 37 | TCU RESOURCE CENTRE WEBSITE | TANZANIA COMMISSION FOR UNIVERSITIES (TCU) | - | - | - | - |
| 38 | POSTAL MONITORING SYSTEM | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | 37,000,000 | 30,000,000 | - |
| 39 | DROMAS2 | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT(TAMISEMI) | - | - | - | - |
| 40 | NESSUS PROFESSIONAL | E-GOVERNMENT AUTHORITY | - | 2,500 | - | - |
| 41 | TARURA REVENUE INFORMATION SYSTEM - TRIS | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT(TAMISEMI) | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 42 | LICENCE MANAGEMENT INFORMATION SYSTEM (LMIS) | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 43 | GOVERNMENT SALARY PAYMENT PLATFORM(GSPP) | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 44 | MFUMO WA MANUNUZI SERIKALINI | MARINE PARKS AND RESERVES | - | - | - | - |
| 45 | MAN 3000 | TANZANIA NATIONAL BUSINESS COUNCIL | - | - | - | - |
| 46 | SIGI-ONE | TANGA WATER SUPPLY AND SANITATION AUTHORITY | - | - | - | - |
| 47 | AIA HRM PAYWIZ | SHINYANGA URBAN WATER SUPPLY AND SANITATION AUTHORITY(SHUWASA) | - | - | 4,000,000 | 5,000,000 |
| 48 | ENTERPRISE RESOURCE MANAGEMENT SUITE (ERMS) | PHARMACY COUNCIL | - | - | - | - |
| 49 | HRMS | TANZANIA TELECOMMUNICATION CORPORATION | - | - | - | - |
| 50 | SAGE | DAR ES SALAAM STOCK EXCHANGE-DSE | - | 100 | 4,000,000 | - |
| 51 | TRA WEBSITE | TANZANIA REVENUE AUTHORITY | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 52 | E-LEARNING MANAGEMENT SYSTEM | NATIONAL INSTITUTE OF TRANSPORT | - | - | - | - |
| 53 | WEBSITE | PUBLIC PROCUREMENT REGULATORY AUTHORITY | - | - | - | 2,600,000 |
| 54 | WINDOWS 7 | KILWA DISTRICT COUNCIL | - | - | - | - |
| 55 | TANZANIA NATIONAL E-PROCUREMENT SYSTEM (TANEPS) | PUBLIC PROCUREMENT REGULATORY AUTHORITY | - | - | 109,500 | - |
| 56 | EFILE | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 57 | TANEPS | GEITA URBAN WATER SUPPLY AND SANITATION AUTHORITY (GEUWASA) | - | 1 | - | - |
| 58 | ASSET MANAGEMENT SYSTEM | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 59 | PRMS | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 60 | SARIS | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 61 | TPPS | MINISTRY OF FINANCE AND PLANNING | - | - | - | - |
| 62 | MICROSOFT ADMINISTRATION AND MONITORING TOOL FOR BITLOCKER DEVICE ENCRYPTION | TANZANIA REVENUE AUTHORITY | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|----|------------------|------------------|--------------------|-------------------|--------------------|-------------------------------|
| 63 | RAILCAMS | TANZANIA RAILWAYS CORPORATION | - | - | - | - |
| 64 | TRAVELLING PERMIT SYSTEM | MINISTRY OF INFORMATION, CULTURE, ARTS AND SPORTS | - | - | - | - |
| 65 | MICROSOFT ACTIVE DIRECTORY | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 66 | PLANREP | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 67 | BEMIS | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 68 | WELLSOFT EMERGENCY DEPT INFORMATION SYSTEM | MUHIMBILI NATIONAL HOSPITAL (MNH) | - | 455,387,500 | 65,632,750 | - |
| 69 | LEAVE MANAGEMENT | TANZANIA TELECOMMUNICATION CORPORATION | - | - | - | - |
| 70 | TANZANITE PORTAL (CORE BUSINESS MANAGEMENT SYSTEM) | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 71 | MINIGRID PORTAL | RURAL ENERGY AGENCY - REA | - | - | - | - |
| 72 | KASPERSKY STAND-ALONE ANTIVIRUS | WEIGHTS AND MEASURES AGENCY | - | - | - | - |
| 73 | BIOMETRIC TIME ATTENDANCE | KINONDONI MUNICIPAL COUNCIL | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 74 | SAGE 300 PEOPLE | DAR ES SALAAM STOCK EXCHANGE-DSE | - | - | 4,000,000 | - |
| 75 | HUMAN CAPITAL MANAGEMENT INFORMATION SYSTEM(LAWSON) | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 76 | WINDOWS 10 | NATIONAL FOOD RESERVE AGENCY (NFRA) | - | - | - | - |
| 77 | EPICOR ERP | TANZANIA BUILDINGS AGENCY(TBA) | - | - | - | - |
| 78 | RFB MIS | ROADS FUND BOARD | - | 545,844,000 | - | - |
| 79 | AFYACARE | MINISTRY OF HEALTH | - | - | - | - |
| 80 | ELECTRONIC DOCUMENT MANAGEMENT SYSTEM (EDMS) | HIGHER EDUCATION STUDENTS' LOANS BOARD (HESLB) | - | 35,000,000 | - | - |
| 81 | LIVESTOCK REVENUE COLLECTION SYSTEM | MINISTRY OF LIVESTOCK AND FISHERIES (FISHERIES SECTOR) | - | - | - | 7,000,000 |
| 82 | ENTERPRISE RESOURCE MANAGEMENT SUITE (ERMS) | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 83 | TURNITIN | NATIONAL INSTITUTE OF TRANSPORT | - | 8,000 | - | - |
| 84 | IFMS | BANK OF TANZANIA | - | - | - | - |
| 85 | TCRA WEBSITE | TANZANIA COMMUNICATIONS | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
|  |  | REGULATORY AUTHORITY (TCRA) |  |  |  |  |
| 86 | E-OFFICE | PHARMACY COUNCIL | - | 8,000,000 | - | - |
