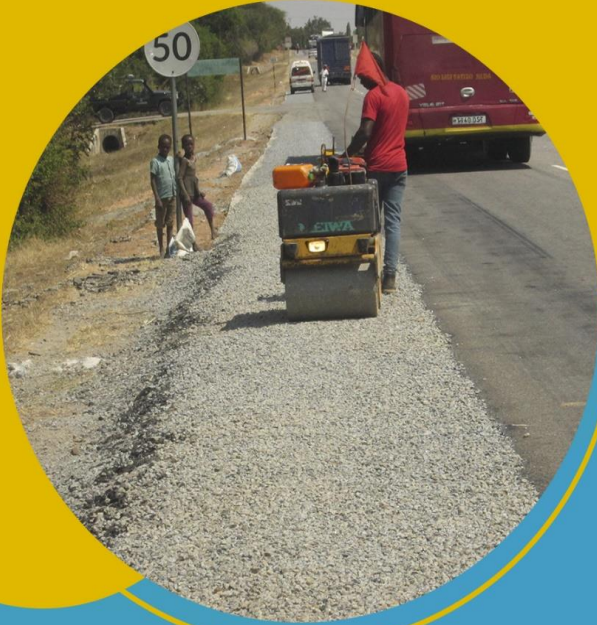




**THE UNITED REPUBLIC OF TANZANIA**  
**NATIONAL AUDIT OFFICE**



**PERFORMANCE AUDIT ON THE MANAGEMENT OF MAINTENANCE  
OF ROADS**



**CONTROLLER AND AUDITOR GENERAL**  
**MARCH, 2022**



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## About National Audit Office

### Mandate

The statutory duties and responsibilities of the Controller and Auditor General are given under Article 143 of the Constitution of the URT of 1977 and in Sect. 10 (1) of the Public Audit Act, Cap 418.

### Vision, Mission and Core Values

#### Vision

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

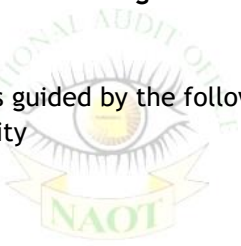
#### Mission

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

**Motto: “Modernising External Audit for Stronger Public Confidence”**

#### Core Values

In providing quality services, NAO is guided by the following Core Values:

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- i. Independence and objectivity
  - ii. Professional competence
  - iii. Integrity
  - iv. Creativity and Innovation
  - v. Results-Oriented
  - vi. Teamwork Spirit

#### We do this by: -

- ✓ Contributing to better stewardship of public funds by ensuring that our clients are accountable for the resources entrusted to them;
- ✓ Helping to improve the quality of public services by supporting innovation on the use of public resources;
- ✓ Providing technical advice to our clients on operational gaps in their operating systems;
- ✓ Systematically involve our clients in the audit process and audit cycles; and
- ✓ Providing audit staff with appropriate training, adequate working tools and facilities that promote their independence

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## PREFACE



Section 28 of the Public Audit Act CAP 418 [R.E 2021] mandates the Controller and Auditor General to carry-out Performance Audit (Value-for-Money Audit) for the purposes of establishing the economy, efficiency and effectiveness of any expenditure or use of resources in the Ministry, Department and Agencies (MDA), 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, the President of the United Republic of Tanzania, Hon Samia Suluhu Hassan and through her to the Parliament of the United Republic of Tanzania, the performance Audit Report on the Management of Maintenance of Roads as implemented by TANROADS.

The report contains findings of the audit, conclusions and recommendations that have focused mainly on improving the management of Maintenance of Roads in the country directed to the Ministry of works and Tanzania National Roads Agency (TANROADS).

The Ministry of Works and Transport (MoWT) and TANROADS as the main audited entities were given the opportunity to scrutinize the factual contents in order to comment on the draft report. I wish to acknowledge that the discussions with the Ministry of Works and Transport (MoWT) and TANROADS were useful and constructive.

My Office intends to carry out a follow-up at an appropriate time regarding actions taken by the audited entities in relation to the recommendations of this report.

In completion of the assignment, the office subjected the report to the critical reviews of Eng. Thomas Mosso, retired Director of Maintenance, TANROADS and Professor Nurdin Mushule, Senior Lecturer, University of Dar

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Es Salaam who came up with useful inputs for improving the output of this report.

This report has been prepared by Mr. Pendaël L. Ulanga - Team Leader, Mr. Elisante Mshana and Mr. Jonas L. Lufunga - Team Members under the supervision and guidance of Ms. Asnath L. Mugassa - Chief External Auditor, Mr. George C. Haule - Acting Deputy Auditor General.

I would like to thank my staff for their assistance in the preparation of this report. My thanks are also extended to the audited entities namely, the Ministry of Works and Transport and TANROADS for cooperation with my Office which facilitated timely completion of this report.



Charles E. Kichere  
**Controller and Auditor General**  
Dodoma, United Republic of Tanzania  
March, 2022



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## LIST OF ABBREVIATIONS AND ACRONYMS

BoT	:	Bank of Tanzania
CRB	:	Contractors Registration Board
GDP	:	Growth Domestic Product
GN	:	Government Notice
GPS	:	Global Positioning System
INTOSAI	:	International Organization of Supreme Audit Institutions
ISSAIs	:	International Standards for Supreme Audit Institutions
LGAs	:	Local Government Authorities
MDAs	:	Ministries Departments and Agencies
M&E	:	Monitoring and Evaluation
MoFP	:	Ministry of Finance and Planning
MoWT	:	Ministry of Works and Transport
NFYDP	:	National Five Years Development Plan
PMMR	:	Performance Based Management and Maintenance of Roads
PMU	:	Procurement Management Unit
PO-RALG	:	President's Office - Regional Administration and Local Government
PE	:	Procuring Entity
PPRA	:	Public Procurement Regulatory Authority
RAMS	:	Road Asset Management System
RFB	:	Roads Fund Board
RMS	:	Road Management System
RMMS	:	Road Maintenance Management System
TANEP	:	Tanzania National e-Procurement System
TANROADS	:	Tanzania National Roads Agency
TARA	:	Tanzania Roads Association
TARURA	:	Tanzania Rural and Urban Roads Agency
TRA	:	Tanzania Revenue Authority
VAT	:	Value Added Tax
SDGs	:	Sustainable Development Goals

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## EXECUTIVE SUMMARY

### Background of the Audit

The statistics from the Bank of Tanzania (BoT) and the National Bureau of Statistics (NBS) issued in second quarter (April-June 2021) report of October 2021 indicated that, the transportation sector contributed about 8.4% of the real Gross Domestic Product (GDP) in the country. Transportation is therefore a key sector in the growth of the economy. The National Five-Year Development Plan (FYDP) 2016/17-2020/21, focused on industrialisation recognising roads as enabling environment for industrial growth in the country. This recognition was crucial bearing in mind that the industrial development would depend much on good and maintained roads as part of enabling environment.

The FYDP, 2016/17-2020/21 also sets key interventions of roads such as maintenance, rehabilitation and construction which are also key performance indicators for the economic development of the country. In increasing the country's economy, the existing roads should be maintained to promote their quality.

The main objective of the audit was to assess whether the Ministry of Works and Transport (MoWT) through TANROADS has effectively managed maintenance of roads to maintain their expected life span.

The audit covered the entire country, but data were collected from Seven selected regions covering seven geographical zones to establish the extent to which maintenance of roads are managed. The audit also covered a period of five fiscal years from 2016/17 to 2020/21 and aimed to establish performance trends in the maintenance of roads and come-up with reasonable analysis to the Controller and Auditor General to draw sound conclusion. Increased number of newly constructed roads in the country, demanded for more effective management of roads maintenance activities.

The method used for data collection included *interviews*, *document reviews* and *physical observations* of the existing roads, maintained roads and ongoing maintenance activities. The criteria for the assessment were done based on the existing and applicable laws, standards/manuals, policies, directives and plans.

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## **Main Audit Findings**

After a thorough assessment of the road's maintenance activities in the selected regions, the Audit Team came up with various important findings. Generally, the Team noted that despite the efforts made by the Ministry of Works and Transport through TANROADS and Roads Fund Board to ensure Roads are maintained in the country, the quality of most roads is still poor. This situation is generally contributed by ineffective management of road maintenance activities in the country, as proved by the following evidence noted during the audit:

### ***Presence of Roads with Poor Conditions in the Country***

Despite the efforts made by the Ministry of Works and Transport (MoWT) through TANROADS and Roads Fund Board to ensure roads are maintained in the country, the Audit Team noted that most roads in the country were still in poor condition. Presence of roads with poor condition has remained fairly a constant phenomenon from 2016/17 to 2020/21. The Audit Team noted that in 2016/17, percent of roads with poor condition stood at 13%, while in 2017/18 it was 14%. From 2018/19 to 2019/20 the percentage of roads with poor condition was 13% and in 2020/21 the country had 13% of trunk and regional roads which were in poor conditions.

Unpaved roads were mostly affected due to the fact that, the impact of maintenance conducted was not realised after destructions from rains which resulted to loss of gravel materials leaving the roads in bad conditions.

It was found that the presence of roads with poor condition was contributed mainly by delays in maintaining the roads. In most cases the maintenance schedule was prolonged beyond their normal periods. This factor, coupled with challenges such as, re-scoping of works, traffic overloading (Heavy Goods Trucks), the rapid increase in road network while maintenance funds remain the same, make management of roads maintenance highly problematic.

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### ***Ineffective Planning for Maintenance of Roads in the Country***

Despite various efforts by TANROADS to engage the Consultant to conduct feasibility study to upgrade Road Maintenance Management System (RMMS), the Audit Team noted that TANROADS did not have Road Asset Management System (RAMS) to plan for actual roads maintenance needs. This was due to limited resources for the maintenance activities. Similarly, the available Roads Maintenance Management System (RMMS) did not capture all roads maintenance aspects such as bridges, and pavement management, as the modules for bridges in the RMMS were collapsed. The use of RMMS by TANROADS for planning decreased by 12.3% from 86.2% in 2018/19 to 73.9% in 2019/20.

Several factors contributed to the drop in the use of RMMS for planning such as limited utilisation of HDM4 Software, decentralisation of the RMMS from TANROADS HQ to 26 Regional Offices which led to inadequate monitoring of maintenance activities. Other reason was that the RMMS was not upgraded and thus could not capture pavement and bridge aspects of road maintenance during budgeting and planning for roads maintenance needs.

Moreover, TANROADS didn't have an active coordination mechanism for involvement of stakeholders in planning for maintenance of roads. This was indicated by its failure to conduct opinion surveys to capture stakeholders' views with regards to its performance on maintenance of roads. Furthermore, TANROADS did not share the roads maintenance targets with stakeholders.

Moreover, TANROADS Headquarters ineffective plan for acquisition and deployment of the staff responsible for maintenance of roads. This is evidenced by presence of inequitable allocation of staff in its Regional Offices. For example, it was noted that Regions with long road network were allocated with fewer number of staff compared to those with shorter road network.

For example, Tanga region had a total road network of 1809.30km and allocated with 15 staff, Coast region had 1379.41km allocated with 21 staff, Mwanza had road network of 1145.5 km and allocated with 17 staff and Arusha region had a road network of 1075.37 km and were allocated with 15 staff. This situation is different from Tabora, Ruvuma and Morogoro

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Regions where there are long road networks with relatively smaller number of staff compared to other regions. This situation was largely attributed to lack of plan for human resources utilisation. In turn, this resulted to huge workload to some of the staff. The audit found out that TANROADS had a deficit of 59% of staff responsible for roads maintenance nationwide.

### ***Insufficient Funding for the Maintenance of Roads***

The Audit Team noted that, roads fund revenue had been inadequate to finance maintenance of roads in the country. This is evidenced by the decreasing capacity of the Fund to finance the roads maintenance activities. The Audit Team also noted that from 2016/17 - 2019/20, disbursed funds from Road Funds Board to TANROADS ranged between 73% and 95% of the annual approved amount. This is an improvement of 12%. The overall disbursed funds to TANROADS were 80% of the approved operational plan budget.

Despite an improvement in the allocation of funds from RFB to TANROADS, the actual amounts of the required maintenance funds (unconstrained budget) could not be attained. On average TANROADS required TZS 1.027 Trillion for maintenance of roads in the country, but the budget approved for it was only averaged at TZS 553 Billion (VAT inclusive) and TZS 453.2 Billion (VAT exclusive) which translates to 54% and 44% of the average budget VAT inclusive and exclusive respectively as a result of budget ceiling set by the Roads Fund Board.

The Audit Team noted that the financing deficit continued to increase due to the increase in roads maintenance demands owing to the increased road network in the country. An accumulated backlog of physical and financial maintenance requirements and overdependence on the fuel levy which contributes on average of 93% of the total road fund revenues is a major hindrance. Overdependence on fuel levy needs attention bearing in mind that the world is moving towards use of electric and gas to run the vehicles and machineries which will in turn have impact on the collection of fuel levy. Similarly, the RFB did not attain the targets for improving the funding adequacy for road maintenance as set in its Strategic Plan of 2016/17-2020/21 which were to increase revenue collection and to reduce the cost of maintenance. This was because, RFB over relied on fuel levy as a single source of fund for maintenance. This possibly explains why RFB remained

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with unchanged budget for the past five years despite the fact that road network has been increasing at an average of 250 kilometres per year.

***TANROADS did not Manage Road Maintenance Works within the Planned Time, Cost and Required Quality***

The Audit Team noted that there were delays in completion of Road Maintenance works in which 643 out of 1970 maintenance contracts equivalent to 33% of road maintenance projects were not completed on time. Extent of delay for the visited regions ranged from 19% to 45% of initial planned time for paved roads while unpaved roads ranged from 7% to 22% and bridges ranged from 6% to 51%. According to TANROADS' Officials the delays were due to inadequate capacity of contractors, delay due to payment of outstanding payments of previous years.

According to TANROADS, inadequate capacity of contractors contributed to the delays of maintenance of roads. The delay of maintenance of roads was also due to delay of contractors to acquire performance securities, delay of request of payments to TANROADS, delay caused by retendering (twice) of the works whereby original bidders were on higher side than the budget for the works and scarcity of Bituminous Materials and non-availability of Asphalt Concrete.

The audit also noted that belated issuance of VAT exemption contributed to the delays in completion of maintenance works within the planned time. In 2020/21 the completion of maintenance works was delayed because of untimely issuance of GN for a period ranging between 83 and 211 days. Similarly, in 2018/19, a total of 116 out of 1363 maintenance contracts were delayed due to untimely issuance of the GN for VAT Exemptions by the Ministry of Finance and Planning. During that period only 9 out of 1022 maintenance contracts equivalent to 1 percent were issued with GN for VAT exemption. This implies that 99% of the maintenance contracts did not start by the commencement date stipulated in respective contracts. The average period of delays in the issuance of the GN for VAT exemption in the visited regions was 134 days.

Similarly, the Audit Team noted that 29 out 1811 road maintenance contracts equivalent to 2% of maintenance projects in visited regions had cost overrun. Overall, from the seven visited regions, the completed

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projects had a total of their initial contract sum of TZS 38,232,417,857.67 and the revised contract sum of TZS 35,647,909,183.20 which indicates the difference of TZS 2,584,508,674.47 from the original signed contracts. Similarly, the amount paid to completion of the projects was TZS. 32,584,177,572.92; and thus TZS. 3,063,731,611 was not paid.

Furthermore, TANROADS didn't have adequate quality control mechanism for implemented projects in visited regions such as inspection plans and test plans. This was because, maintenance projects were treated as minor work and thus no materials testing was required of. However, during site visit the Audit Team noted ongoing project with a proof of earlier failure due to lack of quality control. These projects were such as *Msamvu-Bigwa Junction Road* surface treatment by resealing with single surface dressing, in which defects such as bleeding stripped-off chippings, ravelling and rutting/depressions were observed on surface. This was due to laxity of TANROADS to ensure that, maintenance works complied with section 5.1 of the entered Performance Agreement. This resulted into, completed maintenance projects of low quality.

#### ***Inadequate Supervision and Monitoring of Roads Maintenance Activities***

TANROADS didn't have adequate capacity to supervise, inspect, monitor, and evaluate roads maintenance activities. The Audit Team noted that, TANROADS had a deficit of 59% of staff in the financial year 2020/21. This implies that, TANROADS had inadequate capacity for monitoring and supervision of on-going maintenance works in the country. The gap in staffing was mostly manifested in conduct of road condition and inventory surveys in the country. Due to insufficient human resources, TANROADS failed to conduct such surveys effectively.

The Audit Team noted that, for the past five years a total of 163,554.77km out of 180,135.95 km of roads were covered in the road condition and inventory surveys cumulatively. This implies that, 16,581.18km out of 180,135.95 km planned length of road network were not covered by such surveys in past five years. Apart from inadequate number of staff, impassability of some roads contributed to the failure to conduct the said surveys and carry out roads maintenance activities as planned.



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### ***MoWT did not Evaluate Adequately the Performance of TANROADS in the Management of Roads Maintenance Activities***

The Audit Team noted that MoWT did not adequately monitor and evaluate TANROADS's performance in maintenance of roads. Specifically, the audit noted that MoWT inadequately measured the performance of TANROADS on maintenance of roads. In addition, it was also found that the Ministry did not measure the capacity of RFB to finance the maintenance activities. Moreover, the M&E plans of the Ministry of Works and Transport did not capture issues related to monitoring of maintenance of roads works rather focused on new construction projects and road safety related activities. This was due to ineffective framework for monitoring and evaluation of performance of Implementing Agencies and the Roads Fund Board. Also, the management of the MoWT confirmed that the Ministry did not have Performance Agreement with TANROADS, rather TANROADS had signed Performance Agreement with RFB which provides funds for the maintenance of roads.

### ***Ineffective Monitoring and Evaluation of TANROADS' Performance by Road Fund Board***

Despite efforts by the Roads Fund Board to conduct Technical and/or Value for Money Audits annually as part of monitoring process for the executed roads maintenance activities evaluation of performance by TANROADS, was not effectively done. Out of five (5) financial years (2016/17-2020/21), it is only in one financial year that the Road Fund Board managed to evaluate the performance of Implementing Agencies, TANROADS being one among them. Through the review of monitoring and evaluation plan of the Roads Fund Board's against the Strategic Plan of 2016/17-2020/21 it was realised that the Board did not achieve its targets. Monitoring was only done in only 10 out of 26 Regions in the country which is equivalent to 38% of all Regions. Generally, shortage of financial and human resources for conducting Technical Audits by RFB contributed to the failure by this organisation to achieve its targets.

### **General Conclusion**

The audit acknowledges efforts made by the MoWT through TANROADS towards improving maintenance of roads in the country. However, based on

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the findings from this study the audit concludes that the Ministry of Works and Transport through TANROADS has not conducted roads maintenance effectively to sustain their expected life span. This is because of the widening maintenance funding gap which hinders improvement in the management of the maintenance of roads in the country.

Evidence showed that, 38% of roads in the country were in good condition, the remaining 62% were in either fair or -poor conditions, of which 12% to 14% of roads were in poor condition and were not passable in all-weather conditions. Ineffective planning for the maintenance of roads, ineffective coordination, as well as delays and deferment in conducting both preventive and periodic maintenance of roads are the main causes for having - roads that are in poor conditions.

Likewise, delays in the disbursement of funds for the maintenance of roads and ineffective utilization of the available resources for the maintenance such as Road Maintenance Management System and ineffective utilization of human resources affected the performance of TANROADS to effectively manage road maintenance activities.

Moreover, inadequate capacity of Roads Fund Board to finance maintenance activities was one of the major causes to premature deterioration of roads due to delays/deferment of road maintenance works. As a result, the Government has been spending excess amount to reconstruct or rehabilitate road sections after deteriorating to poor condition due to lack of timely and adequate maintenance. Due to delays in maintenance of roads, the Government spent TZS 1,284.5 Billion to reconstruct or rehabilitate 13 road sections instead of TZS 250 Billion that was initially required to maintain those road sections. This led to excess use of TZS 1,034.5 Billion as indicated in Annual Progress Reports of TANROADS, published on the period between 2016/17 and 2020/21.

Thus, Roads Fund Board need to have effective financing strategy to ensure availability of adequate funds that correspond to the increased road network and proportional to the rate of increasing maintenance cost.

Moreover, TANROADS need to improve the Road Maintenance Management System to ensure that, it is centralised and capable of capturing all aspects of roads maintenance monitoring. In addition, TANROADS should also ensure

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that roads maintenance projects are effectively implemented to ensure that maintenance works are completed on time, within planned cost, and prescribed quality.

The audit also concluded that, the Ministry of Works and Transport did not effectively monitor and evaluate performance of TANROADS in the management roads maintenance.

## **Audit Recommendations**

### **Recommendations to the Ministry of Works and Transport**

*The Ministry of Works and Transport is urged to:*

1. Establish a mechanism for periodical evaluation of performance of TANROADS on the management of roads maintenance activities in the country and include this mechanism in its M&E performance indicators.
2. Ensure approvals of relevant manuals and guidelines to facilitate implementations of road maintenance programmes.
3. Coordinate with other line Ministries and Agencies to ensure laws and regulations on revenue collection are harmonised, allowing the RFB to diversify sources of funding for road maintenance as per agreed strategies; and
4. Coordinate with other Ministries and Agencies to ensure compliance with all governing policies, laws, legislations, regulation, and guideline, relevant to the sector, specifically for effective and efficient implementation of road maintenance works.

*The Ministry of Works and Transport is urged to ensure Road Fund Board:*

1. Prepare the strategies and plans for resource mobilisation. Ensure diversity (beyond one source of funds), predictability and sustainability of all funding sources identified to improve reliability and adequacy of funds for maintenance of roads.

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2. Fully and timely disburse the road maintenance funds as per performance agreement with TANROADS and effectively monitor their utilisation; and
  3. Has monitoring and evaluation plan for TANROADS' Performances on the Maintenance of Roads. The plan should include evaluation of TANROADS' resources (staff, funds and equipment), at all stages of roads maintenance.

## **Recommendations to TANROADS**

*The Management of TANROADS is urged to:*

1. Ensure that Road Asset Management is developed and is always functioning. This will involve upgrading, operationalization, and centralisation of RMMS to ensure that it includes all aspects deemed necessary for planning, budgeting and implementation of road maintenance programmes;
2. Ensure that all Manuals and Guidelines for roads maintenance are approved and adhered to by putting them into use;
3. Develop a strategy that will guide and ensure that Road Maintenance projects are completed within planned time, cost and prescribed quality;
4. Establish the system for Quality Management of roads maintenance projects and ensure that Implementing Agencies adhere to it;
5. Prepare adequate plan(s) for supervision, inspection and monitoring of the ongoing road maintenance projects. The plan should include the inspection checklist, inspection test plan and reporting for maintenance projects to ensure that specifications and quality of executed work are met;
6. Provide adequate resources such as staff and working tools for the supervision and monitoring of road maintenance projects in the country. The allocation of resources (staff and working tools) should

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be based on pre-determined needs from the respective TANROADS' Regional Offices;

7. Enhance the mechanism for handing over-maintenance projects and ensure that it is adhered to;
8. Collaborate with PPRA to realign TANEPS Tender Evaluation System to conform to PPRA guidelines and improve utilisation of the TANEPS system to reduce backlog of tender evaluation, and improve efficiencies in the tender approval processes; and
9. Improve coordination mechanisms with MoFP in ensuring that works that require GN for VAT exemptions are communicated in advance to reduce delays in undertaking and completing maintenance works.



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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Audit

Road maintenance is a method used to preserve road condition in a state which would be accessible with road users throughout the year. Maintenance of roads must be done because it preserves the road in its originally constructed condition, protect adjacent resources and safety of users. It also provides efficient and convenient travel within the country.

The maintenance work is done to paved and unpaved roads and major structures such as cross culverts and bridges. Road maintenance works include planning, procurement implementation (execution) and monitoring based on proper and systematic procedures and closure of maintenance works. Effective maintenance should also include effective use of resources such as funds, human resources and time.

The maintenance works for the roads covers: routine maintenance, major structure maintenance (bridges), spot improvement, emergence works, periodic maintenance, rehabilitation, development, and upgrading and backlog maintenance. Therefore, the road maintenance can be classified within these maintenance categories depending on the condition of road determined after carrying out conditional surveys. For instance, if the road is in very poor condition, then its maintenance falls under the rehabilitation category.

The Roads Fund Board's (RFB) Annual Report of June 2019 showed that TANROADS maintained the total of national road network of 36,258 km comprising of 12,176 km of trunk roads (8,306km paved and 3,870km unpaved) and 24,082 km of regional roads among them 1,756km paved and 22,326 km being unpaved. Evidence showed that 38% of roads in the country were in good condition, the remaining 62% were in either fair or bad -poor conditions, of which 12% to 14% of roads were in poor condition and were not passable in all-weather conditions

The statistics from the Bank of Tanzania (BoT) and the National Bureau of Statistics issued in the second quarter (April-June 2021) report of October

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2021 indicated that, the transportation sector contributed about 8.4% of the real Growth Domestic Product (GDP) in the country, therefore, this sector is key to the growth of the country's economy.

## **1.2 Motivation for the Audit**

The Audit is motivated by the needs of the Nation to have confidence in the quality and efficiency in the use of funds for road maintenance activities. Furthermore, despite significant amount of funds vested in maintaining the existing roads in the country, still there is public outcry regarding poor condition of roads.

Specifically, the audit on the maintenance of roads was motivated by the following factors;

### ***(i) A Colossal Amount of Funds Allocated for Maintenance of Roads in the Country***

Reviewed Fund Allocation Report of fiscal years 2019/20 and 2020/21 prepared by Roads Fund Board, indicated that there was an increased amount of funds allocated for the maintenance of roads based on the length of road network. The report indicated that funds collected from the Road and Fuel Tolls and approved for maintenance of roads by TANROADS and TARURA increased from TZS 839,127,000,000.00 in 2019/20 to TZS 916,780,529,000.00 in 2020/21. This indicates an increment of TZS 77,653,529,000.00 which is equivalent to 8% of the previous year collections from road tolls. The amount of tolls allocated to TANROADS was 70% while TARURA received 30%.

Similarly, in the fiscal year 2019/20, TANROADS received TZS 299 Billion while in 2020/21 TZS 369 Billion were approved and received and disbursed for maintenance works to all Regions for the planned road maintenance. It is therefore vital to ensure that the system for maintenance of roads in the country is effective in order to realise value for money of the amount allocated and spent in the road maintenance activities.

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***(ii) Road Maintenance is Among Priority Areas of National Road Transport Policy, 2003 and Tanzania Development Vision 2025***

The audit was also motivated by the fact that infrastructure development is one of the pillars for the Tanzania Development Vision 2025. This framework emphasises that investment on infrastructure development should be accorded the highest priority, spearheaded by the Government. In particular, the National Road Transport Policy, sees development of the road network as absolutely essential strategy for promoting rural development.

In addition, the Policy admits that road transport is the most dominant mode of transport in urban areas. The Policy indicated that, most of the roads cannot cope with rapid increase in traffic volume due to insufficient capacities. It is further indicated that, the constructed roads cannot sustain the loading of heavy trucks with super single tires which leads to damage of road pavement structures.

Moreover, the roads capacities have been reduced by roads side parking, street vending and pedestrians who are compelled to walk on the carriageways as most of the walkways are full of parked vehicles and petty businesses. The low roads capacity reduces the efficiency and impedes traffic flow. This chronic problem of narrowing the carriageways and point loads resulted from roadside parking leads to damage of pavement structures as it was not designed for parking.

Generally, the Tanzania Development Vision 2025 recognises road networks with good condition as pillar and catalyst for economic development. But road networks cannot have significant contribution in economic development if the above-mentioned challenges are not addressed through effective regular maintenance. Generally, effective, and efficient maintenance systems, directly support sustainability of good road conditions.

***(iii) It is Among the Challenges Indicated in National Five Year Development Plan 2016/17-2020/21***

The National Five Year Development Plan 2016/17-2020/21 indicated challenges of roads in the country being poor in condition, lack of



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connectivity and inadequate planning for maintenance of rural, urban and trunk roads. Likewise, Section 2.3 of NFYDP II indicated that due to i due to deterioration of railways there has been increase in traffic which consequently leads to damages on road networks and raising of road maintenance cost overtime.

Due to poor conditions most roads become unpassable and therefore vehicles are forced to use few remaining passable roads thus creating persistent traffic jams. In the Journal of Sustainable Development in Tanzania published in 2016, it was reported that Dar es Salaam City alone is losing nearly TZS 1.4 Trillion annually due to severe roads congestion and traffic jams.

***(iv) It Supports the Achievement of United Nations Sustainable Development Goals***

The SDG Goal No. 11 target 11.2 reiterated for the access to safe, affordable and sustainable transport system for all by conducting road maintenance for road safety notably by expanding public transport with special attention to the needs of those in vulnerable situations. The goal specifically demands road maintenance so as to contribute in enhancement of roads safety and expansion of public transport with special attention to the needs of the people. Tanzania being among the countries which have ratified and agreed to the implementation of SDGs is therefore responsible in ensuring that this goal is properly attained. Therefore, attainment of this goal, necessitates the presence of efficient and effective system for maintenance of road network

### **1.3 Design of the Audit**

#### **1.3.1 Audit Objective**

The main objective of the audit was to assess whether the Ministry of Works and Transport (MoWT) through TANROADS has effectively managed roads maintenance activities in order to maintain the roads expected life span.

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## Specific Objectives of the Audit

In order to address the audit objective, five specific audit objectives were addressed. These specific audit objectives are to assess whether:

- a) Planning for the maintenance of roads is effectively done;
- b) Funding for the maintenance of Roads is effectively done;
- c) Maintenance of roads is effectively done within the planned time, cost and required quality;
- d) Supervision and monitoring of maintenance activities are effectively done; and
- e) Performance of TANROADS on the management of maintenance works is periodically evaluated.

In order to clearly operationalise the above objectives, more specific audit questions and sub-audit questions were prepared as presented in **Appendix Two**.

### 1.3.2 Audit Scope

The main audited entities were the Ministry of Works and Transport (MoWT) and Tanzania National Roads Agency (TANROADS). The Ministry of Works and Transport was selected because it is responsible for overseeing the performance of TANROADS on roads maintenance. While TANROADS is directly involved in the execution of road maintenance works. Specifically, in managing road maintenance works, TANROADS is responsible for establishing roads maintenance needs through Roads Asset Management System, prepare budget, design, maintain, inspect, supervise and report the results of maintenance works performed.

The audit focused on the management of maintenance of roads in the country. It covered the whole process of road maintenance system from planning, budgeting and funding, design, procurement of contractors and consultants, execution, closure and commissioning of executed maintenance projects in the country. Also, the audit focused on the supervision, monitoring and performance evaluation of road maintenance works to ensure that executed maintenance works are completed on time, within the planned cost and with due regard to quality.

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With regard to planning and budgeting aspects issues such as maintenance needs assessment, budgeting for maintenance activities, adequacy of coordination with key stakeholders, and availability of skilled personnel engaged in the maintenance of roads were covered. Also, on the design aspect, the audit looked into the adequacy of drawings, specifications and extent of adherence to design standards. The implementation of maintenance projects as well as cost and time estimation were assessed. Further, on the implementation phase, aspects of time, cost and quality of the projects were also assessed.

The audit targeted the entire country, but data were collected from Seven selected Regions covering seven geographical zones to get a broader picture and establish the extent to which maintenance of roads are managed.

The audit also focused on routine maintenance, spot improvements and periodic maintenance of roads in the respective selected regions. This was because colossal amounts of maintenance funds are allocated for routine maintenance, spot improvements and periodic maintenance of existing roads.

The audit covered a period of five fiscal years from 2016/17 to 2020/21 in order to establish performance trend in the maintenance of roads and come-up with reasonable findings which enabled the Controller and Auditor General to draw sound audit conclusion. Also, within this period most of road maintenance works were performed in the country while at the same time many roads with defects were reported.

Therefore, the increased amount of newly constructed roads in the country, demanded for more effective management of Road maintenance activities.

### **1.3.3 Sampling, Methods for Data Collection and Analysis**

Various methods for sampling, data collection and analysis were used by the Audit Team as presented below:-

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### **(a) Sampling Techniques Used in the Audit**

Both random and purposive sampling methods were used to select types of maintenance activities, roads and the respective covered regions as explained below:

#### ***Sampling of the Types of Maintenance***

Purposive sampling was used to select categories/ types of maintenance that covered in this audit. The selection was done by considering types of maintenance that allowed the Audit Team to cover major roads that have undergone maintenance and their materiality in terms of funds spent. Therefore, among seven main categories of maintenance i.e. routine, bridge, spot, emergency works, recurrent and periodic, the audit covered 2 categories of maintenance namely, periodic and routine maintenance. This was because under periodic maintenance, other types of maintenance such as bridge repair and spot improvements were also assessed.

On the other hand, routine maintenance was also selected, because of the risks involved if it was not properly planned and managed as it can be easily affected by weather condition and thus high risks for not realizing the intended objectives. Also, routine maintenance covered large part of road network in the country, which if not properly managed, the road would not be passable and eventually economic activities of the people using or depending on those roads would be affected.

In addition to that, from 2019/20 to 2020/21, the government of Tanzania used substantial funds on both periodic and routine maintenance amounting to TZS 226 Billion and 164 Billion respectively. Thus, covering the periodic and routine maintenance allowed the Audit Team to assess and compare comprehensively the performance of TANROADS in managing maintenance work.

#### ***Sampling of Types of Roads***

To assess the performance of TANROADS in managing maintenance activities the Audit Team focused on both the unpaved and paved roads which include both trunk and regional roads. Also, inclusion of both types of roads enabled the Audit Team to assess the performance of TANROADS in undertaking both

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periodic and routine maintenance activities. Moreover, in assessing paved roads, the Audit Team was able to assess both double/single surface dressing and Asphalt concrete roads.

### ***Sampling of Administrative Zones***

Administrative Zones covered by the audit were selected by considering geographical coverage and ensure that all weather conditions that affect road maintenance were taken into account. Seven geographical zones in the country namely; Lake, Southern, Northern, Eastern, Western, Southern Highland and Central Zones had equal chance of being selected because maintenance of roads are executed in all zones. Also, the Audit Team covered all seven zones in order to ensure the coverage of various soil nature and weather conditions (rainy, dryness, moderate dry, water logging areas etc.), the Thus, within seven zones covered, two zones had rainy weather condition, three dry weather and two had moderate weather (dry - wet).

### ***Sampling of Covered Regions***

First, all 27 regions in Tanzania Mainland were grouped in the above Seven administrative geographical zones, whereby one region was selected from each zone. Regions covered were purposively selected by considering a combination of factors discussed below:

*Volume of Maintenance Works:* The Audit Team considered the volume of maintenance works based on the length of road networks, amount of funds spent on the maintenance and a number of projects (number of contracts) in the region. Regarding the length of roads network, the Audit Team ensured that the selected regions represent those regions with short, medium and long roads network i.e. one region with short road network (500-1000kms), 4 regions with medium road network (1001 - 1600kms) and two regions with long road network (above 1600kms). This was done so as to have an overview of the performance of maintenance activities in relation to the roads network for comparison purposes.

Also, regions with large and small number of contracts, whereby two regions with a large number of road projects (40 and above), five regions with a small number of road project (below 40) were selected. This was done so

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as to have a better view of the performance of TANROADS on implementing maintenance works.

*Amount of Funds Spent on Maintenance:* In addition, regions were selected based on the amounts of funds they spent on the maintenance. The Team selected two Regions which spent large, 3 Regions which spent medium amount of funds and two Regions which spent small amount of funds on maintenance for the last five financial years starting from 2016/17 to 2020/21.

*Bridge Repairs:* In addition to the above mentioned factors, regions that had conducted bridge repairs were given priority during the selection of the regions covered and visited during the audit.

Based on the above criteria, the seven selected regions included Mara, Manyara, Lindi, Singida, Katavi, Mbeya and Morogoro. The detailed sampling analysis based on the 3 factors of selection is illustrated in **Appendix Three**. Moreover, **Appendix Four** presents a summary of analysis made during the selection of regions that were covered in the audit.

Moreover, from each selected region, the Audit Team conducted site visit for the purpose of verifying the level of implementation of maintenance works on two paved, one Asphalt concrete and one double/single surface dressing roads) and one unpaved road. With this regard, the Audit Team visited three roads in each visited region.

## **(b) Methods for Data Collection**

The audit used different methods to collect data and information from the audited entities and stakeholders on the maintenance of roads. Both qualitative and quantitative data were collected to provide strong and convincing evidence regarding the performance of the Ministry of Works and Transport Roads Fund Board and TANROADS on the management of maintenance of roads in the country. These methods for data collection included interview, document review and physical verification as detailed below:

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### ***(i) Documents Review***

The Audit Team reviewed documents from the Ministry of Works, Roads Fund Board and TANROADS to obtain comprehensive, relevant and reliable information on the performance of the Ministry, TANROADS and Roads Fund Board on the management of roads maintenance in the country.

The reviewed documents from the audited entities were those falling within the period under the audit financial year 2016/17 to 2020/21. The reviewed documents included; Planning, Performance, Progress and Monitoring and Evaluation Reports. List of reviewed documents and reasons for reviewing them are as detailed in ***Appendix Five***.

### ***(ii) Interviews***

Interviews were held with officials from the Ministry of Works, Roads Fund Board, TANROADS Headquarters and 6 selected TANROADS Regional Offices to gain insights and clarifications on the information regarding maintenance of roads by the implementing agency. Furthermore, the interviews were used to validate information from the reviewed documents. The list of interviewed officials is as provided in ***Appendix Six***.

### ***(iii) Physical Verifications***

In order to come-up with adequate conclusion regarding the performance of TANROADS on the management of roads maintenance, physical verifications were made specifically on the selected roads. Physical verifications were made through visual inspections whereby various items in the roads maintenance were inspected to assess:

- Quality of the constructed works;
- The size and quantity of the construction materials used;
- Workmanship (quality of maintenance work); and
- Extent of defects.

The physical verifications/inspections were made on items such as pavements (wearing courses), pavement layers, culverts, bridges, ditches, drainages, shoulders, and carriageways. During the inspections, notes as well as pictures were also taken from the observed situation of various items of the roads to illustrate the observed defects in respective items.

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Physical verification exercises were guided by detailed drawings, cross sections and structural drawings in order to allow the Audit Team to verify the work done and conclude whether or not the executed work was done as per design specifications.

### **(c) Methods for Data Analysis**

Quantitative data collected through structured interviews and documents review were analysed using excel spreadsheet. *Quantitative data* were organized summarized and compiled using different statistical methods for data computations before they were analysed using descriptive statistical analysis technique. The analysed data were then presented in tables and graphs.

*Qualitative data* collected through semi-structured interviews were described, compared and related so that they can be explained in order to bring into a finding as compared to audit questions. The analysis involved looking-up for categories such as events, descriptions, consistencies, or differences so as to develop theory or conclusion from the collected data on the management of maintenance of roads.

Depending on the number of interviews and documents reviewed, information was transformed into quantitative data by going through interviews/documents to see how many of them included positive or negative statement about a certain issue, or how many have made similar statements. Calculation was made, expressing the percentage of investigated documents or interviews that included a particular type of a statement.

Data were entered on a spreadsheet and used to explain and answer the 'why' questions. Simple bar graphs used to describe and compare the proportion under each main theme identified.

#### **1.3.4 Assessment Criteria**

To assess the performance of MoWT and TANROADS in managing the roads maintenance works, assessment criteria were drawn from different sources such as legislations and guidelines, standards and good practices.

##### ***Planning for the Maintenance of Roads***



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The Road Act, 2007 requires TANROADS as a Roads Authority to prepare and implement short and long-term road maintenance programme. It also requires TANROADS to establish, maintain and update road management systems.

On the other hand, *the Roads and Fuel Tolls Regulations, 2016* requires TANROADS to use the roads maintenance management system in preparing maintenance operational plans and budget. Also, in consultation with the Road Fund Board, TANROADS is required to develop the Road Asset Management System (RAMS) and implement it within the stipulated timeframe. The same Regulations stipulates issues to be included in RAMS which include (a) road maintenance management system; (b) bridge maintenance management system; (c) pavement management system; (d) Traffic Management System and; (e) any other road management system.

In preparing an operational plan and budget, TANROADS is required to consider: (a) the road inventory; (b) the condition of the roads and traffic within its jurisdiction and (c) and other economic and social factors. Also, the design of the road maintenance works is required to be made in accordance with the road maintenance manuals or guidelines. This is according to the *Roads and Fuel Tolls Regulations, 2016*.

### ***Funding for Road Maintenance Work***

Section 4(3) of the *Road and Fuel Tolls Act Cap 220, R.E 2006* provides that at least ninety percent (90%) of the money collected from road and fuel tolls should be used for maintenance and emergency repair of classified roads and related administrative costs in the Mainland Tanzania in accordance with the approved operational plans and the budget.

The *Road and Fuel Tolls Regulations, 2016* state that, in determining the allocation of funds for the roads maintenance the Roads Fund Board is required to consider (a) Condition of the road (b) length of the roads network; (c) relevant volume of traffic; and (d) Need delivered from an approved management too. Also, in determining the allocation of funds for roads development the Roads Fund Board has to consider the following: Economic factors, social factors, technical criteria. In addition, the allocations must also be guided by the allocation formula. Also, the disbursement of Funds to Implementing Agencies, such as TANROADS, has

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to be done according to the performance agreements and approved operational plans. Most importantly, the Regulations provide that the funds allocated for road maintenance shall not be used for carrying out development works.

***Maintenance of Roads is Effectively Done within the Planned Time, Cost and Required Quality***

Regulation 4(2) of *Road and Fuel Tolls Regulations, 2016* requires TANROADS, an implementing agency, to carry out major maintenance works in accordance with the appropriate design and drawings. It also requires that major maintenance includes periodic maintenance; spot improvement and bridge major repairs whereby appropriate design need to be in accordance to the pavement and materials design manual, the field test manual, the laboratory testing manual and any other equivalent engineering standards approved by the Minister.

Moreover, TANROADS is responsible for the development, maintenance and management of public roads and related facilities. Also, it is required to control the use of roads with the aim of providing safe and adequate infrastructure for road transportation commensurate with the economic development of the country. This is according to *Section 6(2) (g) of the Road Act, 2007*.

Furthermore, *the Standard Specifications of Roads works, 2000* issued by MoWT states that the quality of all elements of the works should be checked on a regular basis so as to ensure compliance with the specified requirements. The same standard specifications require the work to conform with quality and accuracy of detail to all the requirements of the Specifications and Drawings. Also mandates TANROADS to test and check materials, products and/or elements for compliance with the specified requirements. They also state that the quality of all elements of the works must be checked on a regular basis to ensure compliance with the specified requirements. Moreover, during the progress of the Work, tests must be conducted on materials and workmanship to ensure compliance with the requirements of the Specifications.

Regarding payments, Regulation 29 (2) of the *Roads and Fuel Tolls Regulations of 2016 Cap 220* requires TANROADS, as an Implementing Agency, to make payments for certificates substantiated by the relevant

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documents that include site works measurement sheets, materials, and quality control test results in accordance with the specifications in the contract. The same Regulation calls for proper documentation of the use of materials, labour and equipment. To control supervision costs for the roads, work the measurements and payments records shall be maintained as proof of payments.

### ***Supervision and Monitoring the Performance of TANROADS on Maintenance Activities***

Section 5(4)(i) of the *Road and Fuel Tolls Act Cap 220, R.E 2006* requires the Roads Fund Board to monitor the use of the funds disbursed to TANROADS, Local Government Authorities and other Road Agencies.

Moreover, the *Road and Fuel Tolls Regulations, 2016* requires the Permanent Secretary, Ministry of Works and Transport to monitor roadworks, including maintenance works, executed by the TANROADS. The same Regulations requires the Roads Fund Board to monitor the use of funds disbursed to TANROADS or Road Agencies for the purpose of assessing value for maintenance of works. Similarly, the Regulations require the Chief Executive Officer of TANROADS to be responsible for monitoring of the road maintenance works executed by Regional Managers of TANROADS and prepare a report on such monitoring and submit to the Roads Fund Board.

#### **1.4 Data Validation**

The Ministry of Works and Transport (MoWT), RFB and TANROADS were given the opportunity to go through the draft report and comment on the information and figures presented. The Ministry, Roads Fund Board and TANROADS confirmed on the accuracy of the information and figures presented in this audit report. The information was also cross-checked and discussed with experts in the field of the maintenance of roads in order to confirm the validity of the information and facts presented in the audit report.

#### **1.5 Standard of the Audit**

The audit was done in accordance with the International Standards for Supreme Audit Institutions (ISSAIs) on performance audit issued by the

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International Organization of Supreme Audit Institutions (INTOSAI). These standards require that audit is planned and performed to obtain sufficient and appropriate audit evidence to provide a reasonable basis for the findings and conclusion based on audit objectives

## 1.6 Content and Structure of the Audit Report

Parts of this Audit Report are presented as follow:

Chapter One	Covers background of the audit, audit motivation, audit design and assessment criteria used during the audit. It also presents standards used for carrying out the audit and data validation.
Chapter Two	Provides the description of the audited area various actors and processes involved in the management of the Roads Maintenance in the country.
Chapter Three	Presents findings of the audit related to Planning, Procurement of Road Maintenance Activities
Chapter Four	Presents findings of the audit related to the Funding, Execution and Monitoring of Roads Maintenance
Chapter Five	Provides overall and specific conclusions of the audit based on the main audit objective and specific audit objectives.
Chapter Six	Provides recommendations that are directed to the Ministry of Works and Transport and TANROADS in order to improve management of the Roads Maintenance in the country.

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## CHAPTER TWO

### ROADS MAINTENANCE MANAGEMENT SYSTEM IN TANZANIA

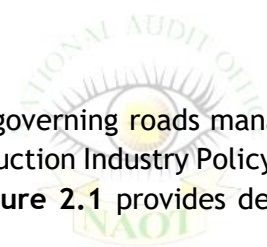
#### 2.1 Introduction

This chapter describes the system for management of roads maintenance activities in the country. It specifically explains the policies and laws governing maintenance of road works, the roles and responsibilities of the key actors in management activities, the process for maintenance of roads in the country and resources (funds and human resources) for road maintenance.

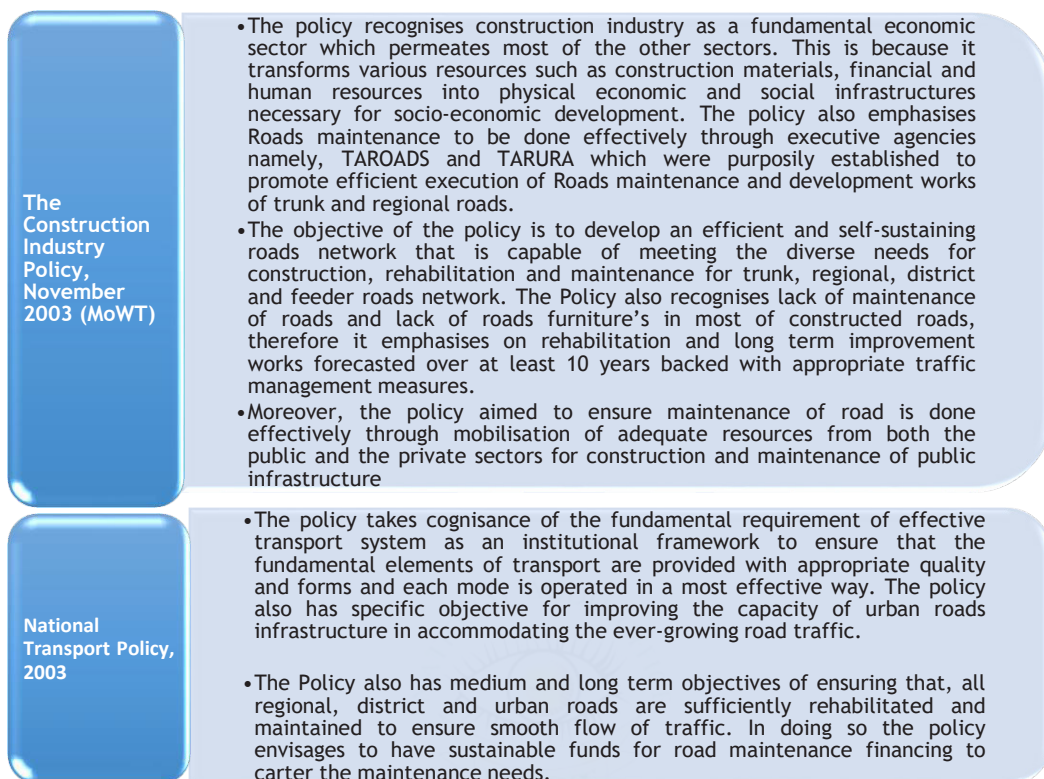
#### 2.2 Legal Framework Governing Management of Roads Maintenance Projects

##### 2.2.1 Governing Policies

There are two main policies governing roads management activities in the country. These are the Construction Industry Policy of 2003 and the National Transport Policy of 2003. **Figure 2.1** provides detailed information about the two Policies.



**Figure 2 1: Governing Policies for Maintenance of Roads in Tanzania**



*Source: Auditors' Analysis of the National Transport Policy of 2003 and National Construction Industry Policy of 2003*

### 2.2.2 Governing Legislations

There are 8 different legislations governing the management of roads maintenance activities in the country.

### 2.2.3 Governing Regulations

The following are the guiding regulations for road maintenance in Tanzania

**Table 2.1: Governing Regulations for Road Maintenance in Tanzania**

Regulations	Objective of regulations	Key requirements in relations to the maintenance of roads	Responsible entity
<b>Road and Fuel Tolls Regulations, 2016</b>	The regulations provide the insights for the planning of road maintenance systems, road and fuel tolls collection modes, and disbursement and utilization of toll funds	<ul style="list-style-type: none"> <li>• Design road maintenance works in accordance with the road maintenance manuals and guidelines.</li> <li>• Carry out major maintenance works in accordance with the appropriate design and drawings</li> <li>• Maintenance works to be as per pavement and materials design manual and field-testing manual.</li> <li>• Road Funds Board to enter into Performance Agreement with an implementing agency</li> <li>• Road Fund Boards the Board shall monitor the use of funds disbursed to TANROADS</li> </ul>	TANROADS  Ministry of Works  Roads Fund Board
<b>Public Procurement Regulations, 2013</b>	The regulations cover issues related to procurement of road maintenance works and consultancies	Regulations stipulate that, all procuring entities should maintain all information, documents and all studies related to building works. It further stipulates that Procuring Entities should ensure works are complete on time in accordance with the procuring entity's priorities so as to achieve economy and efficiency.	TANROADS  Roads Fund Board  Ministry of Works
<b>The Engineering Works, Services and Projects Monitoring Regulations, 2015</b>	Regulations of works, services and projects monitoring	Regulation require TANROADS inspection Team to have inspection tools such as relevant Checklist, Offence Book, Stop order Book, Penalty notice, Cameras, Field notes, GPS P.P.Es, measuring Tapes etc.	TANROADS  Roads Fund Board

*Source: Auditors' Analysis, 2021*

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## 2.2.4 Goals and Objectives

The Goals and Objectives of roads maintenance are summarized in various strategic guiding documents described in *Appendix Seven* of this report.