| 87 | PURELOGIC ACCOUNTING | SHINYANGA URBAN WATER SUPPLY AND SANITATION AUTHORITY(SHUWASA) | - | - | 4,000,000 | 5,000,000 |
| 88 | CATCH ASSESSMENT SURVEY | MINISTRY OF LIVESTOCK AND FISHERIES (FISHERIES SECTOR) | 4,103,405 | - | 3,000,000 | - |
| 89 | MSD RESULTS BASE FUND SYSTEM (RBF) | MEDICAL STORES DEPARTMENT |  | - | - | - |
| 90 | WEBSITE | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 91 | SOLAR WIND NETWORK PERFORMANCE | TANZANIA TELECOMMUNICATION CORPORATION | 1,380 | - | - | - |
| 92 | PASTEL | MTWARA URBAN WATER SUPPLY AND SEWERAGE AUTHORITY | - | - | 1,000,000 | - |
| 93 | MFUMO WA VIBALI VYA KUSAFIRI NJE YA NCHI | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 94 | HELP DESK SYSTEM | E-GOVERNMENT AUTHORITY | - | - | - | - |
| 95 | MANAGE ENGINE | MUHIMBILI NATIONAL HOSPITAL (MNH) | - | - | - | - |
| 96 | EPICOR HCM | MEDICAL STORES DEPARTMENT | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 97 | TRA INTRANET PORTAL | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 98 | GOTHOMIS | LINDI MUNICIPAL COUNCIL | - | - | - | - |
| 99 | AZEUS CONVENE | ROADS FUND BOARD | - | - | 44,911,000 | - |
| 100 | SAFARI INFORMATION SYSTEM | TANZANIA GEOTHERMAL DEVELOPMENT COMPANY | 500,000 | - | - | - |
| 101 | FOREIGN AWARD ASSESSMENT SYSTEM | TANZANIA COMMISSION FOR UNIVERSITIES (TCU) | - | - | - | - |
| 102 | SSL CERTIFICATE - UNLIMITED SUB-DOMAINS BASED ON SINGLE COMMON NAME | ROADS FUND BOARD | - | - | 2,893,750 | - |
| 103 | HELP DESK MANAGEMENT SYSTEM | TIB DEVELOPMENT BANK LTD | - | 1 | - | - |
| 104 | SMART BILLING MANAGER | SHINYANGA URBAN WATER SUPPLY AND SANITATION AUTHORITY(SHUWASA) | - | - | 4,000,000 | 5,000,000 |
| 105 | PASTEL EVOLUTION | INSTITUTE OF FINANCE MANAGEMENT (IFM) | - | 18,000,000 | 15,000,000 | 18,000,000 |
| 106 | INTEGRATED FINANCIAL MANAGEMENT SYSTEM(EPICOR 10.2) | TANZANIA SHIPPING AGENCIES CORPORATION (TASAC) | - | - | - | - |
| 107 | STUDENTS INFORMATION MANAGEMENT SYSTEM | WATER INSTITUTE (WI) | 6,500,000 | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 108 | GOVERNMENT MAILING SYSTEM(GMS) | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 109 | MSD DASHBOARD | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 110 | IBPS | BANK OF TANZANIA | - | - | - | - |
| 111 | PLANNING, BUDGETING AND REPORTING SYSTEM - PLANREP | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT(TAMISEMI) | - | - | - | - |
| 112 | ELO PROFESSIONAL | ARUSHA URBAN WATER SUPPLY AND SANITATION AUTHORITY (AUWSA) | - | - | 5,000,000 | - |
| 113 | SMART BILLING MANAGER | MTWARA URBAN WATER SUPPLY AND SEWERAGE AUTHORITY | - | - | 10,500,000 | 14,160,000 |
| 114 | EPICOR 9.05.607 | MEDICAL STORES DEPARTMENT | - | 1 | 262,200,000 | - |
| 115 | DSPACE | INSTITUTE OF FINANCE MANAGEMENT (IFM) | - | - | - | 1,000,000 |
| 116 | ARUTI | TANZANIA NATIONAL PARKS (TANAPA) | - | - | - | - |
| 117 | LGRCIS | LINDI MUNICIPAL COUNCIL | - | - | - | - |
| 118 | E-LEARNING PLATFORM | PHARMACY COUNCIL | - | - | - | - |
| 119 | E-LMIS | MINISTRY OF HEALTH | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 120 | LOCAL GOVERNMENT REVENUE COLLECTION INFORMATION SYSTEM(LGRCIS) | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 121 | CENTRALIZED DRIVING LICENCE SYSTEM | TANZANIA REVENUE AUTHORITY | - | 3,000,000 | - | - |
| 122 | MOBILE METER READING APP | SHINYANGA URBAN WATER SUPPLY AND SANITATION AUTHORITY(SHUWASA) | - | - | 1,200,000 | 120,000 |
| 123 | REGISTRY | DAR ES SALAAM STOCK EXCHANGE-DSE | - | - | 12,000,000 | - |
| 124 | SPONSORSHIP | MINISTRY OF HEALTH | - | - | - | - |
| 125 | KASPERSKY ENDPOINT SECURITY 10 | E-GOVERNMENT AUTHORITY | - | 9,955,291 | - | - |
| 126 | COMPLAINT MANAGEMENT SYSTEM | SHINYANGA URBAN WATER SUPPLY AND SANITATION AUTHORITY(SHUWASA) | - | - | 1,200,000 | 120,000 |
| 127 | ETS | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 128 | ARUTI | DODOMA URBAN WATER SUPPLY AND SANITATION AUTHORITY(DUWASA) | - | 1,931,424 | - | - |
| 129 | ADVANCE LOAN MANAGEMENT SYSTEM | MINISTRY OF FINANCE AND PLANNING | - | - | - | - |
| 130 | KOHA | NATIONAL INSTITUTE OF TRANSPORT | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 131 | SOLARWIND | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 132 | MICROSOFT OFFICE 2019 | WEIGHTS AND MEASURES AGENCY | - | - | - | - |
| 133 | IDAMS | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 134 | NESSUS MANAGER | E-GOVERNMENT AUTHORITY | - | 3,500 | - | - |
| 135 | TASAF-MIS | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 136 | EPICOR V.10.2 | MISUNGWI DISTRICT COUNCIL | - | - | - | - |
| 137 | CENTRAL BUDGET MANAGEMENT SYSTEM | MINISTRY OF FINANCE AND PLANNING | - | - | - | - |
| 138 | PREM | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 139 | ULTRA LINE BILLING MANAGER | KAHAMA URBAN WATER SUPPLY AND SANITATION AUTHORITY - (KAHAMA UWASA) | - | - | 5,200,000 | - |