## 2.2.5 Guidelines on Road Maintenance

The guidelines used during planning, execution and supervision of road maintenance in Tanzania are stipulated in *Appendix Eight* of this report.

## 2.3 Roles and Responsibilities of Key Actors and Stakeholders

### 2.3.1 Roles of the Key Stakeholders

Ministry of Works and Transport (MoWT), PO-RALG, and Roads Fund Board (RFB) and TANROADS are the key stakeholders responsible for management of roads maintenance activities specifically Regional and Trunk roads in the country. Their respective roles are briefly explained below:

***The Ministry of Works and Transport (MoWT) through Directorate of Roads***

The MoWT through the Directorate of Roads has been mandated with the following roles and responsibilities: to develop, monitor, evaluate and review transport policies, legislations, regulations, programs, guidelines and standards for improving efficiency and making the transport sector more responsive to the present and future needs of the country. In addition, MoWT is responsible for monitoring and evaluation of the transport sector performance which include the Authorities, Executive Agencies and other Public Institutions under the sector and transport Implementing Authorities/Agencies.



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### ***The Roads Fund Board (RFB)***

The functions of the Board with respect to Maintenance of Roads are:

- (a) To ensure full collection and transfer of collected roads and fuel tolls to the Fund's account;
- (b) To develop and review periodically the formula for fund allocation and disbursement from the RFB to TANROADS, local authorities and other agencies,
- (c) To recommend to the roads minister an allocation of funds for TANROADS and TARURA, to undertake road management at a level that is suitable and affordable as well as disburse funds from the Fund to PO-RALG, MoWT, TANROADS and TARURA and other agencies;
- (d) To ensure that the operations of TANROADS, or other road agencies and the Fund, are technically and financially sound; and
- (e) To monitor the use of the disbursed funds to TANROADS or other agencies for the purposes stipulated in the Fund;

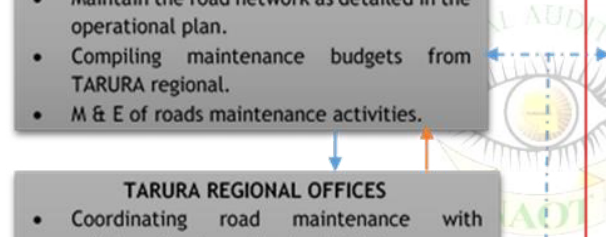
### ***Tanzania National Roads Agency (TANROADS)***

The roles and functions of TANROADS as provided for under Rule 3 (3) of the Executive Agencies (The Tanzania National Roads Agency (Amendment) Order No. 350 of 2009 among others include:

- (a) To undertake procurement and management of contracts for design, maintenance, emergency repairs, spot improvements, rehabilitation, upgrading and construction of roads under its control;
- (b) To improve road safety and reduce negative environmental impact in the road network under its control;
- (c) To establish and maintain appropriate road databank; and
- (d) To advice the Ministry responsible for roads on regulations and standards for road works.

### **2.3.2 Roles of Other Stakeholders**

Transport sector involves different stakeholders including the Ministries, Agencies, Regulatory Bodies, Professional Bodies and Academics. The roles and responsibilities of all these actors are described in **Figure 2.2** below:



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**Legend: Relationship between Key Actors**



**Reporting on implementation of roads maintenance and contractors registered**



**Strong communication high level top bottom. Formulating policies, technical audit and registration of contractors for execution, inspection and supervision of Roads Maintenance.**



**Registration of contractors and Projects when required imaginary communication**

## **2.4 Resources for Management of Maintenance of Roads by TANROADS**

### **2. 4.1 Funding for Maintenance of Roads in the Country**

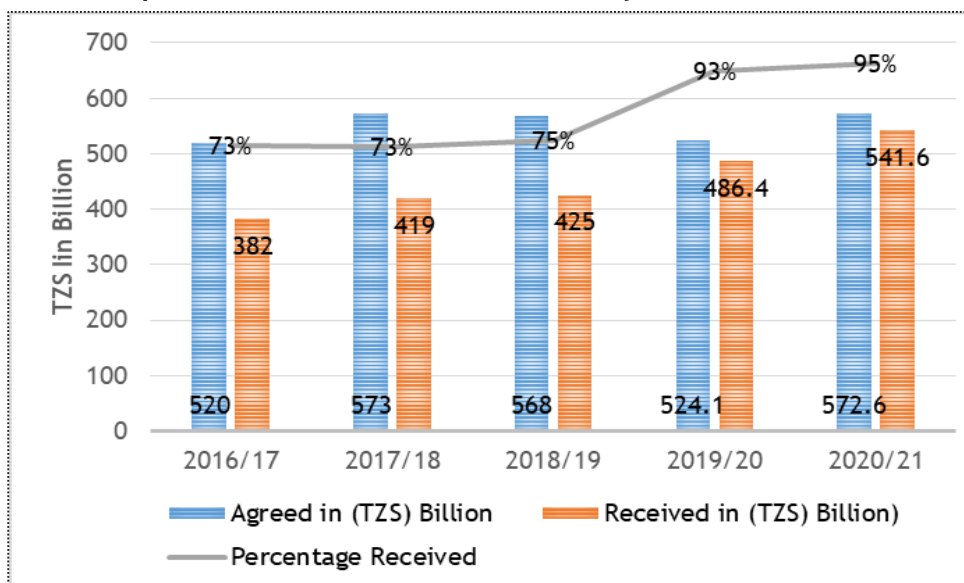
Funds for maintenance of roads in the country are collected from road and fuel tolls. The fuel levy and transit charges as part of Road and Fuel Tolls are collected by Tanzania Revenue Authority (TRA) while other sources are collected by respective key stakeholders of road maintenance. The collected funds from the fuel levy and transit charges are directly deposited by TRA into Roads Fund Board account.

#### ***Disbursement of Funds***

The Ministry of Finance and Planning disburses fund to the Roads Fund Board. The Board releases maintenance funds directly to TANROADS and TARURA by 63% and 27%, respectively. The remaining 10% of the funds for road development works is released to MoWT and PO-RALG by 7% and 3%, respectively.

The Annual Performance Agreements for maintenance and development of roads are entered between Road Fund Board and TANROADS and MoWT with the requirement of submitting an approved annual operational plan. The budget of roads maintenance and related administrative costs that also includes supervision for financial years 2016/2017 up to 2020/2021 is indicated in **Table 2.1** below:

**Figure 2 3: Budget for Roads Maintenance, Administrative Costs and Supervision versus Disbursed Funds by Roads Fund Board**



*Source: Annual Performance Agreement and Annual Reports (2016-2021)*

From **Figure 2.3** above, it can be noted that the percentage amount of the disbursed funds ranged between 73% and 95%. In 2016/17 the TANROADS received 73%, in 2017/18 TANROADS received 73% and in 2018/19 Road Funds disbursed 75% of the required. Similarly, in the FY 2019/20 and 2020/21, TANROADS received 93% and 95% of the approved budget respectively.

For more details of funding processes are as described in **Appendix Nine**.

#### **2.4.2 TANROADS' Human Resources**

The Chief Executive Officer of TANROADS was also required to employ enough number of staff or engineers for project supervision and monitoring. This was because among the key inputs on achieving the set targets is manpower or human resources. TANROADS' Human Resources for five years is as shown in **Table 2.2**:

**Table 2.2: TANROADS' Human Resources**

Financial Year	Required No of Staff	Available	Shortage no of Staff	% Shortage
2016/17	849	837	12	1
2017/18	993	792	201	20
2018/19	1095	738	357	33
2019/20	1772	696	1076	61
2020/21	1781	733	1048	59

*Source: TANROADS PEs and Staffing level 2016/17-2020/21*

From **Table 2.2** above, it can be noted that the overall shortage of staff at TANROADS had increased from 1% in 2016/17 to 59% in 2020/21. The highest shortage was on the Engineers and Quantity Surveyors in respective regions. The overall TANROADS' staff in the country decreased due increasing number of retired staff.

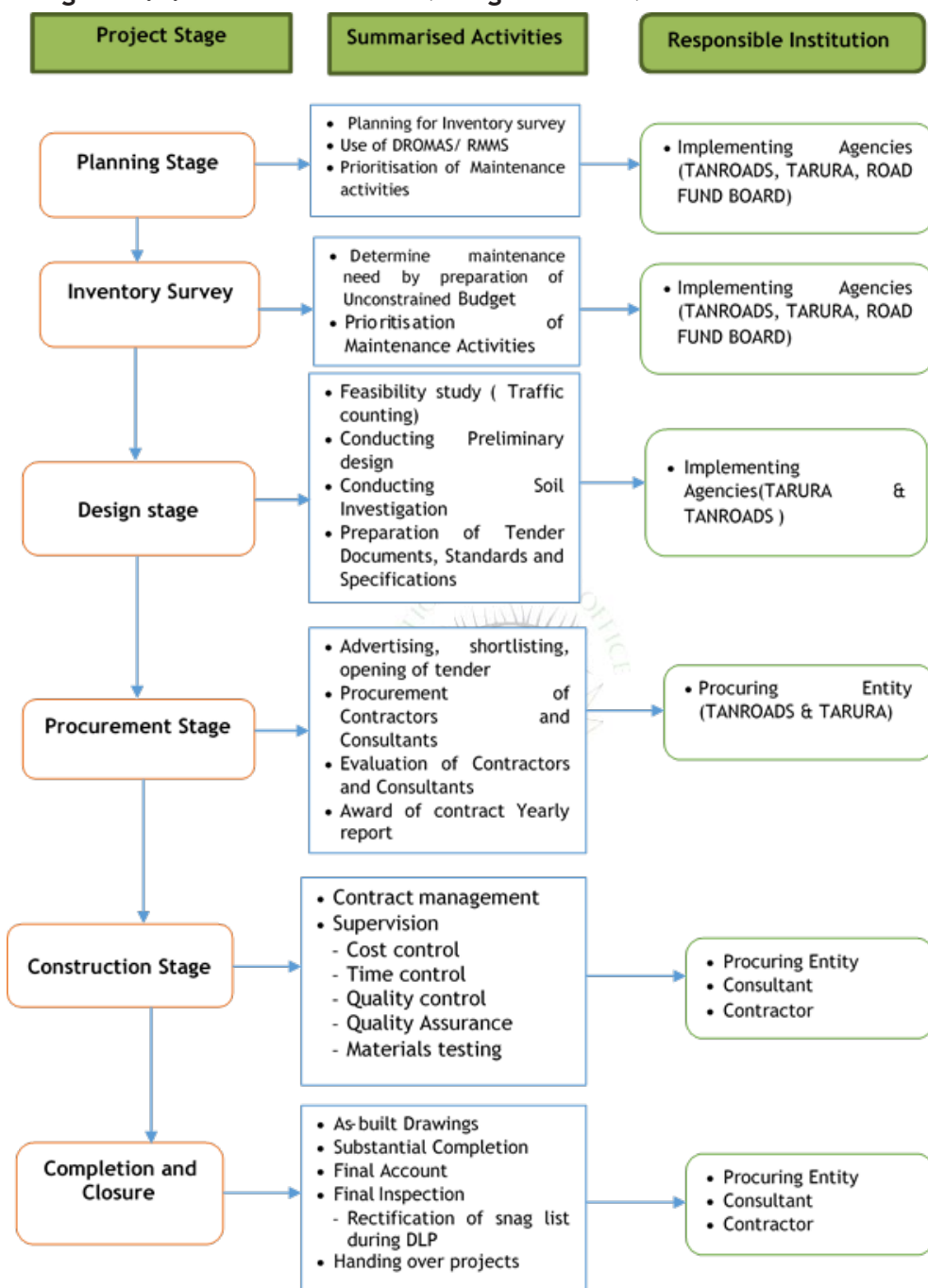
## **2.6. Process of Managing Maintenance of Roads**

The maintenance of the roads in the country is governed by laws, regulations and procedures or guidelines. The guidelines are then issued or disseminated by respective Ministries i.e., PO-RALG and MoWT in respective LGAs and other institutions and authorities like (Roads Fund Board, CRB, TANROADS and TARURA, entrusted with responsibilities of roads funding, and maintenance in the country.

Practically, maintenance of roads is carried out by respective contractor under supervision of TANROADS while other players are part and parcel of the process. Maintenance is categorised into four levels of dimensions/stages excluding rehabilitations and Major maintenance of Bridges which had to undergo designs.

A detailed process for management of maintenance (Periodic, Major Bridge Repair and spot improvement) of Roads is as shown in **Figure 2.4** below:

**Figure 2.4: Processes for the Management of Maintenance of Roads**



*Source: RMMS Operational Manual of 2010 and Maintenance Operational Plans, and Interview with Officials TANROADS*

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## CHAPTER THREE

### FINDINGS ON PLANNING AND PROCUREMENT OF ROADS MAINTENANCE WORKS

#### 3.1 Introduction

This chapter presents findings on the extent to which the Ministry of Works and Transport (MoWT) through TANROADS, has been effectively planning and procuring consultants and contractors for maintenance of roads works in the country. The audit findings are presented below:

#### 3.2 Existence of Roads with Unsatisfactory Conditions

*To what extent roads with poor condition exist in the country?*

The condition of road in the country depends on the quality of constructed roads as well as timely execution of maintenance works. The quality of roads relies on the prescribed quality and standards and respective design and specifications.

The Audit Team noted that, despite efforts towards improvement of roads maintenance in the country by TANROADS, some of the roads in the country are still in poor conditions. Existence of roads with poor conditions was indicated by the following evidence:

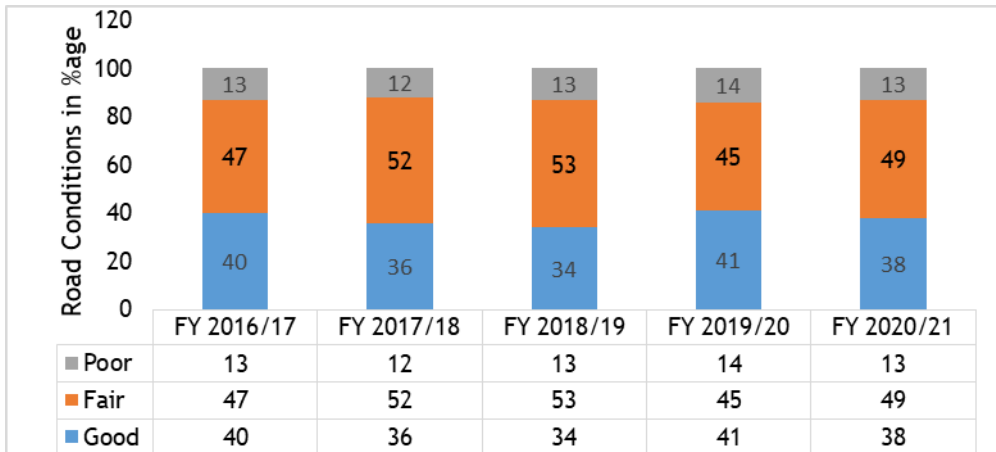
##### 3.2.1 62% of Roads in the Country had Fair and Poor Conditions

*In which condition are the roads in Tanzania?*

According to Regulation 4(2) of Road and Fuel Tolls Regulations, 2016, an Implementing Agency (TANROADS) is required to carry out major maintenance works in accordance with the appropriate design and drawings. The Agency was also expected to ensure that roads in the country are in good conditions and passable throughout the year.

However, the Audit Team noted that for the period from 2016/17 to 2020/21, 12% - 14% of roads in the country were in poor condition. **Figure 3.1** shows the conditions of roads in the country.

**Figure 3.1: Road Conditions in the Country from 2016/17-2020/21**



*Source: RMMS Roads Condition Data Base and Maintenance Operation Plan of Fiscal Year 2015/16-2020/21*

As it can be seen from **Figure 3.1**, in the financial year 2016/17, 13% of roads in the country had poor conditions. The maximum percentage of roads with poor conditions was noted to be at 14% in the financial year 2019/2020. Likewise, in 2020/21, still 13% of roads in the country had poor condition. The percent of roads with poor condition remains the same at 13% from the financial year 2016/17 to 2020/21 respectively. In general, **Figure 3.1** indicates that, for the period of five financial years, on average 62% of roads in the country were either in fair or poor conditions.

The existence of roads in the country with poor conditions resulted from early deterioration of roads pavement structures due to unmaintained defects. This was evidently and verified during the site visits conducted by the Audit Team whereby, the team observed defects like alligator cracks, transverse cracks, and edge cracks, loss of shoulder width and materials, rutting, shoving, potholes, ravelling (porous asphalt) and bleeding on wearing course. The observed defects are shown in **Photo 3.1&3.2**





Photo 3.1: Loss of shoulder width along Morogoro Dodoma Road (caption of 03<sup>rd</sup> November, 2021)



Photo 3.2: Alligator cracks along Morogoro Dodoma Roads (caption of 03<sup>rd</sup> November, 2021)

Photo 3.1 and 3.2, show defects that were observed from the visited roads in Morogoro Region. These defects led to poor conditions and early deterioration of roads. Table 3.1 shows roads with defects as observed during conducted site visits.

Table 3.1: Road Defects observed from the Morogoro Regions

Region	Type of Defects									
	Alligator	Edge Cracks	Transverse Cracks	Potholes	Loss of Shoulder or carriageway	Rutting	Shoving	Raveling	Bleeding on Wearing Course	Loss of Gravel Mmaterial
	Number of Roads Affected									
Morogoro	1	1	1	1	2	2	2	1	2	1
Mbeya	2	2	2	2	2	2	1	1	1	1
Lindi	2	2	2	2	2	2	2	1	1	1
Mara	1	2	1	1	2	2	2	2	1	1
Singida	0	0	0	0	0	0	0		0	0
Manyara	2	2	2	2	2	2	2	1	2	1
Katavi	0	0	0	0	0	0	0	0	0	0
TOTAL	8	9	8	8	10	10	9	6	7	5

Source: Auditors' Analysis, 2021

Table 3.1 indicates that, 12 out of 21 roads from seven visited regions had had rutting and loss of shoulder/carriageway width. These defects appeared to paved (trunk and regional) roads. The most affected roads which had more severe defects included; Morogoro - Dodoma Road, TANZAM Highway, Mbeya - Chunya, Gehandu - Babati, Bereko - Babati - Minjingu, Marendegu -

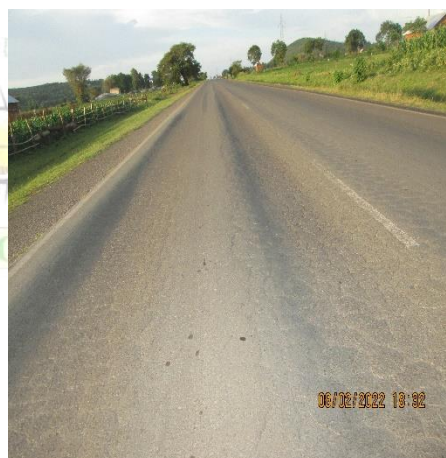
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Nangurukuru and Musoma - Simiyu. The observed defects on these roads included; Alligator cracks, edge cracks, traverse cracks, pot holes, and loss of shoulder width, rutting, ravelling and bleeding. Likewise, Msamvu-Morogoro- Bigwa Junction had defects such as ravelling, shoving, rutting and shoving.

This was due to overloading of heavy traffic as described in **Table 3.3** below, inadequate quality of maintenance activities, untimely maintenance and elapsed life span which led to prolonged maintenance period. The reasons provided from the interviews held with TANROADS Officials was that delays happened due to deficit of maintenance funds. As a result, there were roads with defects which could not maintained in time due to deficit of funds. **Photo 3.3 & 3.4** below shows roads with defects as observed from visited regions:



**Photo 3.3:** Pothole observed along the centerline and carriageway of Gehandu - Babati Road (Caption of 08<sup>th</sup> February 2022)



**Photo 3.4:** Rutting and alligator cracks on Asphalt Wearing Course along Bereko - Babati - Minjingu Road (captions of 08<sup>th</sup> February 2022)

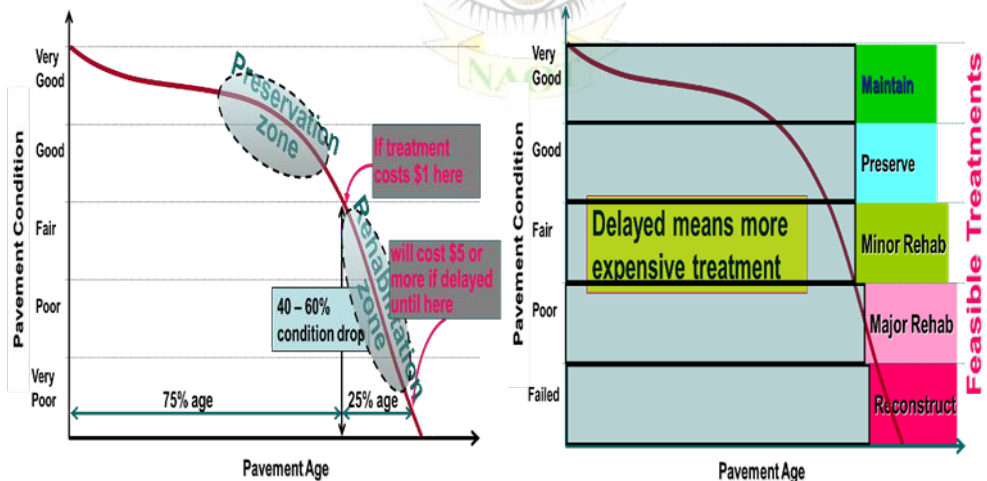
**Photo 3.3 & 3.4**, shows observed defects along Gehandu - Babati and Bereko - Babati - Minjingu roads. These defects were due to premature failure of pavement and traffic loading.

Interviews held with Officials from MoWT, TANROADS and Roads Fund Board indicated that existence of roads with poor condition was due to the fact that, the road network was rapidly increasing but sources of funds for the maintenance of roads remained the same between 2016/17 and 2020/21 by

**TZS 868 Billion** as shown in **Figure 3.2** below. Similarly, the roads were beyond their life span due to delay in the maintenance of roads. Other factors contributed to delays in roads maintenance are delays in issuance of GN (tax exemptions), re-scoping of works from unconstrained maintenance budget and hence the executed maintenance activities did not reflect to actual maintenance needs. The details for each of the reasons are presented below:

### ***Substandard Construction of Roads and Prolonged Maintenance Period***

Auditors' analysis of the reviewed report<sup>1</sup> revealed that, delays in maintenance of roads was a major factor behind huge government spending on roads maintenance. An excerpt illustrates the scenarios in deferred maintenance of roads with poor condition in respect to aging of roads and consequences of delay in maintenance and financial needs. In addition, an excerpt below shows the impact of delay in maintaining roads in respect to condition and feasible treatment.



**Source:** Assessment of Road Maintenance Financing Deficit and Proposal to Widen Roads Fund Revenue Base of February, 2021 (Submitted MoFP)

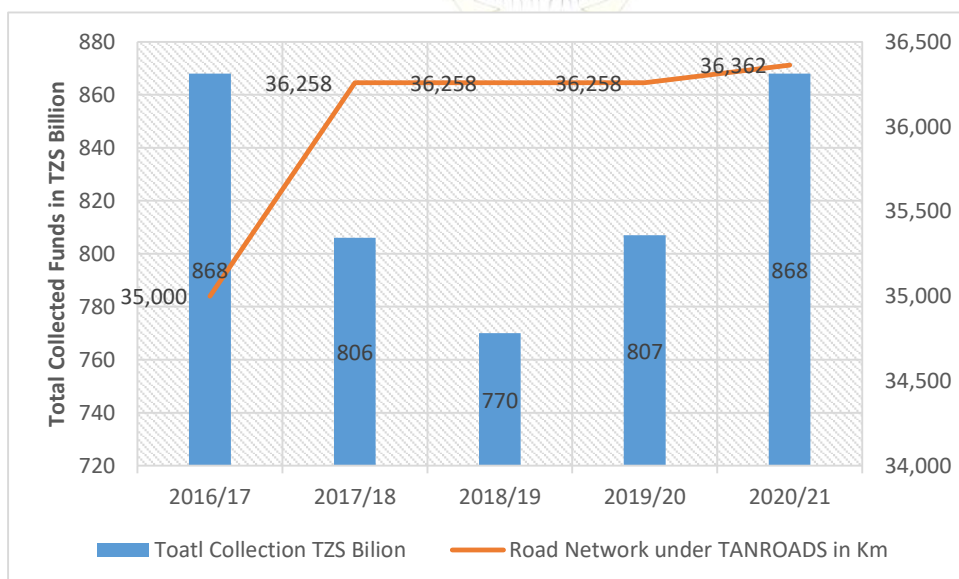
<sup>1</sup> A review of Assessment of Road Maintenance Financing Deficit and Proposal to Widen Roads Fund Revenue Base of February 2021 (Submitted to MoFP)

### ***Sources of Funds for Maintenance Remained the Same Despite Increase in Road Networks***

The audit team noted through the review of Road Maintenance Financing Report of 2021 that the sources of funds for financing roads maintenance activities remained the same despite of the increased road network. This was due to ineffective implementation of the Road Fund Board strategies to widen the sources of funds.