| 140 | CLEARCANVAS | MUHIMBILI NATIONAL HOSPITAL (MNH) | - | - | - | - |
| 141 | SYSTEM CENTER DATA PROTECTION MANAGER (SCDPM) | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 142 | HEALTH STAFF RECRUITMENT SYSTEM HSRS | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| | | LOCAL GOVERNMENT(TAMISEMI) | | | | |
| 143 | ONLINE TYPE-APPROVAL SYSTEM | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 144 | GOVERNMENT LAWYERS DATABASE | MINISTRY OF CONSTITUTIONAL AND LEGAL AFFAIRS | - | - | - | - |
| 145 | ONLINE STUDENTS INFORMATION SYSTEM (OSIM) | DAR ES SALAAM INSTITUTE OF TECHNOLOGY | - | - | - | - |
| 146 | PRTG NETWORK MONITOR | ROADS FUND BOARD | - | - | - | - |
| 147 | SOLARWINDS IP ADDRESS MANAGER IP1000 UP TO 1024 IPS | ROADS FUND BOARD | - | 3,234,000 | 1,046,430 | - |
| 148 | ONLINE APPLICATION SYSTEM | NATIONAL INSTITUTE OF TRANSPORT | - | - | - | - |
| 149 | HELDESK | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 150 | GOVERNMENT MOBILE PLATFORM (MGOV) | E-GOVERNMENT AUTHORITY | - | - | - | - |
| 151 | SURVEY REGISTRATION SYSTEM | MINISTRY OF LANDS, HOUSING AND HUMAN SETTLEMENTS DEVELOPMENT | 30,000 | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 152 | HIM | MINISTRY OF HEALTH | - | - | - | - |
| 153 | AGRICULTURE ROUTINE DATA SYSTEM | MINISTRY OF AGRICULTURE | - | - | - | - |
| 154 | E-PERMIT | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 155 | ORACLE AUDIT VAULT | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 156 | TRAFFIC INFORMATION DATA BASE SYSTEM | TANZANIA NATIONAL ROADS AGENCY | - | - | - | - |
| 157 | INFOR SUNSYSTEMS | UONGOZI INSTITUTE | - | - | 20,000,000 | - |
| 158 | LAWSON | PRIME MINISTER OFFICE | - | - | - | - |
| 159 | EPICOR/IFMIS | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 160 | NATIONAL ADDRESSING AND POSTCODE SYSTEM(NAPS) | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 161 | CSPRO | NATIONAL BUREAU OF STATISTICS | - | - | - | - |
| 162 | ONLINE APPLICATION SYSTEM | TANZANIA BUREAU OF STANDARDS(TBS) | 5,000,000 | 12,000,000 | - | - |
| 163 | GOVERNMENT MAILING SYSTEM | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 164 | DIGISILENT LOAD FLOW ANALYSIS SERVER | RURAL ENERGY AGENCY - REA | - | - | - | - |
| 165 | EPICOR | LINDI MUNICIPAL COUNCIL | - | - | - | - |
| 166 | SUPPORT SYSTEM | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 167 | SMS MTANDAO | RURAL ENERGY AGENCY - REA | - | - | - | - |
| 168 | AMP | MINISTRY OF FINANCE AND PLANNING | - | - | - | - |
| 169 | TIKETI MTANDAO | NATIONAL INTERNET DATA CENTER | | 1 | - | - |
| 170 | PROCUREMENT FORUM | PUBLIC PROCUREMENT REGULATORY AUTHORITY | - | - | - | - |
| 171 | CONTROL NUMBER REQUESTING PORTAL | TANZANIA COMMISSION FOR UNIVERSITIES (TCU) | - | - | - | - |
| 172 | GOVERNMENT WEBSITE FRAMEWORK | MONDULI DISTRICT COUNCIL | 1,000,000 | - | 1,000,000 | - |
| 173 | INSPIRE HRM SUITE | RURAL ENERGY AGENCY - REA | - | - | - | - |
| 174 | BIOMETRIC ATTENDANCE REGISTER | MINISTRY OF CONSTITUTIONAL AND LEGAL AFFAIRS | - | 3,000,000 | 1,000,000 | - |
| 175 | ZIMBRA COLLABORATION SUITE - PROFESSIONAL EDITION | ROADS FUND BOARD | - | 6,673,018 | 2,600,000 | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 176 | CLASS LICENSE APPLICATION MANAGEMENT SYSTEM | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 177 | IMPORT EXPORT COMMODITY DATABASE | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 178 | ILMS | INSTITUTE OF FINANCE MANAGEMENT (IFM) | - | - | - | 1,000,000 |
| 179 | INTERNET EXPLORER | KILWA DISTRICT COUNCIL | - | - | - | - |
| 180 | NETSUPPORT DNA AND MANAGER | ROADS FUND BOARD | - | 6,992,000 | 1,398,400 | - |
| 181 | UNIFIED BILLING SYSTEM | GEITA URBAN WATER SUPPLY AND SANITATION AUTHORITY (GEUWASA) | - | - | - | - |
| 182 | FFARS | LINDI MUNICIPAL COUNCIL | - | - | - | - |
| 183 | ELEARNING | INSTITUTE OF FINANCE MANAGEMENT (IFM) | - | - | - | 1,000,000 |
| 184 | WINDOWS 10 PRO | WEIGHTS AND MEASURES AGENCY | - | - | - | - |
| 185 | PERFOMANCE MANAGEMENT SYSTEM | DAR ES SALAAM STOCK EXCHANGE-DSE | - | - | - | - |
| 186 | WAZAZI NIPENDENI | MINISTRY OF HEALTH | - | - | - | - |
| 187 | WATER POINT MAPPING SYSTEM | MINISTRY OF WATER | - | 2,000,000 | 25,000,000 | - |
| 188 | VEHICLE SERVICE MANAGEMENT SYSTEM | MINISTRY OF LANDS, HOUSING AND HUMAN | - | 10,000,000 | 5,000,000 | 100,000,000 |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|----|-----------------|------------------|--------------------|-------------------|--------------------|-----------------|
| | | SETTLEMENTS DEVELOPMENT | | | | |
| 189 | MIS HELP DESK SYSTEM | MINISTRY OF LANDS, HOUSING AND HUMAN SETTLEMENTS DEVELOPMENT | - | - | 55,000,000 | - |