The Audit team ' through analysis of fuel collection trend noted that the collection from fuel levy charges dropped by 7% from 2016/17 to 2019/2020; while the road network increased from 35,000 km in financial year 2016/17 to 36,362 km from 2017/18 as shown in **Figure 3.2**: The reason provided from RFB it was because; there was no new sources of maintenance funds, the ceiling Budget from MoFP regarding maintenance works and also the funds for roads maintenance depends only on the collected fuel levy and revenue in each financial year.

**Figure 3.2: Trend of Collection of Fuel Levy against the Increased Road Network**



**Source:** The Annual Progress Report 4<sup>th</sup> Quarter 2016/17-2020/21 and Roads Fund Board Financial Release to Implementing Agencies.

It can be seen in **Figure 3.2** that, the total collection of maintenance funds from fuel levy and transit charges increased d from TZS 756 Billion in

2016/17 to TZS 868 in Billion in 2020/21 while the road network increased from 35,000 km in the financial year 2016/17 to 36,362 km in financial year 2020/21. This was due to inadequate sources of funds which remained the same for previous five years.

It also revealed that the allocated budget did not adequately cater for the actual maintenance needs. Likewise, the collected funds from the two sources that are fuel levy and Transit Charges did not meet the planned constrained budget as indicated in **Table 3.2:**

**Table 3.2: Maintenance Funds Collected against Approved Constrained Budget**

FY	Total Collections in TZS Billion from fuel Levy and transit charges	Approved Budget TZS Billion	% of collection to budget	% of collection to budget deficit
2016/17	756	832	91	-9
2017/18	806	909	89	-11
2018/19	770	909	85	-5
2019/20	807	839	96	-4
2020/21	868	917	95	-5

*Source: Annual Operation Plans and Annual Reports (4th Quarter) of 2016/17-2020/21*

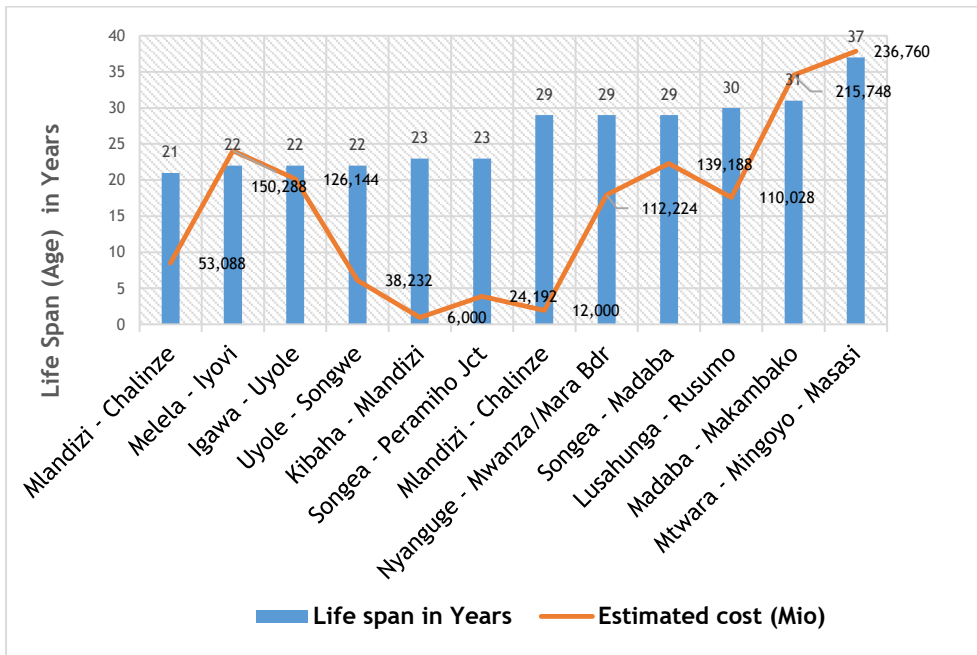
From **Table 3.2**, it can be seen that the collection of fuel levy and transit charges against budget had deficit ranging from 4% to 11%. The Minimum deficit was in financial year 2019/20 while the maximum deficit was in 2017/18. Generally, the collected funds did not cater for the approved budget for road maintenance activities. The reasons provided through interview held with Roads Fund Board Official was inadequate sources of funds. Inadequate sources of funds led not to fully maintaining roads in the country.

This implies that, MoWT through TANROADS did not adequately manage to improve the condition of roads in the country through the maintenance roads for the five fiscal years that were covered.

### *Roads were Beyond their Life Span due to Delays in the Maintenance*

The life span for the Asphalt Concrete paved roads is 20 years while Surface dressing ranged for 5 to 15 years depending on the surface type, traffic load class, and pavement structure. Through the review of Assessment of Road Maintenance Financing Deficit and Proposal to Widen Roads Fund Revenue Base of February 2021, the Audit Team noted roads which were beyond their life span, due to untimely maintenance and rehabilitation of Trunk and Regional Roads. The audit noted that currently such roads require rehabilitation or reconstruction. **Figure 3.3.** Presents the example of roads which were found to be beyond its life span.

**Figure 3.3: Example of Paved Trunk Roads which were beyond its Life Span**



*Source: Auditors' Analysis of Assessment of Road Maintenance Financing Deficit and Proposal to Widen Roads Fund Revenue Base of February 2021 (Submitted MoFP)*

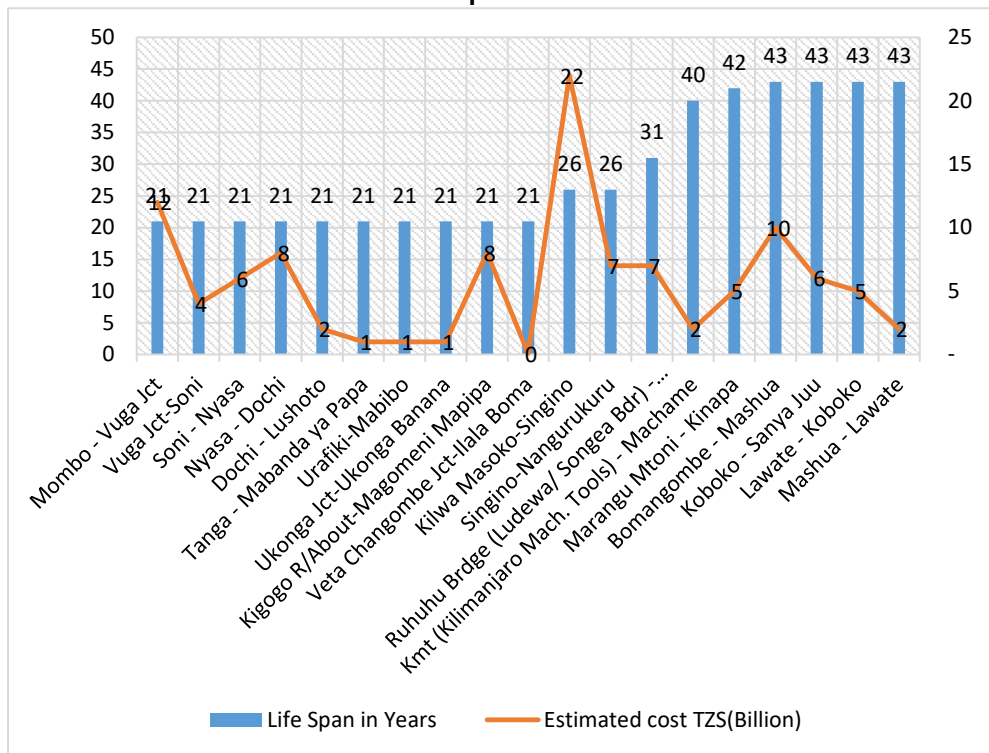
From **Figure 3.3**, it can be seen that the Trunk Roads were beyond their life span for the period ranging from 21 to 37 years old. It can be seen that, the Trunk road with minimum Life span was Mlandizi- Chalinze while older road is Mtwara - Mingoyo - Masasi Road. These roads were supposed to be rehabilitated after their life span elapsed. However, the life span of roads



found to be up to 37 years of age. This could be result into severe defects and failure of pavement structural layers.

Similarly, Regional Roads which were found to be beyond their life span were found to have life span between 21 to 43 years of age. The Regional Roads which were beyond their life span are presented in Figure 3.4:

**Figure 3.4: Regional Roads with Life Span Found to be Beyond its Life Span**



*Source: Assessment of Road Maintenance Financing Deficit and Proposal to Widen Roads Fund Revenue Base of February 2021(Submitted MoFP*

It can be seen from Figure 3.4, those regional roads had minimum life span of 21 to 43 years which are beyond their life span. Example of roads which found to be beyond their life span included Mombo - Vuga Junction, soni - nyasa, Urafiki - Mabibo, Ukonga Junction to Ukonga Banana, Kigogo Roundabout - Mapipa, Veta Chang'ombe to Ilala Boma, Kilwa Masoko - Singino, Singino - Nangurukuru and Songea to Madaba roads had 21 years of age.

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The roads which were also found to have life span ranging from 26 to 43 years as presented in **Figure 3.4** include; Kilwa Masoko- Singino, Ruhuhu-Madaba, Kilimanjaro - Machame, Marangu mtoni - Kinapa and Msshua Lawate. This was due to delay in rehabilitation of the aforementioned roads after when its life span elapsed.

As a result, the roads were maintained at a high cost beyond their maintenance budget because it was supposed to be rehabilitated. This led to, re-scope the maintenance activities so as to evenly distribute the maintenance funds to these roads beyond its life span.

### ***Delays in Issuance of GN for Tax Exemptions***

The Audit Team noted that delays in completion of roads maintenance projects by 33% as indicated in section 4.3 of this report was partly due to delays in issuance of GN Tax exemptions for the projects funded by the Government and Donors.

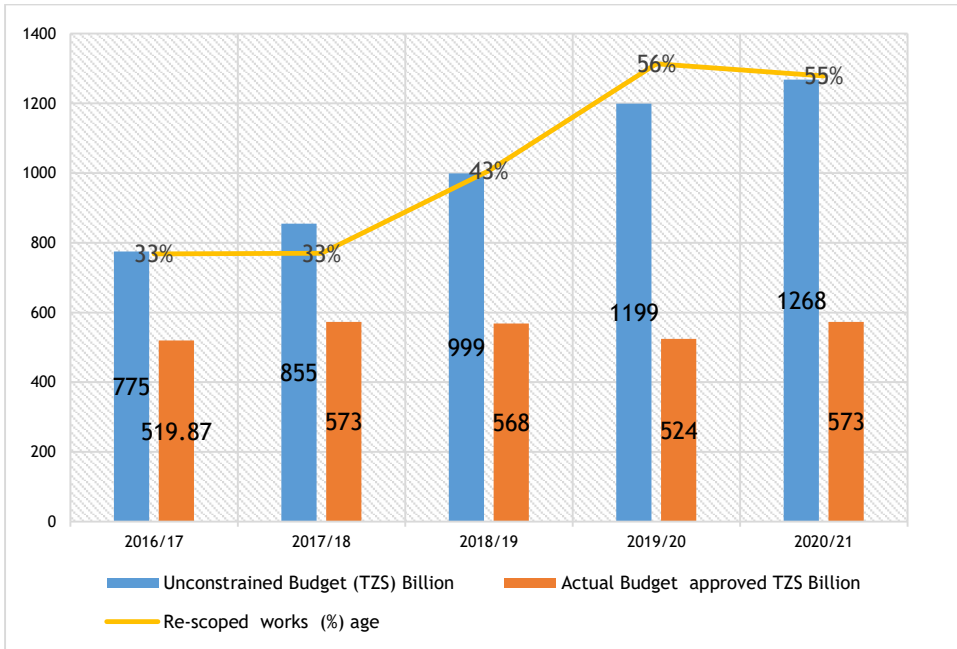
Such delays were confirmed through interviews held with officials from TANROADS whereby they insisted that, without Tax Exemptions it is prohibited to commence any activity unless the contractor agrees to execute the project at his own risks. This directive has led to delays in commencement and completion of roads maintenance projects. The analysis in Section 4.3 of this report shows that the maximum average period of delays were 211 days and found in Katavi Region and while the minimum period of 83 days was found in Mbeya Region.

### ***Re-scoping of Works from Unconstrained Maintenance Budget***

The Audit Team noted that, a re-scoping of maintenance works due to the deficit in maintenance funds, implying that the actual maintenance needs were not fully attended. The extent of re-scoping of unconstrained budgets for five years is presented in **Figure 3.5**.



**Figure 3.5: Extent of Re-scoped Maintenance Needs Against Collections (TZS Billion)**



*Sources: The Maintenance Operation Plans and Annual Progress Reports (4<sup>th</sup> Quarter) of 2016/17-2020/21*

It can be seen from **Figure 3.5** that, in the financial year 2016/17 the unconstrained maintenance budget was re-scoped by 33% while in 2020/21 was re-scoped to 55%. Generally, the re-scoping of unconstrained budget increased from financial year 2017/18 to 2020/21. This was due to constant maintenance budget which did not cater for the actual maintenance needs. As a result, road maintenance activities were not fully attended as required. For instance, in the financial year 2020/21, actual maintenance need (Unconstrained) was TZS 1,268 Billion which was re-scoped to a planned Budget (constrained) of TZS 695 Billion while actual approved budget was TZS 573 Billion. This implies that, the work was re-scoped to 55%. As a result, 55% of maintenance activities were not attended in 2020/21. This contributed greatly to the deterioration of roads some resulting to severe defects.

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### ***Traffic Overloading of (Heavy Good Trucks)***

Overloading is also among the factors contributing to the pavement failure and poor condition of roads. Reviewed Annual Progress reports (4<sup>th</sup> Quarter) indicated the overloading of Heavy Goods Vehicle (HGV) Trucks as indicated in Table 3.3.

**Table 3.3: Trends in Overloading of Heavy Trucks for Five Financial Years**

Financial Year	Number of weighed vehicle	No. of Overloaded vehicles	No. of vehicles overloaded beyond 5%	% of overloaded vehicle beyond 5%	% of Overloaded vehicles
2016/17	3,661,729	1,098,555	42,737	1.17	30.00
2017/18	4,433,089	1,390,305	50,090	1.13	31.36
2018/19	5,730,863	1,698,330	41,426	0.72	29.63
2019/20	6,944,691	1,869,120	46,093	0.66	29.91
2020/21	8,831,931	2,450,481	51,360	0.58	27.75

*Source: Annual Progress Report (4<sup>th</sup> Quarter) of 2016/17-2020/21*

It can be seen from **Table 3.3** that, there is a slight decrease of truck overloading from 30% in 2016/17 to 27.75 % in 2020/21. The maximum overloaded number of trucks occurred in 2017/18. The overloading led to damage of pavement layers which resulted to poor road condition in the country.

Further, the reviewed Roads Fund Assessment Report indicated that, poor condition of road was due to inadequate routine and periodic maintenance. This situation the audit noted normally leads to costlier treatments of what would be cheaper works i.e., minor and major rehabilitations. The effects of delays in roads maintenance led to increasing demand of government funds for the maintenance works.

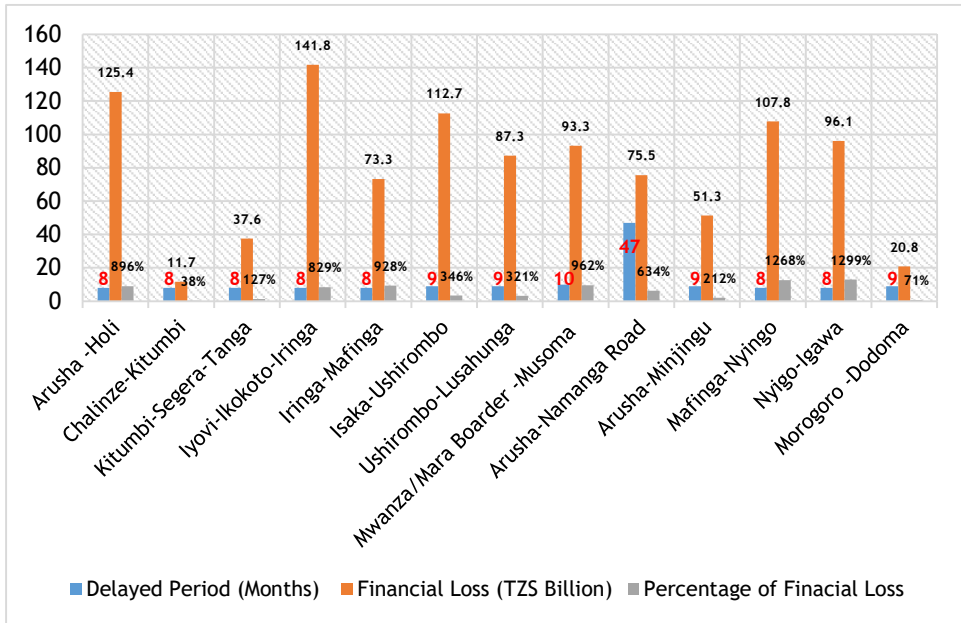
For instance, the same report<sup>2</sup> indicated that, based on current unit cost of periodic maintenance and major rehabilitation for the national paved roads, delayed periodic maintenance increase maintenance costs **by 6.4 times** for asphalt concrete and **17 times** for surface dressing. The report indicated

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<sup>2</sup>Roads Fund Report on Assessment of Road Maintenance Financing Deficit and Proposal to Widen Roads Fund Revenue Base of February 2021 (Submitted MoFP)

that there exist road sections that have deteriorated from fair to poor condition due to lack of funds to finance periodic maintenance at appropriate time. **Figure 3.6** presents the financial consequences resulting from delayed maintenance for 13 different road sections.

**Figure 3.6: Financial Consequences of Delayed Roads in Maintenance**



*Source: Assessment of Road Maintenance Financing Deficit and Proposal to Widen Roads Fund Revenue Base of February 2021(Submitted MoFP)*

It can be seen that, delays in maintenance of roads for the periods that ranged from 8 to 47 months led to the respective financial loss that ranged from TZS 11.7 Billion and 141.8 Billion equivalent to 38% to 1299% of the original planned maintenance cost. It can be seen from the **Figure 3.6** above that, the Government spent excess amount of TZS 1,034.5 Billion above the planned maintenance cost of TZS 250 Billion. This is equivalent to the loss of 414% of the planned maintenance funds. This implies that, the Trunk and Regional roads were rehabilitated or reconstructed at much higher cost after deteriorating to poor condition due to delayed periodic maintenance.

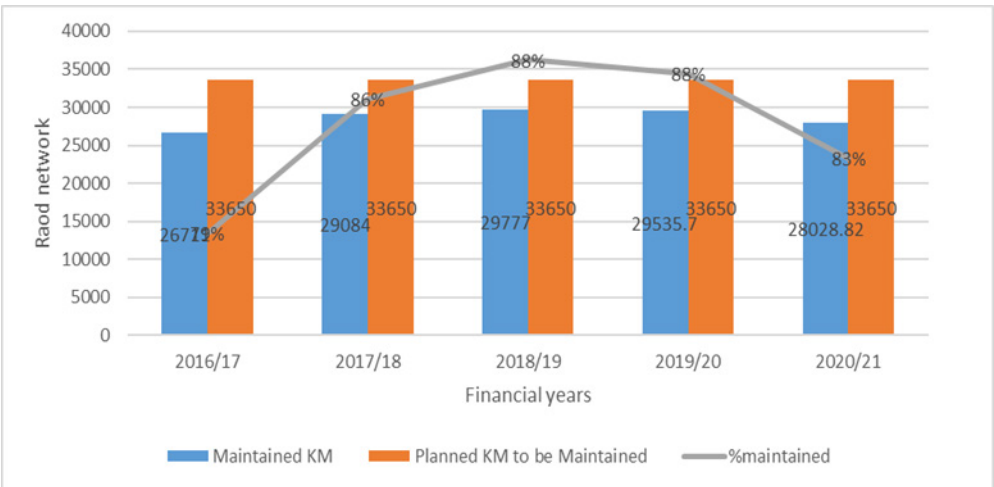
Furthermore, through the reviewed Maintenance Report<sup>3</sup> the Audit Team noted that, there was an increase of maintenance backlog that ranged from

<sup>3</sup> Maintenance Operation Plan, 2016/17-2020/21

TZS 422.5 Billion in fiscal year 2016/17 to TZS 700.4 Billion in the fiscal year 2020/21. This is equivalent to 66% increase due to road maintenance backlog because roads were not maintained for the last 5 financial years in the country.

Moreover, through the review of Fourth (4<sup>th</sup>) Quarter Progress Reports from financial year 2016/17 to 2020/21 it was revealed that that, despite increased in overall roads maintenance performance, there was a drop in the overall physical performances in road and bridges maintenance as indicated in **Figure 3.7**:

**Figure 3.7: Physical Performance (End of Financial Year in June 2020/21)**



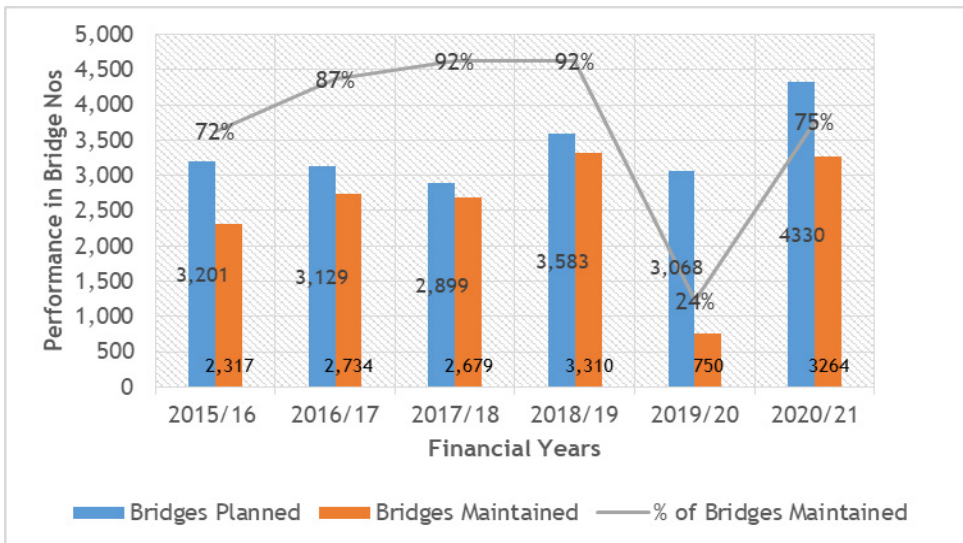
*Source: Operation Plans and 4<sup>th</sup> Quarter Progress Report from 2016/17-2020/21*

**Figure 3.7** indicates that, TANROADS' physical performance ranged between 83% in 2019/20 and 88% in 2017/18. It can be seen that, the drop-out in physical performance on the maintenance of roads occurred in the financial year 2020/21 whereby it dropped from 88% in 2019/20 to 83% in 2020/21. This is equivalent to 5% drop in the financial year 2020/21. The reasons for dropping out of performances were the shortage of maintenance funds and increased roads network as shown in **Figure 3.7** above.

On the other hand, the TANROADS was found to underperform in bridge maintenance as shown in **Figure 3.8**. The drop of performance was found to range from 92% to 24% between financial years 2018/19 and 2019/20 respectively. This is equivalent to a drop of 68% during that period.

TANROADS' Officials indicated that deficit of funds, ceilings provided for maintenance and untimely maintenance due to delays in the issuance of GN (VAT exemption) as among the reasons for delays in carrying out maintenance of roads. As a result of such factors, planned maintenance activities were not fully carried out leading the 68% drop in maintenance performance in the country.

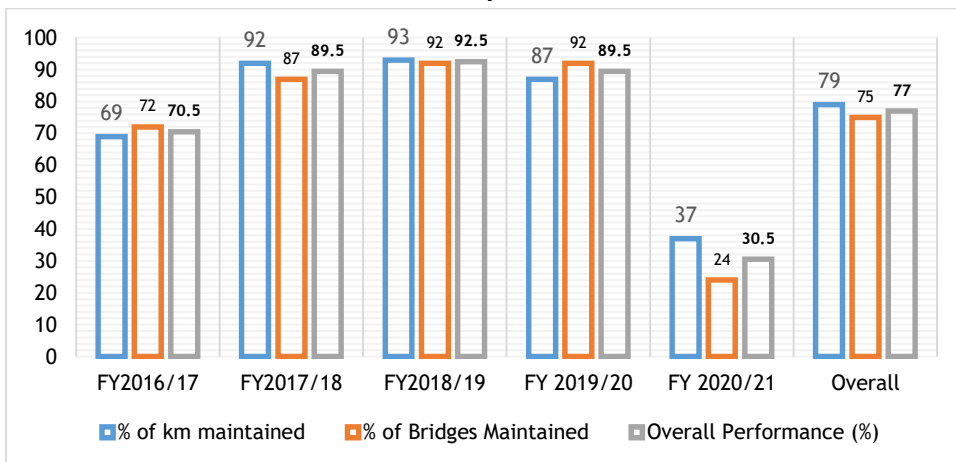
**Figure 3.8: Physical Performance on Bridge Major Repair and Preventive Maintenance**



*Source: Annual Progress Report 4<sup>th</sup> Quarter from 2016/17-2020/21*

Further analysis on the physical performance reports on road maintenance and bridge repairs indicated that, the overall performance in financial year 2020/21 was 77% for both routine and recurrent, spot improvement, periodic maintenance, and repair of bridges as shown in **Figure 3.9** below:

**Figure 3.9: Overall Performance on Road Maintenance and Bridge Repairs**



*Source: Annual Progress Report (4<sup>th</sup> Quarter) from 2016/17-2020/21*

It can be seen that, the overall performance on the execution of maintenance activities was improved in the financial year 2017/18 against the planned road maintenance by 92.5%. However, a drop can be seen between financial years 2019/20 and 2020/21 whereby the performance decreased from 89.5% to 30.5% which is equivalent to overall drop-out of 59%. In addition, despite the noted improvements, the average overall performance for the last five financial years was found to be 74.9%. This implies that, for the last five years TANROADS did not adequately maintain roads and bridges by 25%.

Inadequate overall performances were noted in the financial year 2020/21 by 30.5%. The reasons provided from the interviews held with TANROADS' Officials indicated that inadequate performance was due to deficit in maintenance funds released as detailed in **Section 3.6** of this report.

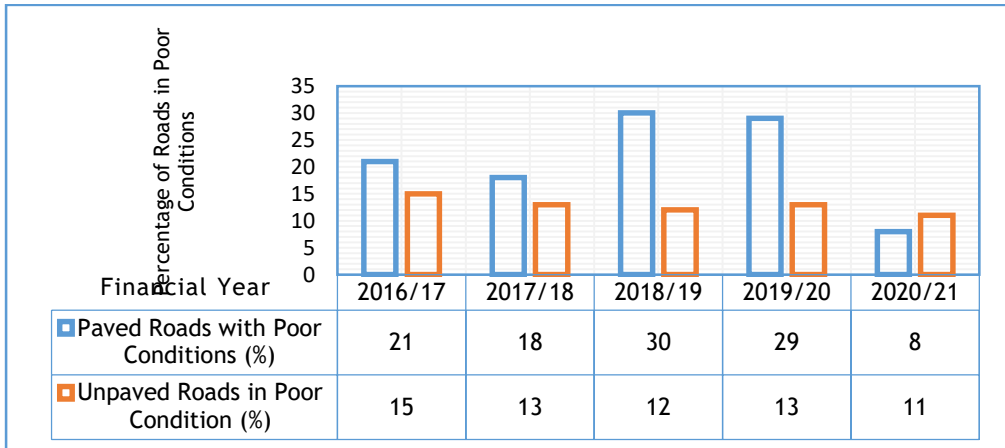
### **3.2.2. Unpaved Roads had High Percentage of Poor Conditions Compared to Paved Roads**

*What roads are in good or poor conditions?*

Through review of TANROADS' Roads Condition Survey Reports extracted from RMMS, the Audit Team noted that from the fiscal year 2020/21 both

paved and unpaved roads were in poor condition at 8% and 11% respectively. **Figure 3.10** shows the condition of unpaved and paved roads for each year.

**Figure 3.10: Condition of Paved and Unpaved Roads for Five Years in the Country**



*Source: RMMS Roads condition Data Base and Maintenance Operation Plan of Fiscal Year 2015/16-2020/21*

**Figure 3.10** indicates that, in the financial year 2020/21, unpaved roads were mostly affected by 11% of roads with poor condition while paved roads had 8% of poor roads in the country. It can be seen that, in the financial year 216/17, paved roads had 21% of poor roads condition while unpaved roads were found to have 15% of poor roads.

This implies that, the paved roads with poor conditions were improved by 13% from 21% in 2016/17 to 8% in 2020/21 while unpaved roads with poor condition were improved by 4% from 15% of 2016/17 to 11% of the fiscal year 2020/21. Despite of financial constrain in 2020/21, the availed data for conditions of roads showed that there were some improvements.

Despite the efforts by TANROADS to ensure that roads which are in poor conditions are maintained throughout the country, the five years analysis shows that some of the roads in the country were still not improved. The analysis further showed that the most affected roads were paved roads by average of 21.2% compared to unpaved roads which had average of 12.8% for past five years. However, in 2020/21 unpaved roads were found to be in poor condition by 11% while paved had 8% of poor roads.



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### 3.2.3 Unpaved Roads Found to be Badly Affected

The Audit Team noted that, unpaved roads are the most affected roads. This was because the impact of maintenance conducted is not durable and not generally realised because during rainy season the roads encountered defects such as: loss of gravel materials, rutting, stoniness and side drains siltation. For instance, in Financial Year 2020/21, unpaved roads were in poor condition by 11% comparing to the paved roads which had 8%.

Through the interviews the TANROADS' Officials also pointed out that, unpaved roads were badly affected due to untimely maintenance, contributed by the long-time taken for the planning of the maintenance works coupled with delays in issuance of tax exemptions due to delayed in publication of Government Notice (GN). As a result, in most cases the planned maintenance activities rolled over to the next financial years. **Photo 3.3** shows the defects observed on portion of the unpaved Bigwa-Kisaki Road as it was taken by Auditors in Morogoro Region.



**Photo 3.3:** Shows badly affected Bigwa - Kisaki Road with defects (Stoniness) and traffic-ability on shoulder (Caption by Auditor on 03<sup>rd</sup> November 2021)

**Photo 3.3,** shows stoniness and traffic-ability defects along carriageway and shoulders. This was due to the types of materials used for the construction in Bigwa - Kisaki roads. Interviews with TANROADS' officials in Morogoro Region Office revealed that the choice of material was due to scarcity of



gravel materials. As a result, the road was of poor riding quality to the users which led traffic to use shoulders.

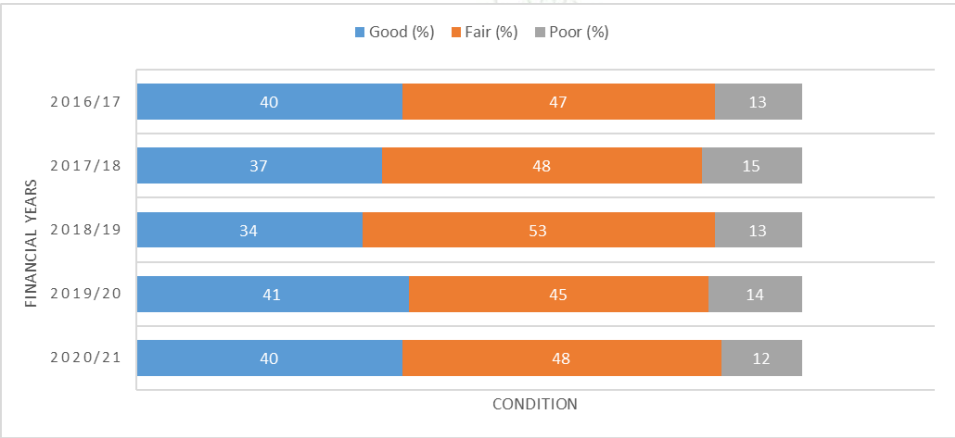
3.2.4. Rank of Road Condition Severity in the Country

*What are the ranks of roads condition severity?*

Auditors’ analysis of the Annual Progress (4<sup>th</sup> Quarter) Reports of 2016/17 to 2020/21 indicated that, for the last five financial years, on average 48.20% of roads in the country were in fair conditions, 38.4% of roads were good conditions and 13.40 % were poor condition.

Figure 3.11 provides the summary of the condition of roads for the five years.

Figure 3.11: Extent of Condition of Roads and its average in Percent



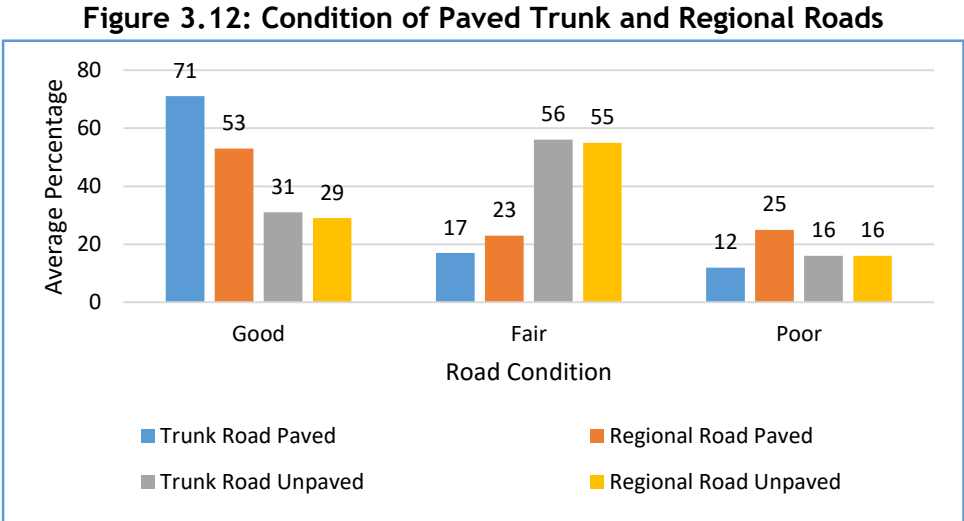
Source: Auditors’ Analysis of Annual 4<sup>th</sup> Quarter Reports of 2016/ 17-2020/21, 2021

From Figure 3.11 above, it can be seen that, roads in the country for the past five years had been in fair condition by 48.2%. Therefore, the fair roads would be the majority while roads with good condition had 38.40% and roads with poor conditions were at 13.4%. Generally, based on the interviews documents reviewed and analysed, the roads condition in the country could be ranked as fair by 48.2%

Also, from the 7 visited Regions, the Audit Team conducted analysis on the severity of road conditions ranking by surface type and found that for the

last five years paved trunk roads had good conditions as compared to unpaved trunk roads. The paved Trunk Roads from the financial years 2016/17 to 2021/21 were in good conditions by an average of 71%, fair condition by 17% and in poor conditions by an average of 12%.

On other hand for the past five years, Regional paved roads were in good conditions by an average of 53%, fair condition by 23% and poor condition by an average of 25% as the details in **Figure 3.12** show:



*Source: Annual Progress Report (4<sup>th</sup> Quarter) of 2016/ 17-2020/21*

From Figure 3.12 above, it can be seen that, Trunk and Regional paved roads were in poor conditions by an average ranging from 12% to 25%. Regional paved roads had severe poor conditions by an average of 25% compared to Trunk roads which had only 12%.

It can also be seen that for the fiscal years (2016/17-202021), Trunk and Regional unpaved roads had severe poor condition ranging from 13% to 16%. Regional unpaved roads had severe poor conditions by average of 16% when compared to unpaved trunk roads which had 13%. Hence, Regional paved and unpaved Roads had severe poor condition compared to Trunk paved and unpaved roads.

TANROADS' Officials indicated that regional roads had severe poor conditions because they are the class of roads which attracts heavy traffic. Officials also explained that Regional Roads were mostly used by heavy

trucks while they were not designed for type of traffic loading class. As a result, regional roads had severe poor condition which led to poor riding quality to the road users.

The audit also conducted analysis of the road condition for the 7 visited Regions and found out that, the percentage of poor road conditions ranged from 0% to 19% as indicated in **Table 3.4** below:

**Table 3.4: Road Conditions from the 7 Visited Regions**

Type of Roads	Condition	Number of Regions Falling in the Rank			
		0-19	20- 29	30-49	50-100
Paved Trunk Roads	Good	0	0	0	7
	Fair	7	0	0	0
	Poor	7	0	0	0
Unpaved Trunk Roads	Good	3	1	0	3
	Fair	2	2	1	2
	Poor	6	0	1	0
Paved Regional Roads	Good	0	0	0	7
	Fair	6	0	1	0
	Poor	7	0	0	0
Unpaved Regional Roads	Good	0	4	0	3
	Fair	0	2	3	2
	Poor	5	0	2	0

*Source: Auditors' Analysis from Annual Progress Reports (2016/17-2020/21) from TANROADS' Regional Offices, 2021*

**Table 3.4** shows that, all seven visited Regions had Paved Trunk and Regional Roads with poor conditions ranging from 0% to 19%. While the Unpaved Trunk and Regional roads in 6 and 5 out of 7 Regions respectively were found with poor condition ranging from 0% to 19%.

Similarly, 2 out of 7 Regions had roads with poor conditions ranging from 30% to 49%. These Regions included; Morogoro with 30% of unpaved trunk roads and 46 % of unpaved Regional Roads and while Mara Region had 40 % of unpaved Regional Roads. This implies that, Morogoro and Mara Regions had unpaved Roads with poor conditions among the 7 visited Regions. *More details about road condition in the visited regions are presented on Appendix Ten of this report.*

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### 3.3 Ineffective Planning for Road Maintenance Activities

#### *Are Maintenance Activities being Planned Effectively?*

TANROADS was expected to use the Roads Maintenance Management System in preparing maintenance operational plans and budget. The system is required to capture all actual and reasonable maintenance needs throughout the country. However, the Audit Team noted the following weaknesses regarding planning for the maintenance of roads in the country:

#### **3.3.1 Deficient Maintenance System for Establishing Actual Road Maintenance Needs**

##### *Are there functioning systems for establishing with reasonable accuracy needs for the road maintenance?*

Sub-regulation 3(3) of Roads and Fuel Tolls Regulation of 2016, stipulates that Road Asset Management System (RAMS) should include roads and bridges maintenance management systems and pavement and traffic management system and any other road management system as prescribed by the Board.

However, the Audit Team noted that TANROADS lacked a comprehensive RAMS which cover all aspect of road management contrary to sub-regulation 3(3) of the Roads and Fuel Tolls Regulations of 2016. This is because TANROADS had only Road Maintenance Management System (RMMS) instead of RAMS. This system was not comprehensive enough to enable the Agency to establish with reasonable accuracy the needs for the maintenance of roads.

Further, despite existence of Roads Maintenance Management System (RMMS) which was used by TANROADS in planning, it was noted that the system did not consider all road aspects during the planning. According to interviews held with TANROADS' Officials responsible for RMMS it was noted that TANROADS had no pavement Management System and the Bridge Maintenance had collapsed.

Likewise, TANROADS was expected to develop, update, and make effective use of the Roads Management Asset aspects including bridges, traffic, road

maintenance and pavement management. However, TANROADS in collaboration with MoWT and Roads Fund Board did not develop adequate system which could capture all important elements as required by sub-regulation 3(3) of the Roads and Fuel Tolls Regulations of 2016.

RMMS was meant for data storage and analysis of road network including inventory condition, traffic data and to be used in estimation of budgets for Routine Maintenance, Periodic Maintenance and Spot Improvement as well as management of Maintenance Contract. Despite the efforts by TANROADS to engage Consultant to conduct feasibility study of the RMMS, the Audit Team noted that, there were lack of comprehensive RAMS.

This was also contrary to subsection 6(1) i) of Road Act 2007 which requires TANROADS to update the RMMS so that it can capture all maintenance activities.

The Audit Team also analysed the status of RAMS components or modules developed and their functioning. The results of the analysis are provided in Table 3.5:

**Table 3.5: Status of Road Assets Management System Components**

Management System Component of RAMS	Functioning Status	Developed and in place	Remarks
Road Maintenance system	Yes	Yes	RMMS is used by TANROADS however it is not centralized and not shared by other stakeholders
Bridge Maintenance system	No	No	No evidence on its development. However, TANROADS Officials pointed out that it was developed but collapsed before it was put into application
Pavement Management System	No	No	No evidence on its development and TANROADS' Officials confirmed it.
Traffic Management System	No	No	It is among of the module in RMMS

*Source: Auditors' Analysis of Sub regulation 3(3) of Roads and Fuel Tolls Regulation, 2016*

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It can be seen from **Table 3.5** that, 2 out of 4 modules of RAMS were functioning and used by TANROADS for planning and budgeting for the maintenance of roads. The TANROADS' Officials pointed out that, the Bridge Maintenance System had never been used since it collapsed in 2016

However, the said two systems were not available for verifications. Therefore, 2 out of 4 Road Assets Management Systems were not yet developed up to the time of this audit.

Absence of functioning bridge and pavement modules implies that, the planning for the maintenance needs of roads was not adequately and accurately done. This was because, the RMMS used by TANROADS did not capture pavement conditions and bridge inventory.

This was also verified by the Audit Team when ascertaining the adequacy of RMMS on planning whereby it was revealed that, RMMS was not able to capture all the required information of roads for the maintenance needs.

The Audit Team noted that RMMS did not capture and use bridge, emergency works and pavement management information. This was because RMMS was used for two activities as databank of roads Inventory, condition and Traffic surveys and its inputs were used for preparation of maintenance works budgets.

### **3.3.2 Ineffective Use of Road Maintenance Management System**

*Does TANROADS effectively use the available maintenance planning system to capture condition of roads in the country and use for preparation of plans and budget?*

According to Sub-regulation 5(3) of the Roads and Fuel Tolls Regulations, of 2016 Cap 2020 GN No.10, TANROADS is required to use the Roads Maintenance Management System in preparing maintenance operational plans and budgets.

Through review of RMMS Data Collection Manual, 2017, the Audit Team noted that, RMMS was established with the aim of storing data for roads networks under its jurisdiction for efficient and effective maintenance planning and optimise use of available limited road maintenance resources.

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The system was required also generate different reports required by the internal and external stakeholders.

A review of the Evaluation of Road Projects Implementing Agency's Performance Year 2019/20 Report indicated that the compliance of project planning with the requirements of Performance Agreements decreased significantly by 12.3% from 86.2% in 2018/19 to 73.9% in 2019/20.

The drop in the use of RMMS in planning was mainly due to untimely and limited utilisation of HDM4 integrated software in RMMS for analysis. The report also indicated that, there were inadequacies in conducting inventory, and condition surveys. In addition, traffic surveys were not captured and the analysis of feasibility studies for road prioritisation was not done.

Moreover, the Audit Team also noted that, RMMS was developed as part of Roads Asset Management System and is used by TANROADS in planning for maintenance of Roads. Generally, the Audit Team noted the following weaknesses regarding the use of RMMS by TANROADS.

***(a) The RMMS was not Fully centralised for Monitoring of all Maintenance Activities***

TANROADS Headquarters was expected to use RMMS for monitoring of maintenance activities at all stages of maintenance including; planning, procurement, contracts Management and Closure of maintenance project.

The Audit Team noted that, Road Maintenance Management System was not fully centralised (i.e. web based) at TANROADS Headquarters. Contrary to Section 5.3 of Performance Agreement between TANROADS and Roads Fund Board of 2020/21 which requires TANROADS to use RMMS or any suitable Road Management to determine the road asset value and annual work programme for achieving indicative performance targets in Schedule II of the agreements. It was noted that TANROADS did not effectively use RMMS for monitoring of all maintenance activities carried out by respective Regional Offices.

Moreover, review of the Strategic Plan of 2016/17-2020/21 indicated that, the feasibility study for upgrading RMMS into an integrated web-based Road

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Maintenance Management System was expected to be conducted by June 2019, however, the system was also not upgraded up to the financial year 2020/21. The reasons provided as articulated in **Appendix Eleven** of this report, was deficit of funds and postponement of procurement of consultant for conducting feasibility study of the system.

The Audit Team also noted that, planning for roads maintenance activities is partly done manually. For instance, this was done after conditional surveys were carried out and constrained budget analysed into RMMS from the respective TANROADS Regional Office were not fully accessed by the Officials responsible for RMMS at TANROADS Headquarters.

As a result, the Regional RMMS focal persons had to send their reports to TANROADS Headquarters manually and participate in the consolidation and discussion of data feed/entered into RMMS. This was a duplication of activities, if the system was centralised it was possible to work into the RMMS from TANROADS' Headquarter. Consequent, the RMMS focal persons from respective regional offices were either to travel to Head Quarter and submit the condition and inventory surveys data for merging. Failure to have a web based RMMS at TANROADS' Headquarters has led to wastage of time and high operational cost by the Agency.

During the verification of the RMMS conducted by the Audit Team to ascertain whether TANROADS used RMMS on determining the road value and annual work programme, the Audit Team observed that RMMS system was unable to printout the report contrary to the requirements in Section 5.3 of the Performance Agreements of 2016/17-2020/21.

Officials from TANROADS indicated that data from each region has to be merged first and then retrieved. Therefore, this confirmed that, the RMMS system was not centralised and not used for monitoring and determination of road value assets. This was evidenced during the verification of functionality of RMMS where it was found that the system could not retrieve combined compressive reports for the whole country.

Furthermore, through review of the Maintenance Operational Plans (2016/17-2020/21 and 4<sup>th</sup> Quarter Progress Report 2016/17-2020/2, the Audit Team noted that TZS 994.46 Million was planned to update the RMMS as presented in **Appendix Eleven** of this report.



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The Audit Team noted that TZS 240.50 million out of TZS 994.46 Million as the planned budget equivalent to 24% was spent for five financial years from 2016/17-2020/21 on RMMS activities. The funds were expected to be spent on upgrading of RMMS and other related activities.

However, the Audit Team noted that RMMS was neither upgraded nor centralised at TANROADS Headquarter. The executed activities include; Procurement of Consultant for Feasibility study to upgrade RMMS into a fully integrated Road Management System (RMS); fixing of bugs, training, and upgrading. However, even though TANROADS set aside budget and funds for updating and upgrading of RMMS each fiscal year as shown in **Appendix Eleven**, the feasibility study and upgrading of RMMS were not conducted due to deficit of funds and was rescheduled for the following financial year

***(b) RMMS was not Able to Produce a Summary of Road Maintenance Operational Plans***

The Audit Team noted that, TANROADS did not effectively use RMMS system for planning and preparation of maintenance operational plans and budgets. This was evidenced through the verification of RMMS conducted at TANROADS headquarters where it was found that, the inputs from RMMS were used manually for the preparation of Operational Maintenance Plans and details. This was because RMMS was unable to produce summary of Operational Plans which helped TANROADS Officials to extract inputs from RMMS and use them to develop the Operational Maintenance Plans manually.

Through interviews held with TANROADS' Officials revealed that, the RMMS was not used for the preparation of operational plans summary and details. Officials indicated that the reports were prepared by Regional Managers Office using RMMS and then submitted to TANROADS Headquarters where operational plan summary report are done manually.

Moreover, the conducted verification of functionality of RMMS by the Audit Team observed that, RMMS was able to retrieve reports such as the Status of Road network condition in the country as a general report as well as the manually prepared annual operational plans. This was acknowledged by the Officials from TANROADS responsible for RMMS.

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***(c) The Executed Maintenance Works did not Reflect Actual Maintenance Needs***

Regulation 17 (4) of Road and Fuel Tolls Regulations of 2016 stipulates that, in preparation of an Operational Plan and budget, TANROADS must consider: (a) the road inventory; (b) the condition of the roads and traffic within its jurisdiction and (c) and other economic and social factors.

TANROADS was expected to use RMMS for the determination of road value and planning for the actual maintenance needs of both Trunk and Regional roads in the country. The value of road asset was also required to consider the traffic loading effect which was also expected to be taken into account during budgeting for the maintenance of roads.

However, the Audit Team noted that, the unconstrained maintenance needs analysed into RMMS was not used as actual maintenance needs. The reasons provided by TANROADS' Official was due to financial constraints.

TANROADS' Officials pointed out that, Roads Fund Board released maintenance funds as ceiling for which each Regional Office had to use as a budget for maintenance. Therefore, the maintenance activities were carried out depending on the released budget ceilings for a particular financial year.

***Roads Maintenance Backlog***

Through the review of Annual Operation Plans and Annual Progress Reports of financial years 2016/17-2020/21, the Audit Team noted that, there was a road maintenance backlog. This was also reported in the interviews held with TANROADS Officials where they pointed out that, data from RMMS was not considered as actual maintenance needs due to limited maintenance budget ceiling. Officials added that TANROADS received ceiling budget for the maintenance of roads which did not cater for the actual needs for the maintenance of roads. As a result, there was a huge back log of maintenance work which required to be attended for the last five years. **Table 3.6** shows the maintenance backlogs for the last five financial years.

**Table 3.6: Planned against Actual Executed Maintenance in (Km)**

Financial Year	Planned Maintenance (Km)	Actual Executed ( Km)	Un-executed (km)	Unexecuted Works (%)
2016/17	38,183	37,927	256	1
2017/18	31,167	29,085	2,082	7
2018/19	34,153	29,978	4,175	12
2019/20	39,979	34,706	5,272	13
2020/21	39,085	32979	6,106.	16

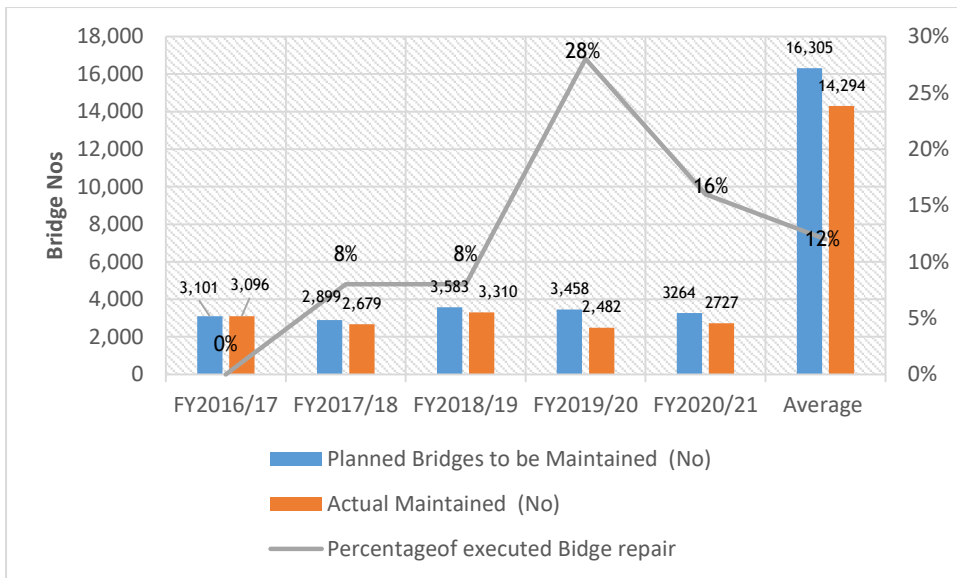
*Source: Annual Maintenance Operation Plan and 4<sup>th</sup> Quarter Progress Report of 2016/17-2020/21*

From **Table 3.6**, it can be seen that, there was an increase of maintenance backlog from 1% to 16% for the last five fiscal years (2016/17-2020/21). The audit noted through the review of Annual Maintenance Operation Plans and 4th Quarter Progress Reports of 2016/17-2020/21 that there were 10% of maintenance backlog in the country in terms of maintained length of the road network specifically for recurrent and routine maintenance, spot improvement, periodic as well as bridge major repairs. This implies that 90% of the planned maintenance activities for the last five years was executed.