| 190 | MICROSOFT EXCHANGE SERVER | RURAL ENERGY AGENCY - REA | - | - | - | - |
| 191 | GEPG | MINISTRY OF FINANCE AND PLANNING | - | - | - | - |
| 192 | SAGE ACCPAC (SAGE 300) | PUBLIC PROCUREMENT REGULATORY AUTHORITY | - | 12,707,500 | 3,885,720 | - |
| 193 | VISION SOFTWARE | TANGA WATER SUPPLY AND SANITATION AUTHORITY | - | 600,000 | 2,108,424 | - |
| 194 | GOVERNMENT ELECTRONIC RESOURCE ALLOCATION SYSTEM(GERAS) | MINISTRY OF FINANCE AND PLANNING | - | - | - | - |
| 195 | VITAMBULISHO VYA UJASILIAMALI | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 196 | SMART BILLING MANAGER (SBM) | DODOMA URBAN WATER SUPPLY AND SANITATION AUTHORITY(DUWASA) | - | - | 10,500,000 | 12,000,000 |
| 197 | ALUMNI.IFM.AC.TZ | INSTITUTE OF FINANCE MANAGEMENT (IFM) | - | - | - | 1,000,000 |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 198 | SAGE ACCPAC ACCOUNTING SUITE | RURAL ENERGY AGENCY - REA | - | - | - | - |
| 199 | CONTENT MONITORING SYSTEM | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 200 | GEPG | GEITA URBAN WATER SUPPLY AND SANITATION AUTHORITY (GEUWASA) | - | - | - | - |
| 201 | FINANCIL FACILITY ACCOUNTING REPORTING SYSTEM(FFARS) | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 202 | KOBO | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 203 | DHIS-HMIS | MINISTRY OF HEALTH | - | - | - | - |
| 204 | VIMS | MINISTRY OF HEALTH | - | - | - | - |
| 205 | SAGE PASTEL | TANZANIA COMMISSION FOR UNIVERSITIES (TCU) | - | - | - | - |
| 206 | GOOGLE CROME | KILWA DISTRICT COUNCIL | - | - | - | - |
| 207 | OVERTIME | TANZANIA TELECOMMUNICATION CORPORATION | - | - | - | - |
| 208 | HRHIS | MINISTRY OF HEALTH | - | - | - | - |
| 209 | ARUTI PAYROLL AND HUMAN RESOURCE MANAGEMENT SYSTEM | TANZANIA SHIPPING AGENCIES CORPORATION (TASAC) | - | - | 9,500,000 | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 210 | KASPERSKY ANTIVIRUS SECURITY | WEIGHTS AND MEASURES AGENCY | - | - | - | - |
| 211 | PROPERTY MANAGEMENT INFORMATION SYSTEM - PMIS | NATIONAL HOUSING CORPORATION(NHC) | - | 15,640,000 | 15,640,000 | - |
| 212 | MOTOR INSURANCE APPLICATION (MIA) | NATIONAL INSURANCE CORPORATION (NIC) | - | - | - | - |
| 213 | SAGE 300 ERP | ARUSHA URBAN WATER SUPPLY AND SANITATION AUTHORITY (AUWSA) | - | 2,300 | - | - |
| 214 | CALL CENTRE APPLICATION | MWANZA URBAN WATER AND SANITATION AUTHORITY | - | 735,000 | 20,000,000 | - |
| 215 | VOIP PABX | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 216 | GOVERNMENT E-OFFICE SYSTEM (GEOS) | E-GOVERNMENT AUTHORITY | - | - | - | - |
| 217 | OZEKI NG - SMS GATEWAY | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 218 | SERENIC NAVIGATOR 2016 FINANCIALS SUITE | RURAL ENERGY AGENCY - REA | - | - | - | - |
| 219 | ENTERPRISE RESOURCE MANAGEMENT SUITE (ERMS) | E-GOVERNMENT AUTHORITY | - | - | - | - |
| 220 | KASPERSKY END POINT SECURITY | ROADS FUND BOARD | - | - | 2,570,016 | - |
| 221 | PROJECT SERVER | TANZANIA REVENUE AUTHORITY | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 222 | SCHOOL OF AVIATION-ONLINE APPLICATION SYSTEM | NATIONAL INSTITUTE OF TRANSPORT | - | - | 350,000 | - |
| 223 | MICROSOFT OFFICE 16 | NATIONAL FOOD RESERVE AGENCY (NFRA) | - | - | - | - |
| 224 | FACILITY FINANCIAL ACCOUNTING AND REPORTING SYSTEM - FFARS | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT(TAMISEMI) | - | - | - | - |
| 225 | MAIL.IFM.AC.TZ | INSTITUTE OF FINANCE MANAGEMENT (IFM) | 5,700,000 | 5,700,000 | - | - |
| 226 | DASHBOARD | PRIME MINISTER OFFICE | 500,000 | 500,000 | 13,000,000 | - |
| 227 | VOTEBOOK FINANCIAL MGT SYSTEM | TANZANIA PUBLIC SERVICE COLLEGE | - | - | - | - |
| 228 | COMPLAINT MANAGEMENT INFORMATION SYSTEM (CMIS) | COMMISSION FOR HUMAN RIGHTS AND GOOD GOVERNANCE | - | - | - | 7,000,000 |
| 229 | ONLINE LOAN APPLICATION AND MANAGEMENT SYSTEM | HIGHER EDUCATION STUDENTS' LOANS BOARD (HESLB) | - | - | - | - |
| 230 | FLEET MANAGEMENT | TANZANIA TELECOMMUNICATION CORPORATION | - | - | - | - |
| 231 | SELFORM | IRINGA DISTRICT COUNCIL | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 232 | EHORIZON | TANZANIA NATIONAL ROADS AGENCY | - | - | - | - |
| 233 | PROJECT MANAGEMENT SYSTEM(CELOXIS) | TANZANIA RAILWAYS CORPORATION | - | - | - | - |
| 234 | PLANREP | LINDI MUNICIPAL COUNCIL | - | - | - | - |
| 235 | AFYACLOUD | MINISTRY OF HEALTH | - | - | - | - |
| 236 | STUDENT INFORMATION MANAGEMENT SYSTEM | NATIONAL INSTITUTE OF TRANSPORT | - | - | 300,000 | - |
| 237 | ADOBE READER | KILWA DISTRICT COUNCIL | - | - | - | - |
| 238 | VOTEBOOK | HIGHER EDUCATION STUDENTS' LOANS BOARD (HESLB) | - | 12,000,000 | 12,000,000 | - |
| 239 | HUMAN CAPITAL MANAGEMENT INFORMATION SYSTEM | VICE PRESIDENT OFFICE | - | - | - | - |