#### ***Planned Against Actual Maintenance Needs for Bridges***

The Audit Team noted that, the bridge major repair works for the past five years (2016/17 to 2020/21) were executed by average of 12% of the planned major repair works, which also were not fully attended. The reasons for the failure to implement the maintenance plan effectively as provided by TANROADS' Officials was deficit in maintenance funds. As a result of budget deficits, 88% of the planned bridge maintenance works could not be conducted in the past five years. **Figure 3.13** show the bridge major repair backlog.

**Figure 3.13: Planned against Actual Bridge Maintenance Needs**

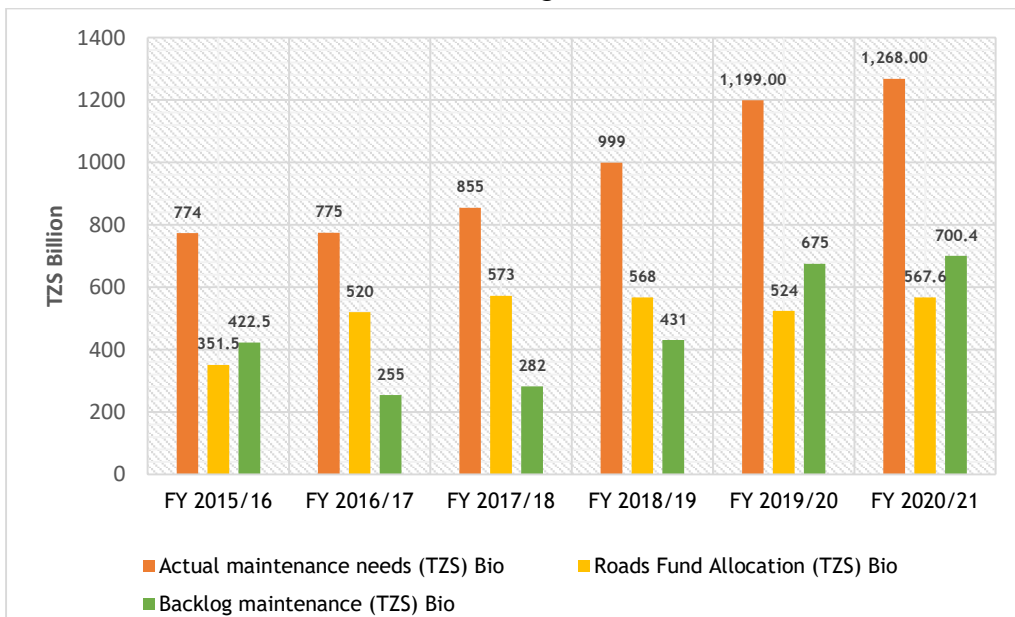


*Source: Annual Maintenance Operation Plan and 4<sup>th</sup> Quarter Progress Report of 2016/17-2020/21*

From **Figure 3.13**, it can be seen that actual capacity of TANROADS to maintain bridges for the past five years stood at an average of 12%. This implies that, for the past five years there was a maintenance backlog of 88%, and that, bridge repair works had not been fully attended. Maintenance funds was the main reason cited for having a huge maintenance backlog.

Moreover, the Audit Team conducted further analysis of the maintenance need in terms of funds and noted that, there was 40.80% to 50 % of the maintenance backlog in terms of funds. **Figure 3.14** provide analysis of maintenance needs, approved and backlogs in terms of funds.

**Figure 3.14: Maintenance Needs, Approved Budgets and Maintenance Backlog**



*Source: Assessment of Road Maintenance Financing Deficits and Proposals to Widen Roads Fund Revenues Base of February 2021 (Submitted MoFP)*

From **Figure 3.14**, it can be seen that, the maintenance backlog ranged from TZS 282.0 Billion in fiscal year 2017/18 to TZS 700.4 Billion in the fiscal year 2020/21. This is equivalent to a financial capacity of 67% in financial year 2017/18 and 44.8% in the financial year 2020/21.

### 3.3.3 Absence of Approved Road Maintenance and Supervision Manuals and Guidelines

According to subsection 4 (c) of Road Act, 2007, MoWT is required to prepare guidelines, standards and specifications for the road works and monitoring the performance of the road network.

Contrary to this requirement, through the review of TANROADS Strategic Plan 2016/17-2020/21, the Audit Team noted that TANROADS did not have manuals for project supervision.

Moreover, through reviews of Road Maintenance Handbook of 2007, it was noted that 2008, & 2017, Standard Specifications for Maintenance Works of 2010, TANROADS Maintenance Supervision Manual 2008 and Weighbridge

Operational Manual of December 2018 were not approved. **Table 3.7** shows summary of unapproved Guidelines, specifications and manuals which were used by TANROADS for road maintenance.

**Table 3.7: Guidelines, Specifications and Manuals Approval Status**

Name of Document	Date of Publication	Approval Status
RMMS Data Collection Manual	December, 2017	Approved
Road Maintenance Handbook Part I, II	November, 2008	Not Approved
Weigh Bridge Operational Manual	December , 2018	Not Approved
Hand Book for Bridge Inventory	Second Edition, 2007	Approved
Labour Based Technical Manual Vol I&II	May, 1997	Not Approved
Standard Specification for Maintenance Works	July,2010	Not Approved
TANROADS Maintenance Supervision Manual	August, 2008	Not Approved

*Source: Auditors' Analysis of TANROADS Manuals and Specifications, 2021*

From **Table 3.7**, it is shown that, only 2 out of 7 availed manuals and specifications were approved at the time of this audit. However, the reasons were not submitted for the failure to approve the remaining manuals. Due to lack of approvals, the level of enforcement for such manuals could not be established.

As a result, these manuals and specifications were not effectively used by respective TANROADS' Regional Offices as official documents. In addition, the interviews, held with Officials from TANROADS Regional Offices revealed that, the dissemination and training on the use of manuals and guidelines were not adequately done. This led to weak enforcement and use of those guidelines and manuals since apart from being unapproved staff were not introduced to them through training. Lack of approvals and low knowledge among the staff contributed to the weak enforcement of these manuals and specifications.

### 3.3.4 Ineffective Plan for Resources to Facilitate Road Maintenance Activities

*Does TANROADS effectively plan for resources (skilled personnel, funds and tools) to facilitate road maintenance works in the country?*

According to Regulation 26(3) of Roads and Fuel Tolls Regulation of 2016 Cap 2020 GN No. 10 requires TANROADS to employ such number of engineers as the needs may be for the purposes of management of roads to ensure effective utilisation of the funds in accordance with the performance agreement(s). However, through review of document and analysis, the Audit Team noted the following weaknesses:

#### ***Inequitable Allocation of TANROADS' Resources in Respect to Road Networks***

TANROADS was expected to allocate staff depending on the road networks and needs. However, through the review of Annual Operation Plans and Annual Reports from 2016/17 to 2020/21, the Audit Team noted unequal distribution of resources to the respective Regional Offices in respect to road networks as indicated in **Table 3.8 below:**

**Table 3.8: Allocation of Staff in Relation to the Road Networks**

Region	Paved Road	Unpaved Road	Total	Total Available staff as of 2020/21	Staff per Km
	(km)	(km)			
Songwe	251.92	730.72	982.64	No info	Nil
Kigoma	301.88	1145.55	1447.43	9	1:161
DSM	393.32	205.92	599.24	12	1:50
Geita	399.32	528.01	927.33	13	1:71
Singida	488.73	1227.39	1716.12	13	1:132
Iringa	425.66	791.43	1217.09	14	1:87
Simiyu	223.58	701.96	925.54	14	1:66
Mtwara	421.41	894.59	1316.00	15	1:88
Tabora	753.17	1424.13	2177.30	15	1:145
Katavi	191.83	1003.47	1195.30	17	1:70
Kilimanjaro	511.82	543.69	1055.51	17	1:62
Lindi	396.88	892.61	1289.49	17	1:76
Ruvuma	733.94	1432.68	2166.62	17	1:127

Region	Paved Road	Unpaved Road	Total	Total Available staff as of 2020/21	Staff per Km
	(km)	(km)			
Njombe	251.21	937.02	1188.23	18	1:67
Tanga	512.97	1296.33	1809.30	15	1:121
Mwanza	287.6	857.9	1145.50	17	1:67
Kagera	774.57	1201.72	1976.29	12	1:68
Rukwa	374.88	875.96	1250.84	15	1:69
Dodoma	589.37	1117.85	1707.22	14	1:70
Manyara	257.24	1399.75	1656.99	14	1:71
Arusha	418.7	1056.67	1475.37	15	1:72
Morogoro	632.37	1438.86	2071.23	17	1:73
Shinyanga	256.66	746.29	1002.95	15	1:74
Mbeya	433.34	822.13	1255.47	13	1:75
Mara	297.34	1129.58	1426.92	13	1:76
Coast	542.70	836.71	1379.41	21	1:77

*Source: Annual Operation Plans and Progress Reports of FY 2016/17-2020/21*

From **Table 3.8** above, it can be seen that, allocation of staff in relation to the road networks was inequitable. For instance, Tabora and Ruvuma Region had big networks of km 2177.30 and km 2166.62 respectively. However, number of staff allocated to these Regions were with 15 and 17 respectively. In the same situation Regions with less road network were allocated with higher number of staff.

For example, Tanga region had a total road network of 1809.30km and was allocated with 15 staff, Coast region had 1379.41km allocated with 21 staff, Mwanza had road network of 1145.5 km and was allocated with 17 staff and Arusha region had a road network of 1075.37 km and was allocated with 15 staff. This situation was contrary to Tabora, Ruvuma and Morogoro Regions which were found to have long road network, but relatively smaller number of staff compared to other regions. This situation was attributed to lack of effective plan for resources utilisation. Unequal distribution of human resources has resulted to huge workload in some regions as described in **section 3.6.1** below.

For instance, in Tabora One Engineer was required to supervise and Inspect 17 ongoing road projects. The interviewed TANROADS' Officials

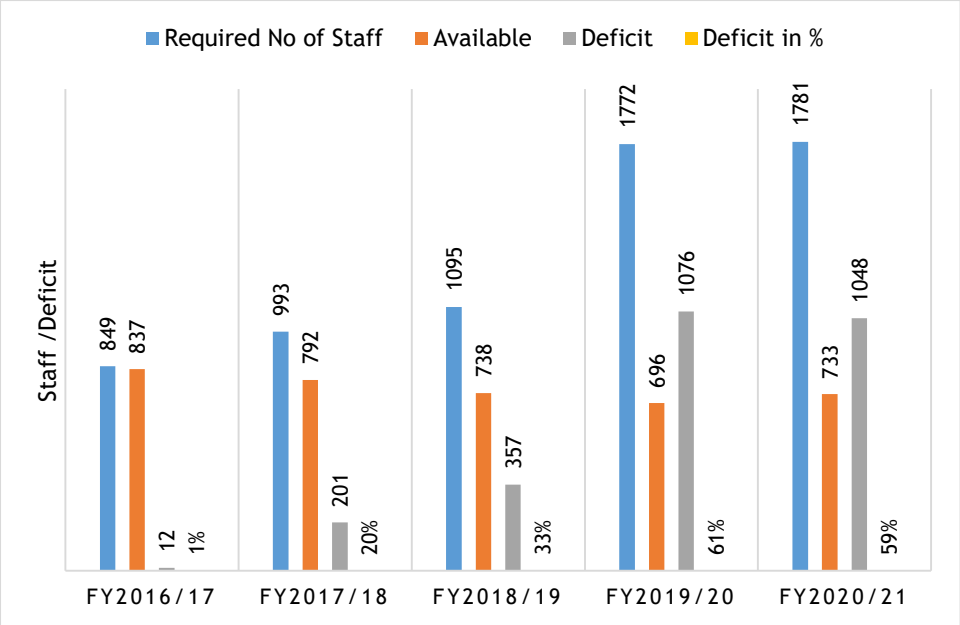


acknowledged that, the allocation of staff did not consider road networks rather the need identified in respective regions.

***TANROADS had Deficit of human Resources by 59 Percent***

Despite of effective utilisation of resources, the Audit Team noted that TANROADS had deficit of various resources like human, funds and equipment in the country. With regard to human resources the deficit was noted to range from two to Nine Staff as detailed in **Section 3.6.1** of this report. This was due to the fact that, TANROADS HQ and Regional offices lacked effective plan for acquisition and deployment of staff responsible for maintenance of roads. As a result, there was deficit for TANROADS’ Regional Offices Ranging from two to nine Staff as detailed in **Section 3.6.1** of this report **Figure 3.15** indicates the extent of deficit of staff in TANROADS.

**Figure 3.15: Deficit of TANROADS’ Human Resources**



*Source: TANROADS PE's 2016/17-2020/21*

From **Figure 3.15** above, it can be seen that in 2020/21 TANROADS had a deficit of 59 percent, this implies that, TANROADS’ available staff is 41% of the requirements. This led to inadequate supervision and inspections of the ongoing road maintenance projects.

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### **3.3.5 Insufficient Multi Year and Lack Pro-active Plans for Roads Maintenance Activities**

Subsection 6(1) (b) of the Road Act, 2007, requires implementing Agencies to prepare and implement short and long-term road maintenance programme. Likewise, sub-regulation No 17(1) of Road and Fuel Tolls Regulations of 2016, requires TANROADS to prepare operational plans including; annual operational plan, a three-year medium term operational plan at least three months before commencement of the financial year and five-year strategic operational plan at least three months before the commencement of the financial year.

It was expected that TANROADS prepared multiyear plan(s) for the maintenance of Roads as required by sub-regulation No 17(1) of Road and Fuel Tolls Regulations 2016. The Audit Team noted that, TANROADS had overall strategic plan of five years. TANROADS also planned their maintenance activities annually through maintenance operation plan. However, as the officials from the Roads Fund Board and TANROADS revealed during interviews TANROADS did not have the three-Year Medium-Term Plans.

This implies that, TANROADS lacked projections of maintenance works such as; rehabilitation, upgrading and major repair of bridges to be carried out for upcoming years contrary to sub-regulation No 17(1) of Road and Fuel Tolls Regulations 2016. This implies that, maintenance activities were executed based on the annual and long-term plans only. Lack of medium-term plans is detrimental because, as the chance for maintaining them yearly exists, TANROADS will not strive to ensure durability of the maintained roads. This partly contribute to the poor condition and early deterioration of the roads. Lack of medium-term projections also contribute to delays in road maintenance works as the activities will always wait for the annual budget approvals and allocations, which, based on the existing experiences are not timely issued.

Lack of multi-year and proactive plans to a large extent contributed to delay in maintenance of roads. The delays in maintenance of roads have contributed to huge financial impacts in the government budget.

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### 3.3.6 Lack of Coordination Mechanism to Involve Stakeholders in the Planning for Maintenance of Roads in the Country

*Is there a coordination mechanism in place to ensure that stakeholders are adequately involved in the planning for efficient and effective maintenance of roads?*

Section 5.7 of the Performance Agreement entered between TANROADS and Roads Fund Board of 2020/21 requires TANROADS to prepare Annual Reports for stakeholders and road users indicating financial issues, planned and executed activities by each Region and for each road including financial issues. It also requires such reports to be published in widely circulating newspapers and copied to the RFB. However, the audit did not find any evidence on annual publication of such reports.

Similarly, Section 2.5 of TANROADS' Strategic Plan 2016-2021, Table No 1 indicated that, TANROADS is committed to provide information i.e. Projects, performance reports, projects resources, and activities executed in a transparent, accountable, and timely manner, adhering to performance targets. It also identified stakeholders such as; MDAs, Development Partners (Bilateral and Multi-Lateral Institutions), Parliament, service Providers (Contractors, Consultants and Suppliers), Regulatory Institutions, Professional Boards, Mass Media, Financial Institutions, Higher Learning Institutions and Road users, with whom the reports are shared.

However, the audit noted that TANROADS lacked coordination mechanism for involvement of the stakeholders in planning and supporting of efficient and effective maintenance of roads. The effective participatory system would allow for the involvement of all stakeholders in planning of the roads maintenance activities through giving them a chance to provide information and views.

Moreover, TANROADS' Business Plan 2020/21 requires TANROADS to conduct surveys on opinions and views of stakeholders on the performance of TANROADS and come up with analysis and measures for improvement. This directive was issued to enable capturing of various information from stakeholders including information about malpractices such as corruption and frauds to come up with measures to prevent or minimise them in management and execution of roads maintenance activities. Despite

existence of this requirement, the Audit Team noted that TANROADS did not achieve/implement its targets and activities as indicated in Business plan as Table 3.9 below illustrates.

**Table 3.9: Extent of Implementation of Set Targets for Coordination of Stakeholders**

Perception of stakeholders on corruption at TANROADS. This indicator intends to collect opinions and views of stakeholders on malpractices at TANROADS								Status of implementation
Indicator Target Value for each year in Percentages					Data Collection Method	Frequency of data Collection	Frequency of Reporting	
Year 1	Year 2	Year 3	Year 4	Year 5	Questionnaires/Surveys	Annually	Annually	
0	30	45	65	80	-	-	-	No document Provided

*Source: TANROADS' Strategic Plan, 2016-2021*

From Table 3.9 above, it can be seen that by 2021 (year 5) TANROADS was supposed to reach 80 percent on perception of stakeholders on malpractice at TANROADS. However, there were no annual reports provided on implementation status on the Key Performance Indicators.

As a result, there is inadequate information sharing with stakeholders which would support the maintenance of roads in the country. This led to stakeholder to be unaware regarding maintenance of roads.

### 3.3.7 Inadequate Assessment of Road Design prior to Execution of Maintenance Activities

*Does TANROADS assess the Adequacy of Road Design before Execution of Maintenance Activities?*

Regulation 4(1-2) of Roads and Fuel Tolls Regulations, 2016 requires TANROADS to design road maintenance works in accordance with the road maintenance manual, specifications and guidelines as prescribed by the Minister responsible for roads. TANROADS was also required to carry out major maintenance works in accordance with the appropriate design and drawings.

Likewise, Section 5.1 of Draft Road Maintenance Handbook Part II, 2008 requires the engineer to study the damage scale and/ or condition ranking based on inspection results.

Through review of Maintenance Project Correspondences of 2016/17-2020/21, the Audit Team noted that, TANROADS did not conduct thorough investigation of defects and prepare specifications of required material for maintenance of roads as required by the sub-regulation 4(1-2) of Roads and Fuel, Tolls 2016.

It was also expected that TANROADS would prepare different designs and drawings for major maintenance activities since the existing roads were not constructed in the same geographical conditions, materials and designs. However, reviews of Maintenance Contracts showed that, there was not thoroughly investigation of roads which required detailed study of defects prior to coming up with the design which could have helped the contractor to execute the major maintenance works in accordance with sub-regulation 4(2) of the Road and Fuel Tolls Regulations, 2016.

Moreover, the Audit Team noted that, TANROADS had no effective mechanism to ensure that, there is adequate assessment of road designs and drawings prior to execution of the maintenance activities. This was witnessed through reviews of maintenance drawings whereby it was found that drawings and designs were the same or typical for the visited Regions. An excerpt of drawings from 1 visited region are as shown in **Table 3.10**:

**Table 3.10: Types of Drawings as Part of Contract Drawings**

Name of the Regional Office	Name of the Project	Type of Drawings
Morogoro	Morogoro-Dodoma	Typical Drawings
	Bigwa -Kisaki	Typical Drawings
	Msamvu-Bigwa	Typical Drawings
Mbeya	Tazam Highway	Typical Drawings
	Mbalizi-Shingamba	Typical Drawings
	Katumba-Mbambo Ntukuyu Road	Typical Drawings
Lindi	Marendegu-Nangurukuru	Typical Drawings
	Nangurukuru-Zinga	Typical Drawings

Name of the Regional Office	Name of the Project	Type of Drawings
	K/masoko- Nangurukuru-Njinjo	Typical Drawings
Mara	Nyankanga- Rung’abure	Typical Drawings
	Musoma-Makojo	Typical Drawings
	Musoma-Simiyu	Typical Drawings
Manyara	Gehandul-Babati	Typical Drawings
	Bereko-Babati- Minjingu	Typical Drawings
	Kilimapunda -Kidarafa	Typical Drawings

***Source: Projects Contract Documents of 2016/17-2020/21***

From **Table 3.10**, it can be seen that, all three projects, equivalent to 100% of the selected and visited projects had the same typical drawings as a working drawing. This implies that, TANROADS did not conduct thorough investigations of the defects to ensure effective maintenance interventions prior to execution of the maintenance works. This anomaly happened due to lack of major maintenance designs review.

This was contrary to Annual Performance Agreement section 5.4 which requires TANROADS to work to the agreed quality standards and which also requires particular attention to be given to Design Standards.

### **3.3.8 Ineffective Functioning Mechanism for Procurement of Roads Maintenance Works**

*Are there effective mechanisms to ensure that procurement of road maintenance works is done in accordance with the Public Procurement Act and its Regulations?*

Sub-section 74(1) of the Public Procurement Act, 2011; requires the Evaluation Committee to evaluate on a common basis tender that have not been rejected in order to determine the cost to the Procuring Entity of each tender in a manner that permits a comparison to be made between the tenders on the basis of the evaluated costs. In this case, the lowest submitted prices, may not necessarily be the basis for the selection and awarding of a contract.

Sub clause 36(1) requires the Accounting Officer to have overall responsibility for the execution of the procurement process in procuring

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entity. The audit noted that TANROADS did not have effective functioning mechanism for procurement of maintenance works as indicated by the following weaknesses:

**(a) Ineffective Use of TANEPS Procurement System**

*Is the procurement of road maintenance activities being effectively conducted?*

Despite Government efforts to ensure that procurement is done through Tanzania National e-Procurement System (TANEPS), the Audit Team noted weaknesses on use of the system by TANROADS as Procuring Entity and Tenderers/ Contractors. Among the weaknesses found include:

***Weaknesses in the Time Taken for Evaluation of Tender Documents through TANEPS***

Through interviews held with TANROADS Officials the audit revealed that, time for evaluation and approval of tender documents was not adequate. This was because the evaluation process was not in line with PPA 2013 and its amendments on procurement proceeding such as, evaluation process and preparation of evaluation report as these are still done manually. For instance, in the verification of functionality of TANEPS, it was observed that, the signatures for Evaluation Team and Tender Boards were missing in the system.

The main reason for this anomaly as provided by the TANROADS officials during interviews was that it was difficult to sign through system. This led to double works of preparation of evaluation report manually in addition to the online preparations. Similarly, the arrangement and completeness of the documents were not well defined in the system. This led to double activities, where the Evaluation Team is required to prepare manually evaluation report and then upload into the system.

***Inadequate Knowledge on the Use of TANEPS by TANROADS and Tenderers***

The Audit Team noted that, users of TANEPS i.e. Procuring Entity and Tenderers lacked knowledge on how to upload the documents. This was acknowledged from the interviews held with Officials from TANROADS. For

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instance, it was mentioned that there is scenario whereby contractor would be disqualified due to uploading of incorrect documents due to misunderstanding on the application of TAnEPS. The audit noted that ignorance of the TAnEPS system exists due to lack of training on how to use it.

**(b) Award of Road Maintenance Contracts to Contractors with Low Capacity**

*Does TANROADS ensure that the Selected Contractors have the Capacity to Execute Road maintenance Works?*

Sub-section 76(1) of Procurement Act, 2011 requires evaluated tenderer (Contractor/ Consultant) to have the capacity and capability to undertake the works. Similarly, subsection 74(4) requires the evaluation committee to prepare for submission to the Procurement Management Unit a detailed report on the evaluation and comparison of tenders and setting out the specified reasons on which its recommendations for the award of each contract are based.

Review of Annual Progress reports (4<sup>th</sup> Quarter) of 2016/17-2020/21 indicated that, the contractors had inadequate capacity in execution of roads maintenance projects. The reports indicated various reasons of inadequate capacity of contractors which included lack of necessary tools, equipment and plants, lack of necessary skills, and lack of experience in similar projects and operating capital.

Moreover, reviews of the project files from visited regions revealed that, 1 out of 21 visited projects was abandoned. This was due to delay in issuance of GN, contractors' deficit of fund, delay in payments, delays in granting tax exemptions and lack of proper equipment to execute the works. The abandoned roads maintenance projects due to inadequate capacity to executed maintenance activities are as detailed in **Table 3.11:**



**Table 3.11: Abandoned Projects from the Visited Regions**

Region	No. of visited Projects	Abandonment Project
Morogoro	3	1
Mbeya	3	0
Mara	3	0
Lindi	3	0
Katavi	3	0
Manyara	3	0
Singida	3	0

*Source: Project Documents and Correspondences, 2021*

The information about abandonment of maintenance projects was noted through reviews of correspondences roads maintenance projects in visited Regions. Among other reasons provided from interviews held with TANROADS Officials from visited TANROADS' Regional Offices, project abandonment happened due to delays in issuance of Government Notices on VAT Exemptions while the contracts were already entered. This led contractors to abandon the projects after waiting for the GN for long time, sometimes until the following financial year. The good example was seen in financial year 2019/20 and 2020/21 where 110 out of 1,288 maintenance projects were not issued with GN up to June 2020. This kept contractors waiting for almost 9 months for GN to be issued.

For instance, a review of annual Progress Report of fiscal year 2018/19 indicated that, a total of 116 out of 1,363 road maintenance contracts were not issued with GN (VAT Exemption). This was also the main reasons for contractors to abandon the maintenance projects.

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## CHAPTER FOUR

### FINDINGS ON FUNDING AND MONITORING OF ROADS MAINTENANCE

#### 4.1 Introduction

This chapter discusses the extent of roads maintenance financing and monitoring and evaluation of roads maintenance activities. The Audit Team carried out reviews of documents, site visits and conducted interviews. The findings from audit study indicated presence of the following weaknesses in relation to these aspects of roads maintenance management:

#### 4.2 Ineffective Funding for Roads Maintenance Activities

##### 4.2.1. Mismatch between the required maintenance (unconstrained) Budget and available (constrained) maintenance budget

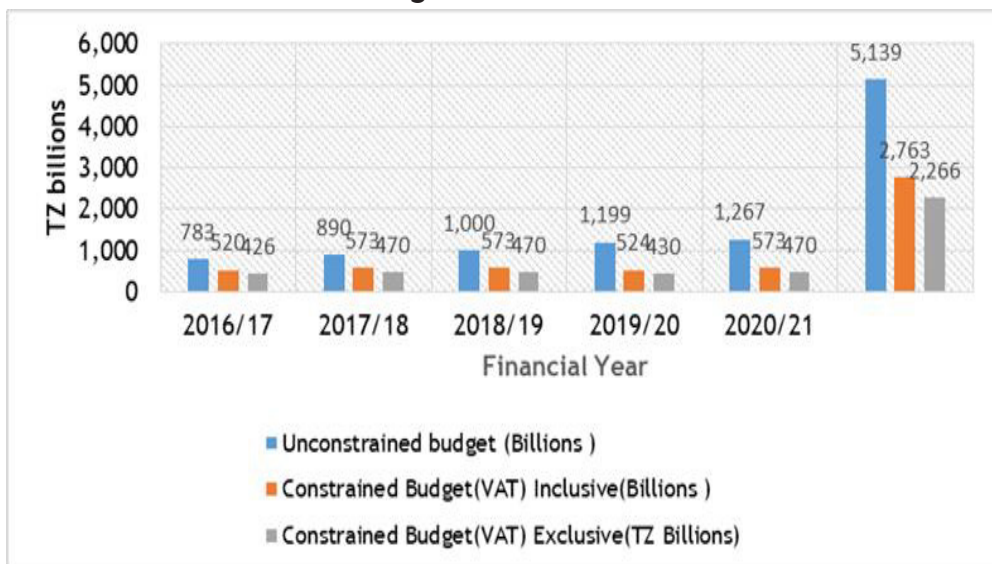
*Does the available funds match with the required budget for road maintenance in the country?*

Sub-regulation 27(1) states that in disbursement of funds, the Board must disburse funds to the Implementing Agencies according to the performance agreements and approved operational plans. In this case, the regulations require the Board to disburse funds that match with the approved annual operational plans and budgets.

Analysis of TANROADS action plans revealed that the constrained budget for road maintenance at TANROADS didn't match with the actual required maintenance budget (Unconstrained).

The comparison of unconstrained with constrained budgets shows that from 2016/17-2020/21 the planned constrained budgets were lower than the unconstrained budgets. **Figure 4.1** provides the comparison of constrained and unconstrained budgets.

**Figure 4.1: Comparison of the Unconstrained Budget and Constrained Budget at TANROADS**

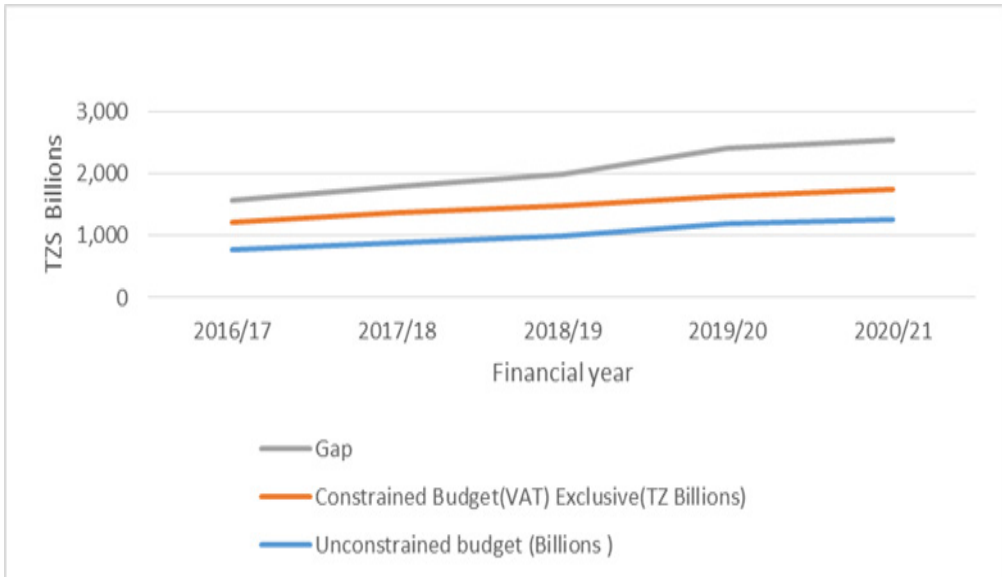


Source: Auditors' Analysis from TANROADS Annual Operation 2016/17-2020/21

From **Figure 4.1**, it can be noted that on average TANROADS required TZS 1. 027 trillion for the maintenance of roads in the country, however the Agency was only budgeted for an average of TZS 553 billion (VAT inclusive) and an average of TZS 453.2 billion (VAT exclusive) which translated to 54% and 44% of the unconstrained budgets respectively.

Similarly, the Audit Team noted that through the analysis of constrained and unconstrained budgets for Road Maintenance activities at TANROADS in the last five financial years, the constrained budgets had remained constant over the last five years as depicted in **Figure 4.2** below while the unconstrained budget have been increasing from 2016/17-2020/21. The constrained budget remained constant as a result of budget ceiling provided by Road Funds Board.

**Figure 4.2: Trend of Unconstrained and Constrained Budgets at TANROADS**



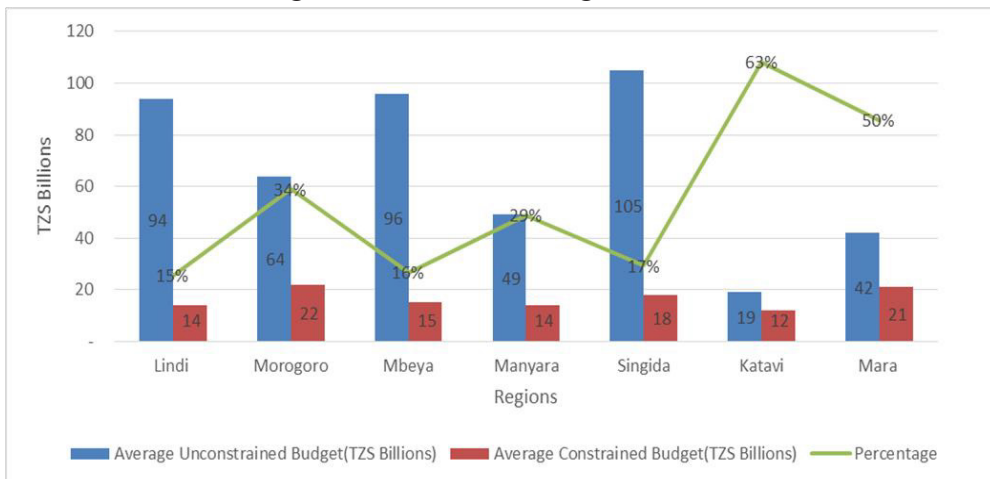
*Source: Auditors' Analysis from TANROADS Annual Business Plans 2016/17-2020/21*

From **Figure 4.2** above, it can be noted that, the gap of the unconstrained budget and constrained budget (VAT exclusive) had widened over the last five years. The audit analysis of the budget information indicates that the gap widened from TZS 357 Billion in 2016/17 to TZS 797 Billion in 2020/21.

#### **4.2.2 Significant Gap between Unconstrained and Constrained Budgets in Regional Offices**

The audit compared the Unconstrained and Constrained Budgets in the visited TANROADS' Regional Offices and noted that there was a significant gap between the constrained and unconstrained budget. **Figure 4.3** stipulates the average percentage variation between the constrained and unconstrained budgets in the visited TANROADS' Regional Offices from 2016/17-2020/21.

**Figure 4.3: Percentage Variation of the Unconstrained and Constrained Budget at TANROADS’ Regional Offices**



**Source:** Auditors’ Analysis from TANROADS Annual Progress Reports 2016/17-2020/21

It can be seen from **Figure 4.3** above, on average regions received between 15% and 63% of the unconstrained budgets. The results shows that Lindi had 15%, Morogoro had 34%, and Mbeya had 16% Manyara had 29%, and Singida had 17%, Katavi had 63% and Mara had 50% of the unconstrained budget. According to TANROADS’ Officials the main criteria for such allocations were the set budget ceilings and backlog of previous deferred maintenance.

According to TANROADS’ Officials, the budget deficiency resulted into loss of the road asset value; deterioration of roads network, resulting to impact on costs of production, and increased costs for major rehabilitation and reconstruction of road sections that had deteriorated due to bad conditions.

#### **4.2.3 Lack of Effective Strategies and Plans to Adequately Fund Roads Maintenance Activities**

*Does the Roads Fund Board have effective Strategies and Plans to ensure availability of suitable and sufficient funds for financing roads maintenance activities?*

According to Roads Fund Board Strategic Plan of 2016/17-2020/21 “*Objective C*” on funding adequacy for road maintenance, the Road Fund Board has set two strategies to improve funding adequacy for road

maintenance; to increase revenues collection; and to reduce the cost of maintenance. The Roads Fund Board set four targets in order to measure the attainment of the two strategies.

Despite the efforts made by Roads Fund Board to broaden the revenues base including preparation and submission of proposals to the Government, no substantial achievements have been realised. Worse enough, the proposals that were submitted to the government had not been approved by the time this audit was conducted. Only 1 out of 3 proposals to increase the rate of fuel levy was approved. The fuel levy was increased by TZS 100 per litre of petrol and diesel instead of the proposed increment of TZS 172.7 per litre of petrol and diesel. The increased TZS100 per litre of fuel was allocated to finance development of District Road network. This implies that, the increment has not contributed significantly to the increased road maintenance financing capacity of the Fund as expected.

Moreover, the audit reviewed the implementation status of the earmarked targets from the Roads Fund Board to measure the attainment of the set targets aimed at improving the adequacy of maintenance funds. **Table 4.1** below shows that none of the targets were attained by the due date.

**Table 4.1: Road Funds Targets for Improving Adequacy of Maintenance Funds**

Road Fund Board Strategies	Target in the RFB strategic Plan	Status
Increase Revenue Collection Reduce Roads Maintenance costs	Two sources of revenue secured by June, 2019	No attained
	Mechanism for collecting funds from motor vehicle inspection established and implemented by June, 2019	Not attained
	Collection of revenue from Road Reserve enforced by June, 2018	Not attained
	Innovation and application of new technology on road maintenance facilitated by June 2021.	Not attained

*Source: Auditors' Analysis of RFB Strategic Plan and Annual Implementation Reports, 2021*

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From **Table 4.1** above, it can be noted that the Roads Fund Board did not manage to secure two sources of revenue by June 2019, did not manage to establish mechanism for collection of funds from motor vehicle inspections, was unable to enforce collection of revenue from road reserve and failed to achieve innovations of new technology in road maintenance by June 2021. Failure to attain these targets indicated that the Road Fund Board strategies were ineffective.

Similarly, the audit noted that the Road Funds Board conducted a study on Assessment of Road Maintenance Financing deficit and proposed to widen roads fund Revenue Base in February 2021. The study proposed three measures which were the adjustment of rate of fuel Levy from TZS 263 to 435.7 per litre of diesel and petrol, formalization of car parking fees as appropriated, formalization of annual mandatory vehicle inspection fees as appropriated.

The audit noted that out of the proposed measures, none had been implemented at the time of audit. From such findings it can be noted that the Road Funds Board proposals to increase maintenance funds were yet to be implemented and as a result there was no increase in Roads Maintenance Funds sources in 2021/22. According to RFB, the proposed sources of funds were not achieved due to conflicting laws on revenue collection.

### ***Significant Increase in Cost due to Deferred Maintenance***

Objective C of Road Fund Board Strategic Plan of 2016/17-2020/21 aims to improve the adequacy of the road maintenance funds through reducing costs of road maintenance.

Through the review of the Road Fund report on Assessment of Road Maintenance Financing deficit and proposal to widen roads fund revenues base, the audit team noted that delays in road maintenance results into increase of costs. For example, through the review of Road Funds Boards Reports, 2021 it was found that, the delay in periodic maintenance is estimated to increase costs by 6.4 times for asphalt concrete and 17 times for surface dressing.

According to interviews with TANROADS officials there were increase in maintenance cost of roads across the country due to delays in financing of

periodic maintenance. This resulted in government to incur more cost to rehabilitate these sections as indicated on Table 4.2 below: -

**Table 4.2: Percentage Increase of Maintenance Cost due to Deferred Maintenance**

Region	Road Section	Length (km)	Planned Maintenance Cost (TZS) Billion	Rehabilitation / Reconstruction cost TZS Billion	% of Estimated Cost Increase
Coast	Ndundu - Somanga	56.40	6.00	45.44	657
	Kibiti - Ikwiriri - Nyamwage	49.80	5.28	40.12	660
	Mlandizi - Chalinze	44.20	4.50	35.61	691
	Chalinze - Manga	92.90	5.02	74.84	1391
Tabora	Nzega - Shelui	110.00	8.00	77.52	869
Morogoro	Morogoro - Gairo	133.30	3.00	103.33	3344
Dodoma	Gairo - Dodoma	126.70	9.00	87.02	867
	Fufu - Dodoma	70.90	3.80	48.69	1181
	Migori - Fufu	93.50	4.50	64.22	1327
Kagera	Lusahunga - Nyakahura	32.00	5.00	25.05	401
	Rusumo - Lusahunga	90.00	12.00	70.45	487
Singida	Misigiri - Shelui	33.30	3.40	25.56	652
	Singida - Misigiri	74.80	7.40	57.42	676
Iringa	Iringa - Migori	95.00	10.00	70.76	608

*Source: Auditors' Analysis from Road Funds Boards Reports, 2021*



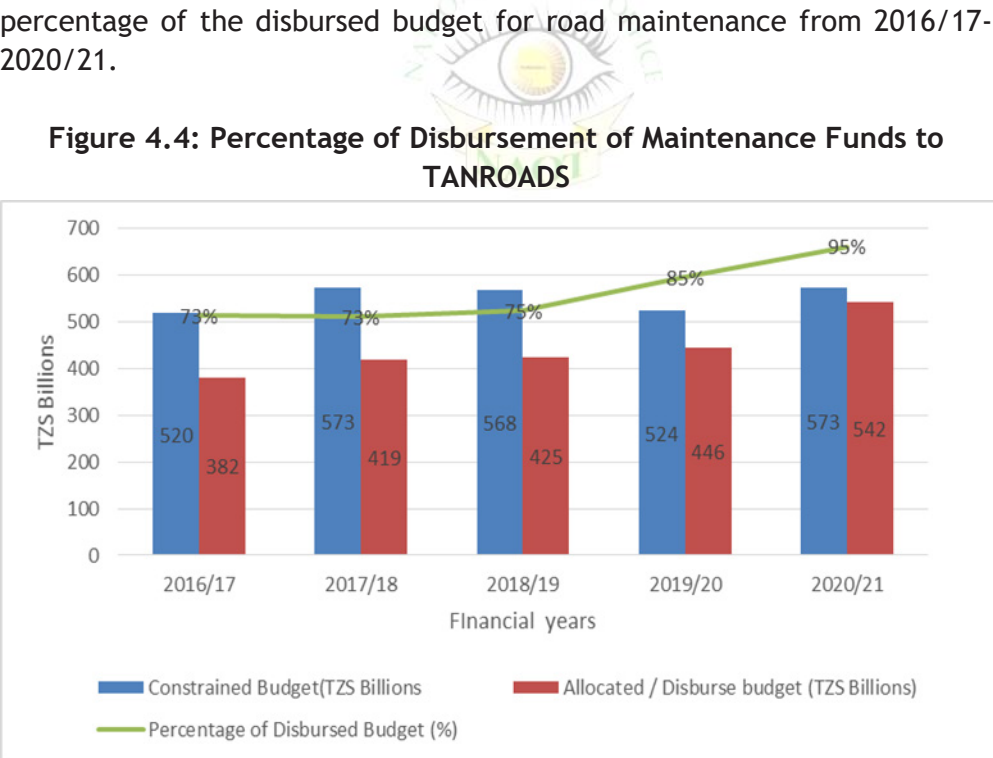
From **Table 4.2** above, it can be noted that on the percentage increase in the maintenance cost due to delays ranged between 401% for Lusahunga-Nyakahura road and 3344% for Morogoro to Gairo road section.

#### 4.2.4 Inadequate Disbursement of Funds to TANROADS

*Does RFB have an effective mechanism to ensure funds for road maintenance are disbursed according to the Road and Fuels Tolls Regulations?*

Sub-regulation 27(1) of Road and Fuels Tolls Regulations states that in disbursement of Funds, the Board shall disburse funds to the Implementing Agencies according to the performance agreements and approved operational plans.

The audit comparisons of the required budget for road maintenance against the allocated budget revealed that TANROADS didn't receive 100% of the required funds for maintenance of roads. **Figure 4.4 below** shows the percentage of the disbursed budget for road maintenance from 2016/17-2020/21.

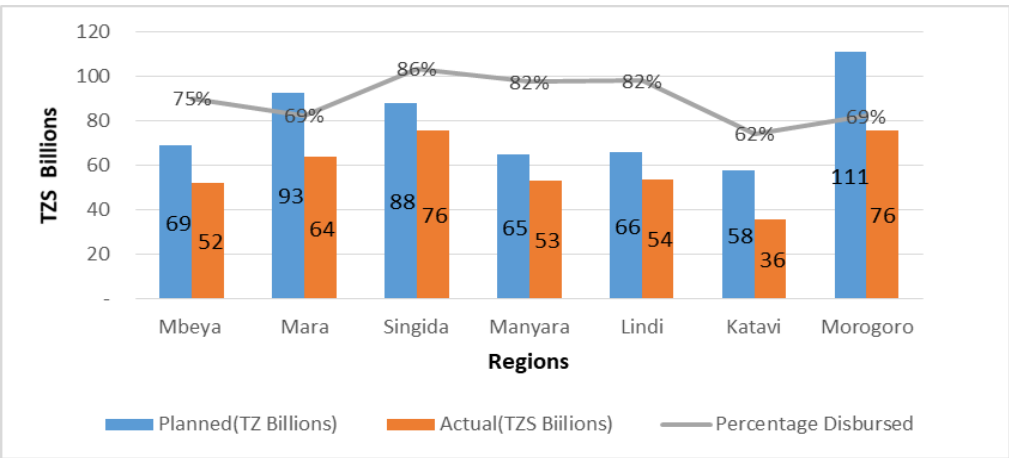


**Source:** Auditors' Analysis of TANROADS Annual Plans and Performance Reports, 2021

From **Figure 4.4** above, it can be noted that the percentage of allocated funds at TANROADS ranged between 73% in 2016/17 to 95% which indicates an improvement of 12%. It also shows that overall, the disbursed funds to TANROADS were 80% of the approved operational plan budget.

The audit further analysed the disbursement of funds to regional offices in the last from 2016/17-2020/21. Figure 4.5 below shows the percentage of the total disbursed funds to regional offices from 2016/17 - 2020/21.

**Figure 4.5: Percentage of the Disbursed Maintenance Funds to the Regions (2016/17-2020/21)**



*Source: Auditors' Analysis from Regions Quarterly Progress Reports (2016/17-2020/21)*

**Figure 4.5** shows that none of the visited regions received 100% of the required funds. The percentage of disbursed funds ranged between 62% in Katavi Region and 86% in Singida Region.

The following were the reasons for deficiency between the required and available funds in TANROADS both at HQ and Regional Offices:

**(a) RFB did not use RMMS Criteria for Maintenance Budget Allocations**

Regulations 25(2) of the *Road and Fuel Tolls Regulations, 2016* state that, in determining the allocation of funds for maintenance of Roads the Board should consider constrained budget. Allocation to Regions was supposed to be generated using RMMS in consideration of multi-criteria Analysis such as

(a) Condition of the road (b) length of the roads network (c) relevant volume of traffic (d) Need delivered from an approved management tool and (e) any other factors which the Board may determine.

According to interviews with Officials at TANROADS prior to 2010 the procedure was followed to obtain the initial budget for the Regions which had corresponding budget increase initially.

However, since 2010 allocation of maintenance budgets was done by considering previous year budget ceiling for the respective Regions regardless of other factors due to substantial increase in Maintenance budgets. The audit further compared the budgets ceilings in the visited Regions from 2016/17-2020/21 and the results are as depicted in **Table 4.3:**

**Table 4.3: Maintenance Budget Ceilings in the Visited Regions**

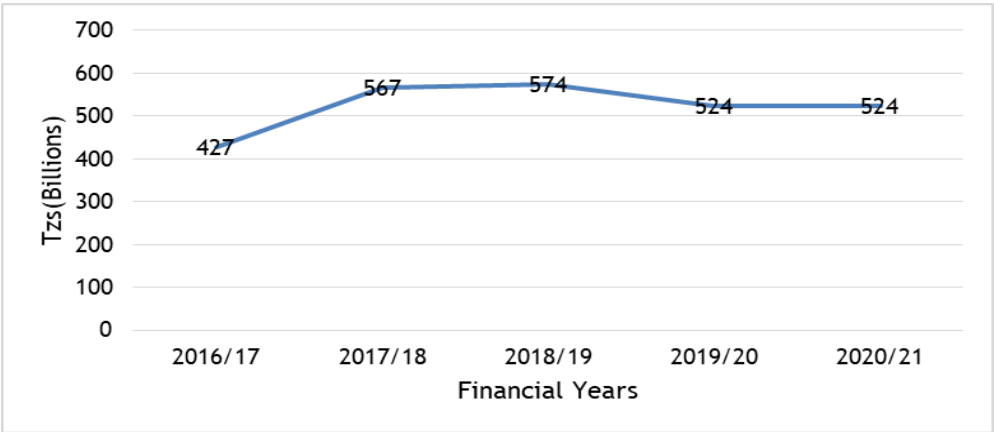
Regions	Trend of Budget Ceilings in Regions (In TZS Billions)					
	2016/17	2017/18	2018/19	2019/20	2020/21	% Change
Mbeya	11	15	15	14	14	27
Singida	15	18	17	16	19	27
Lindi	9	15	14	13	12	33
Mara	15	14	19	21	22	47
Manyara	9	14	14	13	14	56
Katavi	7	12	11	13	13	86
Morogoro	11	26	25	24	24	118

*Source: Auditors' Analysis from TANROADS Fund Budget 2016/17-2020/21*

From **Table 4.3** above it can be seen that, the maintenance budget slightly improved from 2016/17-2020/21. It can be noted that the change in maintenance budget ranged between 27% in Mbeya and Singida to 118% in Morogoro region. Similarly, it can be noted that from 2017/18 to 2020/21 the budget ceiling in all seven regions remained constant.

According to interviews with TANROADS' officials the reason for using the previous ceiling in planning for maintenance budgets was the fact that the maintenance ceiling hadn't significantly increased from 2016/17-2020/21 years as depicted in **Figure 4.6** below in which the budget ceiling increased only by 22% from 2016/17 to 2020/21.

**Figure 4.6: Budget Ceiling from Road Funds to TANROADS**



*Source: Auditors' Analysis from Road Funds Ceiling Letters to TANROADS (2016/17-2020/21)*

From **Figure 4.6** above, it can be seen that, in FY 2016/17 the ceiling budget was TZS 427 Billion whereby in 2020/21 it was TZS 524 Billion which is increase of TZS 97 Billion equivalent to 22 percent five years increase. It can also be seen that in 2019/20 and 2020/21 the ceiling budget is TZS 524 Billion remained constant.

**(b) Low Capacity of RFB to Finance Maintenance of Roads in the Country**

Through the reviews of Road Funds Budgets over the last five years, the Audit noted that, the budget to finance road maintenance was lower than the actual maintenance budget. **Table 4.4** shows trend of unconstrained and Annual Budgets from TZS 768 Billion in the financial year 2016/17 to TZS 818 Billion in financial year 2020/21. The trend indicates that the capacity of Roads Fund Board to Finance actual maintenance of roads decreased from 49% in 2016/17 to 49% in 2020/21. Similarly, the range of financing was 41% in 2019/20 and 52% in 2017/18 which indicates the gap of 11%.