| 240 | ELECTRONIC TRAIN CONTROL SYSTEM | TANZANIA RAILWAYS CORPORATION | - | - | - | - |
| 241 | FFARS | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 242 | HELPDESK | LINDI MUNICIPAL COUNCIL | - | - | - | - |
| 243 | ARUTI | TANZANIA REVENUE AUTHORITY | - | 113,138,400 | - | - |
| 244 | LGRCIS | IRINGA DISTRICT COUNCIL | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 245 | IRINGA MUNICIPAL WEBSITE | IRINGA MUNICIPAL COUNCIL | 500,000 | - | - | - |
| 246 | MACHINGA | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 247 | ONLINE TEACHERS APPLICATION SYSTEM OTEAS | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT(TAMISEMI) | - | - | - | - |
| 248 | ELECTRONIC SADC POOLED PROCUREMENT SERVICES SYSTEM | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 249 | TCU MAIN WEBSITE | TANZANIA COMMISSION FOR UNIVERSITIES (TCU) | - | - | - | - |
| 250 | SMART BILLING MANAGER (SBM) | ARUSHA URBAN WATER SUPPLY AND SANITATION AUTHORITY (AUWSA) | - | - | 7,000,000 | - |
| 251 | AXLE WEIGHERS | TANZANIA NATIONAL ROADS AGENCY | - | - | - | - |
| 252 | GOVERNMENT MAILING SYSTEM | MARINE PARKS AND RESERVES | - | - | - | - |
| 253 | HELPDESK | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 254 | CONTRACTS MANAGEMENT SYSTEM | MEDICAL STORES DEPARTMENT | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 255 | PAYROLL SYSTEM | GEITA URBAN WATER SUPPLY AND SANITATION AUTHORITY (GEUWASA) | - | - | 500,000 | - |
| 256 | VMWARE | TANZANIA NATIONAL ROADS AGENCY | - | - | - | - |
| 257 | TIMESHEET MANAGEMENT SYSTEM | PHARMACY COUNCIL | - | - | - | - |
| 258 | NATIONAL ECONOMIC EMPOWERMENT DATABASE (NEED) | NATIONAL ECONOMIC EMPOWERMENT COUNCIL | - | - | - | - |
| 259 | E-JUDICIARY | JUDICIARY OF TANZANIA | - | - | - | - |
| 260 | TENDER PORTAL | PUBLIC PROCUREMENT REGULATORY AUTHORITY | - | - | - | - |
| 261 | LAND RENT MANAGEMENT SYSTEM (LRMS) AND MANAGEMENT OF LAND INFORMATION SYSTEM (MOLIS) | MINISTRY OF LANDS, HOUSING AND HUMAN SETTLEMENTS DEVELOPMENT | 30,000 | - | 1,500,000 | 3,000,000 |
| 262 | METASPLOIT PRO | E-GOVERNMENT AUTHORITY | - | 2,022 | - | - |
| 263 | SURVEY SOLUTION | NATIONAL BUREAU OF STATISTICS | - | - | - | - |
| 264 | QUICK BOOK | TANZANIA RAILWAYS CORPORATION | - | - | 250,000 | 15,000 |
| 265 | GEPG | PHARMACY COUNCIL | - | - | - | - |

125

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 266 | CASE INVESTIGATION MANAGEMENT INFORMATION SYSTEM (CIMIS) | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 267 | GOVERNMENT OF TANZANIA HEALTH OPERATIONS MANAGEMENT INFORMATION SYSTEM GOTHOMIS 3.0 | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT(TAMISEMI) | - | - | - | - |
| 268 | TWG | MINISTRY OF HEALTH | - | - | - | - |
| 269 | SCHOOL INFORMATION SYSTEM | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 270 | IMPREST | MINISTRY OF HEALTH | - | - | - | - |
| 271 | TIMR | MINISTRY OF HEALTH | - | - | - | 13,500,000 |
| 272 | ELECTRONIC FISCAL DEVICE MANAGEMENT SYSTEM | TANZANIA REVENUE AUTHORITY | - | 390,000 | - | - |
| 273 | SELFFORM | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT(TAMISEMI) | - | - | - | - |
| 274 | ESCAN ENTERPRISE EDITION | MUHIMBILI NATIONAL HOSPITAL (MNH) | - | 20,000,000 | - | - |
| 275 | QUALITY MANAGEMENT INFORMATION SYSTEM (QUALIMIS) | TANZANIA BUREAU OF STANDARDS(TBS) | - | 20,000,000 | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 276 | PREM | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 277 | INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM | VICE PRESIDENT OFFICE | - | - | - | - |
| 278 | EVLIM | MINISTRY OF HEALTH | - | - | - | - |
| 279 | E-OFFICE | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 280 | TCU DIGITAL REPOSITORY | TANZANIA COMMISSION FOR UNIVERSITIES (TCU) | - | - | - | - |
| 281 | BURIGI MANAGMENT TOOL (BMT) | E-GOVERNMENT AUTHORITY | - | - | - | 115,000,000 |
| 282 | VEEAM BACKUP ESSENTIALS ENTERPRISE PLUS 2 SOCKET BUNDLE FOR VMWARE - PUBLIC SECTOR | ROADS FUND BOARD | - | 12,696,800 | 3,000,000 | - |
| 283 | INTERNET PROXY | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 284 | DOCUMENT MANAGEMENT SYSTEM-DMS | NATIONAL HOUSING CORPORATION(NHC) | - | 61,560,000 | - | - |
| 285 | CARMS | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 286 | TCU ICT ASSETS MANAGEMENT SYSTEM | TANZANIA COMMISSION FOR UNIVERSITIES (TCU) | - | - | - | - |
| 287 | SOLARWINDS SOFTWARE | MEDICAL STORES DEPARTMENT | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 288 | ARUTI (PAYROL MODULE) | TANZANIA COMMISSION FOR UNIVERSITIES (TCU) | - | - | - | - |
| 289 | MSD CUSTOMER PORTAL | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 290 | PCT DB | PHARMACY COUNCIL | - | - | - | - |
| 291 | WINDOWS SERVER 2012 | WEIGHTS AND MEASURES AGENCY | - | - | - | - |
| 292 | GOVERNMENT MAIL SYSTEM | NATIONAL FOOD RESERVE AGENCY (NFRA) | 1,869,120 | 1,869,120 | - | - |
| 293 | USED MOTOR VEHICLE VALUATION SYSTEM | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 294 | CSIS | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 295 | D-FUNDS -MIS | MINISTRY OF FINANCE AND PLANNING | - | - | - | - |
| 296 | AUDIT MANAGEMENT SOFTWARE | TANZANIA NATIONAL PARKS (TANAPA) | - | - | - | - |
| 297 | KARSPERSKY ANTIVIRUS SECURITY | WEIGHTS AND MEASURES AGENCY | - | - | - | - |
| 298 | E-VIBALI | E-GOVERNMENT AUTHORITY | - | - | - | - |
| 299 | HR MANAGEMENT | MTWARA URBAN WATER SUPPLY AND SEWERAGE AUTHORITY | - | - | 500,000 | - |
| 300 | BIO TIME | MUHIMBILI NATIONAL HOSPITAL (MNH) | - | 2,800,000 | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 301 | GOVERNMENT MAILING SYSTEM | MINISTRY OF INFORMATION, CULTURE, ARTS AND SPORTS | - | 3,990,000 | - | - |
| 302 | FILE MOVEMENT SYSTEM | MINISTRY OF LANDS, HOUSING AND HUMAN SETTLEMENTS DEVELOPMENT | 30,000 | - | - | - |
| 303 | SILENT RUNNER | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 304 | ONLINE BILLING SYSTEM | NATIONAL INSTITUTE OF TRANSPORT | - | - | - | - |
| 305 | EPICOR | MINISTRY OF FINANCE AND PLANNING | - | 1,400,000,000 | 500,000,000 | - |
| 306 | DOCUMENT MANAGEMENT SYSTEM | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 307 | LOCAL GOVERNMENT REVENUE COLLECTION INFORMATION SYSTEM LGRCIS 2 | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT(TAMISEMI) | - | - | - | - |
| 308 | LAWSON(HCMIS) | LINDI MUNICIPAL COUNCIL | - | - | - | - |
| 309 | ARIS | TANZANIA PUBLIC SERVICE COLLEGE | - | - | - | - |
| 310 | KASPERSKY ANTI-VIRUS | NATIONAL FOOD RESERVE AGENCY (NFRA) | - | 80,000 | - | - |
| 311 | CRN REGISTER | TANZANIA RAILWAYS CORPORATION | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 312 | BEMIS 1 | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT(TAMISEMI) | - | - | - | - |
| 313 | NATIONAL HUMAN RIGHTS ACTION PLAN M&E SYSTEM | COMMISSION FOR HUMAN RIGHTS AND GOOD GOVERNANCE | - | - | - | - |
| 314 | KASPERSKY CORPORATE ANTI-VIRUS | WEIGHTS AND MEASURES AGENCY | - | - | - | - |
| 315 | PLANREP | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 316 | VMWARE VSPHERE ESSENTIAL KIT PLUS | ROADS FUND BOARD | - | 11,096,800 | 3,722,900 | - |
| 317 | CTC | MINISTRY OF HEALTH | - | - | - | - |
| 318 | PREM | LINDI MUNICIPAL COUNCIL | - | - | - | - |
| 319 | SPECIAL LOAD PERMIT SYSTEM | MINISTRY OF WORKS AND TRANSPORT (WORKS SECTOR) | 2,647,871 | 638,730,068 | 133,809,000 | - |
| 320 | MSD BOX | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 321 | FEEDBACK | MINISTRY OF HEALTH | - | - | - | - |
| 322 | GIS (GEOGRAPHICAL INFORMATION SYSTEM) | TANZANIA NATIONAL PARKS (TANAPA) | - | - | - | - |
| 323 | JUSTICE SECTOR DASHBOARD (JSD) | MINISTRY OF CONSTITUTIONAL AND LEGAL AFFAIRS | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 324 | SYSTEM CENTER CONFIGURATION MANAGER (SCCM) | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 325 | IFM WEBSITE | INSTITUTE OF FINANCE MANAGEMENT (IFM) | - | - | - | 1,000,000 |
| 326 | MICROSOFT DYNAMIC NAVISION 2016 | TANZANIA BUREAU OF STANDARDS(TBS) | - | 23,000,000 | 23,000,000 | - |
| 327 | MAILING SYSTEM | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 328 | GOVERNMENT ICT PROJECT PORTFOLIO (GIP) | E-GOVERNMENT AUTHORITY | - | - | - | - |
| 329 | REVENUE GATEWAY SYSTEM | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 330 | HUMAN RESOURCE PAYROLL SYSTEM | PUBLIC SERVICE SOCIAL SECURITY FUND-(PSSSF) | - | - | - | - |
| 331 | AJIRA | MINISTRY OF HEALTH | - | - | - | - |
| 332 | RMMS ROAD MANAGEMENT | TANZANIA NATIONAL ROADS AGENCY | - | - | - | - |
| 333 | TIMESHEET | MINISTRY OF HEALTH | - | - | - | - |
| 334 | GOT_HOMIS | IRINGA DISTRICT COUNCIL | - | - | 60,000 | - |
| 335 | I-CHF | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 336 | HELPDESK (SYSAID) | TANZANIA REVENUE AUTHORITY | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 337 | ACUNETIX | E-GOVERNMENT AUTHORITY | - | 4,059 | - | - |
| 338 | LEGAL AID DATABASE SYSTEM | MINISTRY OF CONSTITUTIONAL AND LEGAL AFFAIRS | 12,000,000 | - | 12,000,000 | - |
| 339 | LRMS | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 340 | VISITORS MANAGEMENT SYSTEM | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 341 | ACL ANALYTICS | E-GOVERNMENT AUTHORITY | - | 6,050 | - | - |
| 342 | TAMBUA TB | MINISTRY OF HEALTH | - | - | - | - |
| 343 | EIDSR | MINISTRY OF HEALTH | - | - | - | - |
| 344 | FUND TRANSER AND COLLECTION SYSTEM | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 345 | SMS PLATFORM CONNECTING TO EGA | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 346 | ITA WEBSITE | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 347 | MS LYNC | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 348 | TRAMKINSIGHT | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 349 | IMPREST AND PETTY CASH | TANZANIA TELECOMMUNICATION CORPORATION | - | - | - | - |
| 350 | MSD WEBSITE | MEDICAL STORES DEPARTMENT | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 351 | GOVERNMENT REAL ESTATE MANAGEMENT SYSTEM | TANZANIA BUILDINGS AGENCY(TBA) | - | - | - | - |
| 352 | TANEPS | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 353 | TANZANIA CUSTOMS INTEGRATED SYSTEMS | TANZANIA REVENUE AUTHORITY | - | 967,663 | - | - |
| 354 | GIT SERVER - PUBLIC | E-GOVERNMENT AUTHORITY | - | - | - | - |
| 355 | TANZANIA OUTPUT AND MONITORING FOR HIV/AIDS(TOMSHA) | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 356 | ETHICS MANAGEMENT INFORMATION SYSTEM (EMIS) | ETHICS SECRETARIAT | - | 1,000,000 | 7,000,000 | - |
| 357 | COMPUTERIZED INTEGRATED INSURANCE SYSTEM (CIIS) | NATIONAL INSURANCE CORPORATION (NIC) | - | - | - | - |
| 358 | DHIS2-ETL | MINISTRY OF HEALTH | - | - | - | - |
| 359 | COMPLAINT REGISTRATION SYSTEM | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 360 | PRAWNS DATABASE SYSTEM | MINISTRY OF LIVESTOCK AND FISHERIES (FISHERIES SECTOR) | 4,103,405 | - | - | - |
| 361 | NATIONAL SANITATION MANAGEMENT | MINISTRY OF HEALTH | - | - | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| | INFORMATION SYSTEM (NSMIS) | | | | | |
| 362 | MICROSOFT EXCHANGE SERVER | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 363 | LOWSON | INSTITUTE OF FINANCE MANAGEMENT (IFM) | - | - | - | - |
| 364 | MSD GOVERNMENT ELECTRONIC PAYMENT GATEWAY | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 365 | ENTERPRISE RESOURCE PLANNING - ERP | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT(TAMISEMI) | - | 1 | - | - |
| 366 | LIBRARY MANAGEMENT INFORMATION SYSTEM | LAW REFORM COMMISSION OF TANZANIA | - | - | - | - |
| 367 | TAX STAMP | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 368 | MOZILA FIREFOX | KILWA DISTRICT COUNCIL | - | - | - | - |
| 369 | COMPLAINTS MANEGEMENT SYSTEM | PUBLIC PROCUREMENT REGULATORY AUTHORITY | - | - | - | - |
| 370 | JEEVA | MUHIMBILI NATIONAL HOSPITAL (MNH) | - | 364,425,000 | 200,000,000 | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 371 | DOCUMENT MANAGEMENT SYSTEM | PUBLIC PROCUREMENT REGULATORY AUTHORITY | - | - | 8,850,000 | - |
| 372 | PAYROL SYSTEM | TANZANIA RAILWAYS CORPORATION | - | - | - | 19,458 |
| 373 | HUMAN CAPITAL MANAGEMENT INFORMATION SYSTEM (HCMIS) | MARINE PARKS AND RESERVES | - | - | - | - |
| 374 | CRVS | MINISTRY OF HEALTH | - | - | - | - |
| 375 | TCU LIBRARY MANAGEMENT SYSTEM | TANZANIA COMMISSION FOR UNIVERSITIES (TCU) | - | - | - | - |
| 376 | CONVERGENT BILLING SYSTEM (CVBS) | TANZANIA TELECOMMUNICATION CORPORATION | - | - | 78,000 | 100,000 |
| 377 | FTMS SYSTERM | NATIONAL IDENTIFICATION AUTHORITY (NIDA) | - | - | - | - |
| 378 | EPICOR 10 ERP | MEDICAL STORES DEPARTMENT | - | 1,333,000,000 | 270,000,000 | - |
| 379 | EPICOR | TANZANIA REVENUE AUTHORITY | - | 117,947,254 | - | - |
| 380 | AUTOMATED TRADING SYSTEMS | DAR ES SALAAM STOCK EXCHANGE-DSE | - | 100 | 250,000,000 | - |
| 381 | OPAM | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 382 | TELECOMMUNICATION AND INTERNET | TANZANIA COMMUNICATIONS | - | - | - | - |

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| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| | MONITORING SYSTEM (TIMS) | REGULATORY AUTHORITY (TCRA) | | | | |
| 383 | BIOMETRIC ATTENDANCE REGISTER | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 384 | SYSTEM CENTER VIRTUAL MACHINE MANAGER (SCVVM) | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 385 | SIS | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 386 | GOVERNMENT INTERACTIVE VOICE RESPONSE (IVRS) | E-GOVERNMENT AUTHORITY | | - | - | - |
| 387 | SAGE PASTEL EVOLUTION V7 | DODOMA URBAN WATER SUPPLY AND SANITATION AUTHORITY(DUWASA) | - | 2,300,000 | 11,500,000 | - |
| 388 | JPFIRST PAY TRACK | TANGA WATER SUPPLY AND SANITATION AUTHORITY | - | 5,520,000 | - | - |
| 389 | HP DATAPROTECTOR BACKUP | TANZANIA REVENUE AUTHORITY | - | 213,348,451 | - | - |
| 390 | GSPP | MINISTRY OF FINANCE AND PLANNING | - | - | - | - |
| 391 | MFUMO WA MAKUSANYO | MARINE PARKS AND RESERVES | - | - | - | - |
| 392 | CENTRAL MOTOR VEHICLE REGISTRATION SYSTEM | TANZANIA REVENUE AUTHORITY | - | 222,614 | - | - |

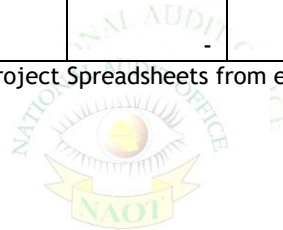| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 393 | INTEGRATED TAX ADMINISTRATION SYSTEM (ITAX) | TANZANIA REVENUE AUTHORITY | - | 1,741,463,704 | - | - |
| 394 | MICROSOFT OFFICE | KILWA DISTRICT COUNCIL | - | - | - | - |
| 395 | ICT ASSET MANAGEMENT SYSTEM | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 396 | CIVIL 3D DESIGN SOFTWARE | TANZANIA NATIONAL ROADS AGENCY | | 150,118,420 | 150,118,420 | - |
| 397 | NETSUPPORT SERVICEDESK | ROADS FUND BOARD | - | 2,898,000 | 579,600 | - |
| 398 | SOLAR WIND SERVER AND APPLICATION MONITOR | TANZANIA TELECOMMUNICATION CORPORATION | - | - | - | - |
| 399 | EBOARD EHORIZON | MEDICAL STORES DEPARTMENT | - | - | - | - |
| 400 | M&E SYSTEM | TANZANIA NATIONAL PARKS (TANAPA) | - | - | - | - |
| 401 | EMS | MINISTRY OF FOREIGN AFFAIRS AND EAST AFRICAN COOPERATION | - | - | - | - |
| 402 | TANZANIA ELECTRONICS PROCUREMENT SYSTEM(TANEPS) | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 403 | ELECTRONIC FILING MANAGEMENT SYSTEM | RURAL ENERGY AGENCY - REA | - | - | - | - |
| 404 | SOLAR WIND LOG AND EVENT ANALYZER | TANZANIA TELECOMMUNICATION CORPORATION | - | 965 | - | - |

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| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 405 | ELECTRONIC MEETING MANAGEMENT SYSTEM | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 406 | HCMIS | IRINGA DISTRICT COUNCIL | - | - | - | - |
| 407 | UNIVERSITIES INFORMATION MANAGEMENT SYSTEM | TANZANIA COMMISSION FOR UNIVERSITIES (TCU) | - | - | - | - |
| 408 | WATER SECTOR PROGRAMME MANAGEMENT INFORMATION SYSTEM | MINISTRY OF WATER | - | 2,000,000 | 12,000,000 | - |
| 409 | VOTEBOOK FINANCIA MANAGEMENT INFORMATION SYSTEM - VFMIS | NATIONAL HOUSING CORPORATION(NHC) | - | 16,100,000 | 16,100,000 | - |
| 410 | HRMS | BANK OF TANZANIA | - | - | - | - |
| 411 | AVERAGE SPEED CONTROL SURVEILLANCE CAMERA | MINISTRY OF WORKS AND TRANSPORT (WORKS SECTOR) | 2,243,957 | - | - | - |
| 412 | TANZANIA NATIONAL LIVESTOCK IDENTIFICATION AND TRACEABILITY SYSTEM (TANLITS) | MINISTRY OF LIVESTOCK AND FISHERIES (FISHERIES SECTOR) | - | - | - | 100,000,000 |
| 413 | CCTV CAMERA | MWANZA URBAN WATER AND SANITATION AUTHORITY | - | 92,000,000 | 16,552,800 | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 414 | REAL TIME MONITORING SYSTEM (RTMS)/CARGO CONTROL SYSTEM | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 415 | SYSTEM CENTER OPERATIONS MANAGER (SCOM) | TANZANIA REVENUE AUTHORITY | - | - | - | - |
| 416 | INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM(EPICOR) | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 417 | SCHOOL INFORMATION SYSTEM - SIS | PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT(TAMISEMI) | - | - | - | - |
| 418 | DATA WAREHOUSE | TANZANIA REVENUE AUTHORITY | - | 700,000 | - | - |
| 419 | GOT-HOMIS | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 420 | TREASURE SINGLE ACCOUNT(TSA) | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |
| 421 | STUDENT ACADEMIC REGISTER INFORMATION SYSTEM (SARIS) | NATIONAL INSTITUTE OF TRANSPORT | - | - | 300,000 | - |
| 422 | CENTRAL DEPOSITORY SYSTEM | DAR ES SALAAM STOCK EXCHANGE-DSE | - | 50,000,000 | 80,000,000 | - |
| 423 | EXTERNAL LABORATORY PORTAL | MUHIMBILI NATIONAL HOSPITAL (MNH) | - | 73,630,597 | - | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 424 | FLEET & GENERATOR MANAGEMENT SYSTEM | MWANZA URBAN WATER AND SANITATION AUTHORITY | - | 82,907,200 | 3,000,000 | - |
| 425 | WORKPLACE MANAGEMENT INFORMATION SYSTEM | OCCUPATIONAL SAFETY AND HEALTH AUTHORITY | - | - | - | - |
| 426 | STUDENT INFORMATION SYSTEM | INSTITUTE OF FINANCE MANAGEMENT (IFM) | - | - | - | 3,000,000 |
| 427 | AUTOCARD CIVIL 3D | TANZANIA NATIONAL ROADS AGENCY | - | - | - | - |
| 428 | TRAINING AND SEMINARS MANAGEMENT SYSTEM (TSMS) | E-GOVERNMENT AUTHORITY | - | - | - | - |
| 429 | BEMIS | LINDI MUNICIPAL COUNCIL | - | - | - | - |
| 430 | EOFFICE SYSTEM | TANZANIA COMMUNICATIONS REGULATORY AUTHORITY (TCRA) | - | - | - | - |
| 431 | LOAN MANAGEMENT SYSTEM (LMS) | HIGHER EDUCATION STUDENTS' LOANS BOARD (HESLB) | - | - | - | - |
| 432 | MS NAV 2018 | TANZANIA NATIONAL PARKS (TANAPA) | - | - | - | - |
| 433 | GOVERNMENT MAILING SYSTEM (GMS) | E-GOVERNMENT AUTHORITY | - | - | - | - |
| 434 | ASSETWARE | TANGA WATER SUPPLY AND SANITATION AUTHORITY | - | - | 1,500,000 | - |

| SN | Application Name | Institution Name | Hosting Cost (TZS) | License Fee (TZS) | Support Cost (TZS) | Maintenance/Upgrade Cost (TZS) |
|---|---|---|---|---|---|---|
| 435 | EXPENDITURE CONTROL SYSTEM | INSTITUTE OF FINANCE MANAGEMENT (IFM) | - | - | - | 2,000,000 |
| 436 | LANDS INFORMATION MANAGEMENT SYSTEM | MINISTRY OF LANDS, HOUSING AND HUMAN SETTLEMENTS DEVELOPMENT | 30,000 | - | - | - |
| 437 | INSURANCE MANAGEMENT INFORMATION SYSTEM(IMIS) | SHINYANGA MUNICIPAL COUNCIL | - | - | - | - |

Source: ICT Project Spreadsheets from e-GA, 2024

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