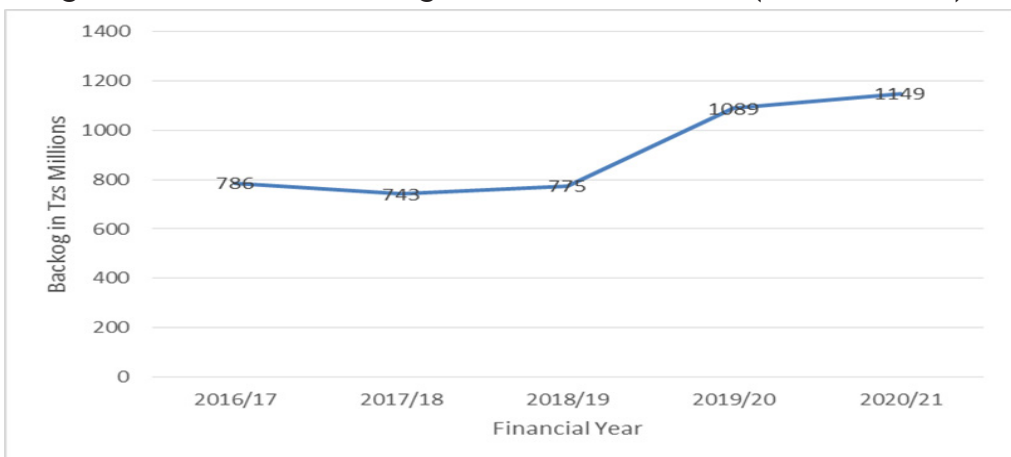
**Table 4 4: Comparison of the Actual Maintenance Cost and Road Funds Budgets for the period of 2016/17-2020/21**

Financial Year	Actual Maintenance Cost ( TZS Billions	Roads Fund Budget (TZS Billions)	Funding Capacity (%)
2016/17	1554	768	49
2017/18	1561	818	52
2018/19	1586	811	51
2019/20	1838	749	41
2020/21	1967	818	42
<b>Total</b>	<b>8506</b>	<b>3964</b>	<b>47</b>
<b>Average</b>	<b>1701</b>	<b>792</b>	<b>47</b>

*Source: Auditors' Analysis from Road Funds Annual Reports 2016/17-2020/21*

From **Table 4.4** above, it can be noted that the average annual financial requirements for road maintenance was TZS 1701.28 Billion against annual average allocation of TZS 792 Billion - equivalent to 47 percent of the requirements. Therefore, on average, the annual financing deficit was TZS 908 Billion - equivalent to annual average of 53 percent of the financing Deficit. The audit noted the inadequacy of maintenance funds caused an increase of backlog of maintenance to TZS 1,149 Billion in FY 2020/21 from 786 Billion as indicated in **Figure 4.7**:

**Figure 4.7: Financial Backlogs of Road Maintenance (In TZS Billions)**



*Source: Auditors' Analysis from Roads Fund Annual Reports 2016/17-2020/21*

From **Figure 4.7** above, it can be noted that the Financial Backlogs of Road Maintenance increased from 786 Billion in 2016/17 to 1.149 Trillion in 2020/21. The audit further analysed the financing capacity of Roads Fund

Board on National Roads and Districts Roads and the results revealed that the Roads Fund Board Capacity to Finance both National Roads and Districts Road remained low in the last five years. **Table 4.5** shows the funding capacity of Road fund to finance National Roads.

**Table 4 5: RFB Funding Capacity for the Maintenance of National Roads**

Financial Year	Required Maintenance Budget (TZS Millions)	Actual Maintenance Budget (TZS Millions)	Deficit (TZS Millions)	Funding Capacity (Percentage)
2016/17	775	520	255	67
2017/18	855	573	282	67
2018/19	999	568	431	57
2019/20	1199	524	675	44
2020/21	1268	573	695	45
<b>Total</b>	<b>5096</b>	<b>2757</b>	<b>2338</b>	<b>46</b>
<b>Average</b>	<b>1019</b>	<b>551</b>	<b>467</b>	<b>46</b>

*Source: Auditors' Analysis of the Road Funds Annual Reports 2016/17-2020/21*

From **Table 4.5** above, shows that the funding capacity had been decreasing in the last five years. The capacity to fund National Road was 67% in 2016/17 which decreased to 46% in 2020/21. Also, it shows that the average annual financial requirements for national road maintenance was TZS 1019 Billion against annual average allocation of TZS 467 Billion - equivalent to 46 percent of the requirements. This result indicates that on average, the annual financing deficit was TZS 467 Billion - equivalent to an annual average of 54 percent of the financing requirements.

Similarly, the audit analysed the capacity of Roads Fund Board to finance maintenance of roads in Districts and the results as indicated in **Table 4.6** show that funding capacity of Road Funds Board to finance District Roads ranged between 32% and 41% in the last five years which was lower than the required amount.

**Table 4.6: Comparison of the Required Amount and Actual amount of Maintenance Funds for National Roads**

Financial Year	Required Maintenance Budget (TZS Million)	Actual Maintenance Budget (TZS Million)	Deficit in TZS Millions	Funding Capacity in Percentage (%)
2016/17	779	248	531	32
2017/18	706	245	461	35
2018/19	587	243	344	41
2019/20	639	225	414	35
2020/21	699	245	454	35
Total	3410	1206	2204	35
Average	682	241	440	35

*Source: Auditors' Analysis of the Road Funds Boards Reports and Annual Budgets 2016/17-2020/21*

From **Table 4.6** above, it can be noted that, the average annual maintenance financial requirements for district roads was TZS 682 Billion against the annual average allocation of TZS 241 Billion - equivalent to 35 percent of the requirements. This result indicates that on average, the annual financing deficit was TZS 440 Billion - equivalent to annual average of 65 percent of the financing deficit.

According to Roads Fund Board the financing deficit would increase a build-up of back-log maintenance both physical and financial and thus would further result into more road sections that would require major rehabilitation or reconstruction after deteriorating to poor conditions. Reasons for Inadequate Road Maintenance Funding by Roads Fund Board included:

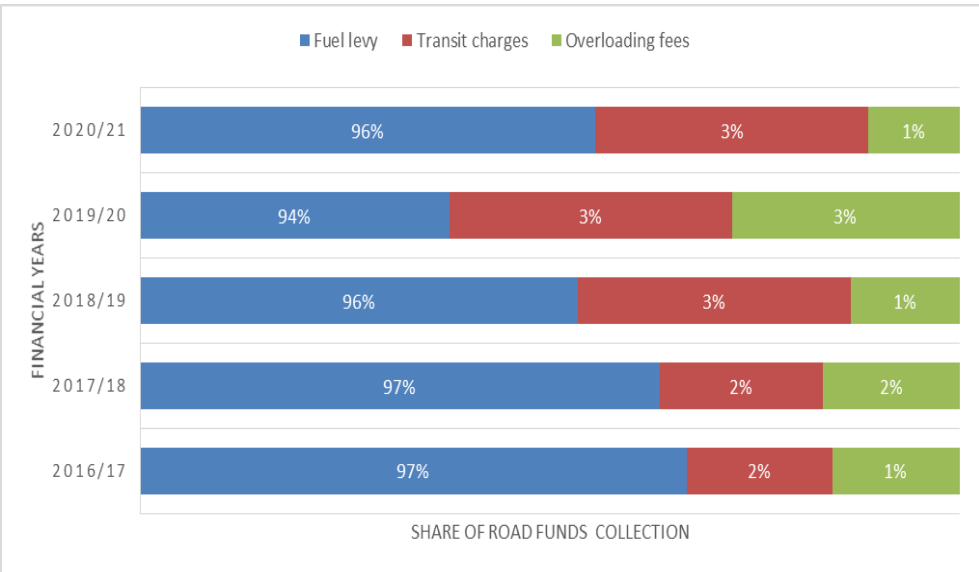
#### ***Over-dependence on Single Source of Revenues***

Pursuant to Section 5 (4) (d) & (e) of the Road and Fuel Tolls Act CAP 220, the Roads Fund Board is mandated to collect, disburse and monitor utilization of the Roads Fund collected from authorized sources which are Fuel Levy, Transit Fees, Overloading and Abnormal Load Permit Fees

Interviews with Officials from the Roads Fund Board revealed that the deficiency in Road Maintenance Funds was attributable to over-dependence on fuel levy. **Figure 4.8** shows the extent to which the Road Fund Board

depended on fuel levy as its main source of fund. The audit analysis of the share contribution of each RFB fund sources in the last five years noted that on average the fuel levy contributed to more than 96% of the Total Road Fund Revenue Collection while other sources such as overloading and transit charges on average contributed only 2% each. **Figure 4.8** also shows the trends in the percentage share of the road funds. The results indicate that Fuel levy contributed to about 96 percent of the total Road Fund Revenue collections in the last five years.

**Figure 4.8: Percentage Share of Road Fund Revenues from 2016/17-2020/21**



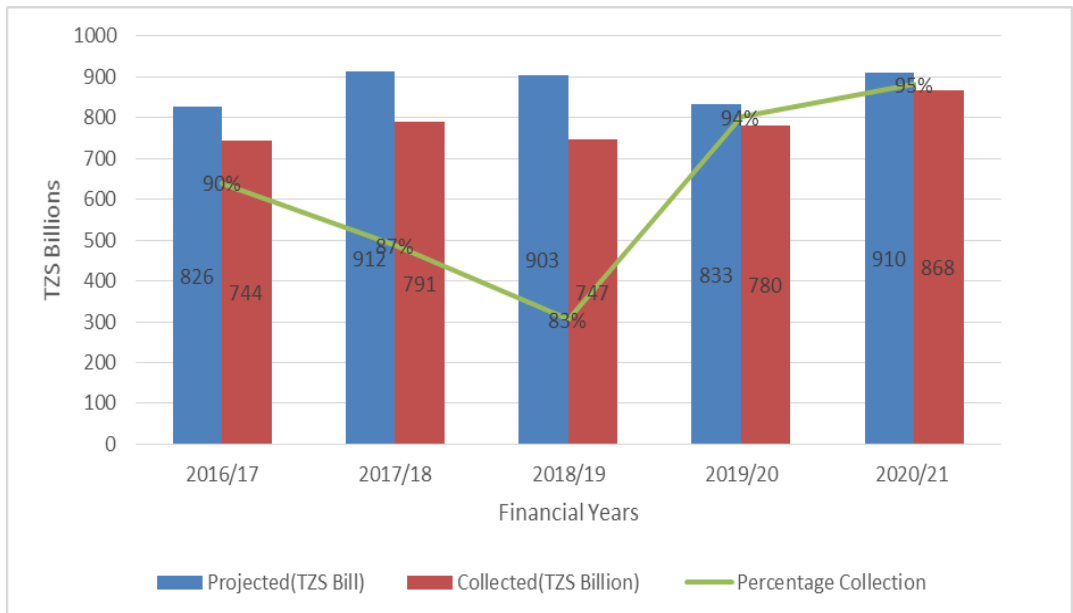
*Source: Auditors' Analysis from RFB Revenue collection reports, 2021*

From **Figure 4.8** above, it can be noted that the fuel levy collection remained the highest source of Road Fund Board revenues although its share of contribution slightly decreased from 97% in 2016/17 to 94% in 2020/21. Similarly, the contribution of both transit charges and overloading slightly increased from 1% in 2015/16 to 3% in 2019/20.

Similarly, the audit analysis of the trend of fuel levy collection from 2016/17-2020/21 as depicted in **Figure 4.9** below indicates that the fuel levy collections remained constant from 2016/17-2020/21. The Road Fund collected TZS 744 Billion in 2016/17 to TZS 780 Billion equivalent to an increase of 4% in the last five years. **Figure 4.9** below present the trend in fuel levy collection from 2016/17 to 2019/20.



**Figure 4.9: Trend in Fuel Levy Collections**



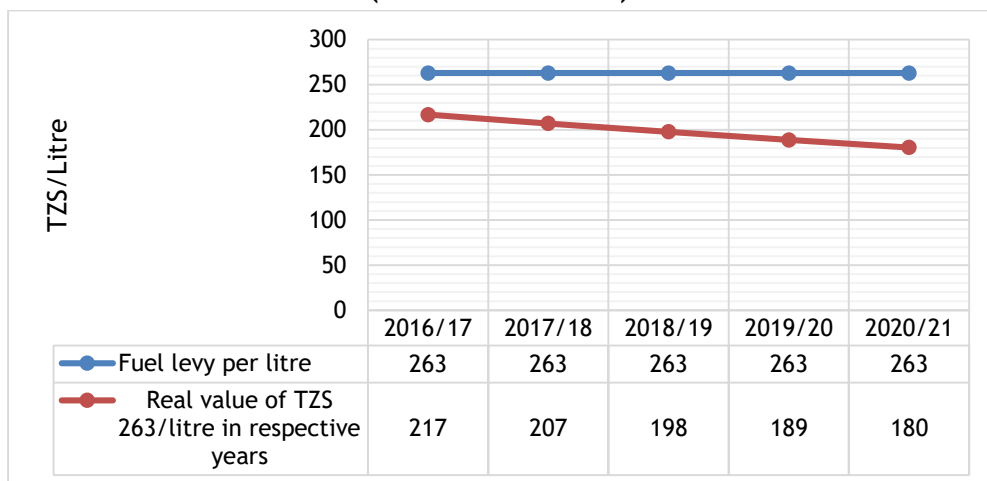
*Source: Auditors' Analysis from RFB Revenue collection reports, 2021*

**Figure 4.9** indicates that, fuel levy collections increased from 90% in 2016/17 to 95 in 2020/21, which indicates that there was effectiveness in the collection of Fuel Levy. It was noted that the main factor that affected the collection of fuel levy was the decrease in the value of the rate of Fuel Levy.

#### ***The Decrease in the Value of the Fuel levy Rate/Litre***

According to Road Fund Board the rate of fuel levy TZS 263 per litter that was approved and started to be applied from 1<sup>st</sup> July 2013 has not been revised for over the past seven years. The audit comparison of the trend of fuel levy/ litre in real terms indicated that the value of the rate of fuel levy per litre has fallen in real term to an equivalent of TZS 180.4 Billion by July, 2020 equivalent to a fall of 31.4% as depicted in **Figure 4.10** below. The massive decrease in the value of fuel levy/litres over the years due to inflation reduces the capacity of RFB to finance maintenance.

**Figure 4.10: Impact of Inflation of the Rate of Fuel Levy per Litre (2016/17-2020/21)<sup>4</sup>**



*Source: Auditors' Analysis of the Fuel Levy Rate and NBS CPI, 2021*

From **Figure 4.10** above, it can be seen that the fuel levy per litre for five years remained constant while the real value rate of fuel levy per litre declined from TZS 217 Billion in 2016/17 to TZS 180 Billion in 2020/2. This implies that, the expected maintenance funds to be collected obviously would decline from set target leading to low capacity to finance road maintenance works.

### **4.3 Inadequate Management of Time, Cost and Quality of Road Maintenance Works**

*Does the Implementing Agency (TANROADS) adequately manage road maintenance works within planned time, cost and quality?*

TANROADS is required to ensure that any planned maintenance work is executed within the planned time, cost and quality stipulated in the relevant contract and as per entered Performance Agreements of 2016/17 - 2020/21. This section describes delays of execution of roads maintenance work, experienced cost overrun and inadequate quality in maintenance of roads as detailed below:

<sup>4</sup> the CPI data (September 2017),

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#### 4.3.1 Delays in Execution of Maintenance Works

*Are the roads maintenance works implemented within the agreed time, cost, and quality?*

Regulation 10(1) (c) of Road and Fuel Tolls Regulations requires TANROADS to ensure that any planned maintenance work is executed within the time, cost and quality stipulated in the relevant contract.

Through review of road maintenance project contract documents, Audit Team noted that, TANROADS did not ensure that maintenance works were per the requirements of Regulation 10(1). The analysis of the project's information revealed the followings:

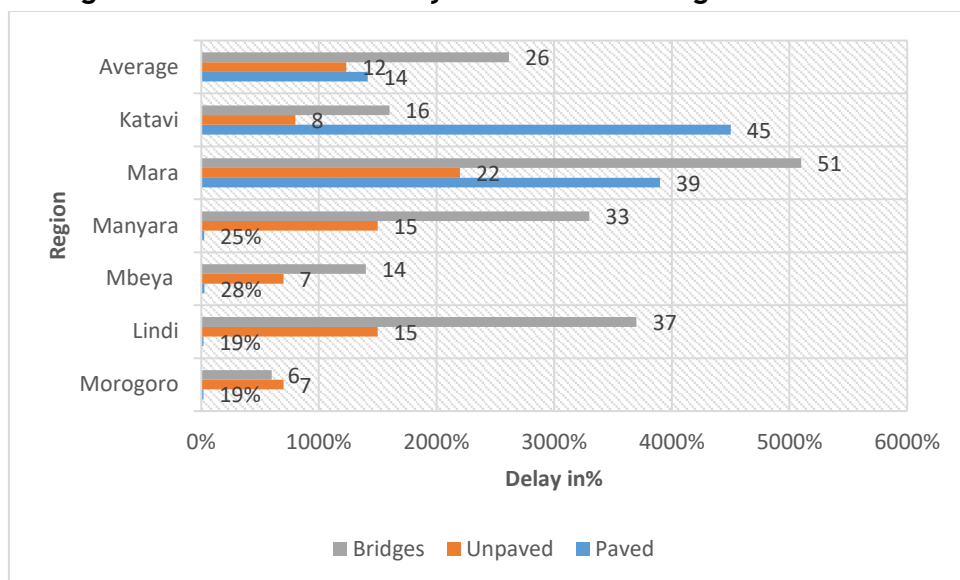
##### (a) 33% of Road Maintenance Works Experienced Delays in Completion

At the National level, the audit revealed that from 2016/17-2019/20, 643 out of 1970 road maintenance works contracts experienced delays in completion. **Appendix Twelve** of this report present the extent at which various roads maintenance projects were delayed.

The **Appendix Twelve** shows contracts of maintenance projects which delayed in respectively financial years from 2016/17-2019/20. Bridge maintenance-major repairs in regional networks were observed to have high delay of averaged at 85% while Bridge maintenance -Preventive - Unpaved and Spot improvement - Paved maintenances were found had no delay in execution.

Similarly, the extent of delays in roads maintenance in TANROADS Regional Offices is explained in **Figure 4.11** based on 7 sampled TANROADS Regional Offices.

**Figure 4.11: Extent of Delays at TANROADS Regional Offices**



*Source: Auditors' Analysis from Road Maintenance Reports FY 2016/17-2019/20 (Fourth Quarter Progress Report) Volume ii -Contracts Data.*

From **Figure 4.11**, it can be seen that, the extent of delay for paved roads in the visited regions ranged from 19% to 45%, unpaved roads ranged from 7% to 22% and for Bridges ranged from 6% to 51. This implies that, bridges maintenance faced highest delays while unpaved roads had low rate of delays. Delay of maintenance of roads resulted to back long and colossal fund for maintenance works. In addition, the unmaintained roads led to reconstruction and rehabilitation as well as increase in maintenance costs.

The Audit Team noted that, delays in the completion of the maintenance work were contributed by delay in issuance of Government Notice (GN) for VAT exemptions for maintenance works. The extent of delays in FY 2019/20 from TANROADS GN Database request from Regional Offices are presented in **Table 4.7**:

**Table 4.7: Shows the Extent of Delay of Maintenance Projects Due to VAT Exemption Delays in FY 2019/20**

<b>TANROADS Regional Office</b>	<b>No of Contract Requested GN</b>	<b>Average Time Spent for Waiting GN (Days)</b>
Mbeya	46	83
Lindi	53	88
Mara	44	91
Singida	51	93
Morogoro	71	106
Manyara	40	122
Katavi	29	211

*Source: GN Database from TANROADS and Procurement file 2019/20*

**Table 4.7**, shows the extent of delay in maintenance project due to delays in VAT exemptions. The extent of delay in maintenance projects ranged from 83 days to 211 days. This resulted to untimely completion of maintenance projects. The main reason for the delay in issuance of GN VAT exemptions from the interviews held with TANROADS officials was long process that approval of the GN from MoFP and TRA passes through.

In addition to delays in issuance of GN, further review of requests for extension of time for maintenance works revealed a number of reasons as summarized in **Table 4.8** below: -

**Table 4.8: Reasons for the Delays in Completion of Maintenance Works Showing other Reasons for Delay**

<b>Reasons for Delay</b>	<b>Concerned TANROADS' Regional Offices</b>
High Rainfall which hinders the execution of Road Works	Both Mara, Morogoro, Katavi, Lindi, Mbeya, Singida and Manyara
Scarcity of Bituminous Materials and non-availability of Asphalt Concrete in the Regional lead to lower performance of works	Mara, Morogoro, Lindi Katavi
Delay of contractors to acquire performance securities	Mara, Morogoro, Katavi, Lindi, Mbeya, Singida and Manyara
Delay of request of payments to Contractors.	Katavi
Delay of procurement	Mara
Delay due to payment of outstanding payments of previous years	Mara

Reasons for Delay	Concerned TANROADS' Regional Offices
Delay caused by retendering (twice) of the works whereby original bidders were on higher side than the budget for the works.	Morogoro, Mara and Lindi

*Source: Fourth Quarter Progress Reports, Physical Progress Reports Financial years 2016/17-2020/21*

The delay in road maintenance shortens the life span of the roads, increase deterioration of roads and leads to high operating costs. Also, the backlog costs due to delayed maintenance are also higher for the road networks in fair and poor condition.

#### **(b) 2% of Roads from Visited Regions Experience Cost Overrun**

Chapter 6 (d) of Road Maintenance Handbook Part ii require Engineers to estimate execution costs based on the quantities of execution works and basic unit costs. Engineers should fix basic unit costs taking into consideration regional conditions.

Review of Road Maintenance Report FY 2016/17-2020/21 (*Fourth Quarter Progress Report*) Volume ii -Contracts Data, Auditors observed the completed projects with cost overrun was 2% of all completed project in the sampled TANROADS Regionals.

**Appendix Thirteen** of this report shows the number of completed maintenance project contracts and the number of maintenance project contracts with cost overrun for the financial year 2016/17-2019/20

From the **Appendix Thirteen** Auditors observed that 29 contracts of maintenance work out of 1811 contracts of maintenance works which is equivalent to 2% had cost overrun of the maintenance project contracts. On the other hand, Auditors noted that in many cases the estimates for maintenance projects were overestimated.

Review of Performance Based Management and Maintenance of Roads (PMMR) Project for selected paved and unpaved Roads along Trunk and Regional Roads at TANROADS Katavi Regional Office, showed that the signed contract sum was overestimated which resulted to revised contract sum. The **Table 4.9** below explain the overestimates for projects under

Performance Based Management and Maintenance of Roads (PMMR) at TANROADS Katavi Regional Office.

**Table 4.9: Completed Versus Revised Contracts Sum and Actual amount paid to Contractor at Katavi TANROADS Regional Office**

Financial Year	Contract Sum for Completed Projects (TZS Billion)	Revised Contract Sum for Completed Projects (TZS Billion)	Amount Paid to Date for Completed Projects (TZS Billion)	Revised Contract Sum Vs Contract Sum (TZS Billion)	Amount Paid to Date Vs Contract Sum (TZS Billion)
2016-17	18.40	15.86	14.94	-2.54	-3.46
2017-18	8.53	8.53	8.07		-0.46
2018-19	9.23	8.86	7.59	-0.37	-1.63
2019-20	2.08	2.41	1.98	0.33	-0.10
<b>TOTAL</b>	<b>38.23</b>	<b>35.65</b>	<b>32.58</b>	<b>-2.58</b>	<b>-5.65</b>

*Source: Auditors' Analysis from Road Maintenance Reports FY 2016/17-2019/20 (Fourth Quarter Progress Report) Volume ii -Contracts Data.*

The **Table 4.9** indicate that, the sampled regions had a total initial contract sum for completed projects of TZS 38,232,417,857.67 the revised contract sum was TZS. 35,647,909,183.20; therefore, the difference of TZS. 2,584,508,674.47 was obtained after revising contracts and the amount paid to completion of projects was TZS. 32,584,177,572.92 and TZS. 3,063,731,611 was not paid. This indicate that there was overestimation caused by inadequate preparation of Bill of Quantities. Also, some works were not executed due to inadequate capacity of contractors. This implies that there was inadequate due diligence, and reviews of BoQs during evaluation process.

The overestimate of Performance Based Management and Maintenance of Roads (PMMR) Project for selected paved and unpaved Roads along Trunk and Regional Roads at Katavi TANROADS Regional Office resulted to allocation of bulk fund for Maintenance of PMMR which consequently resulted to backlog Maintenance. In addition, this led to the failure to conduct maintenance to some of the potential roads as planned in respectively financial years.

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#### **4.3.2 Ineffective Mechanism to Ensure Roads Maintenance Works are Executed within the Planned Time, Cost and Quality**

*Does TANROADS have effective mechanism to ensure roads maintenance works are executed within the planned time and cost and meet the required quality, specifications, and standards?*

##### ***(a) Mechanism for Ensuring Executed Roads Maintenance Meet required Quality, Specification and Standards***

Section 5.1 of Annual Performance Agreements for Trunk and Regional roads maintenance works for the Financial Year 2016/17-2020/21 between Road Fund Board and TANROADS state that, TANROADS shall work according to the agreed quality standards, Performance Targets, and as per Work programs for all road's maintenance in accordance with the approved Annual Operational plan. Particular attention was required to be given to Design Standards, Maintenance standards, Quality Control of Materials, Workmanship, Contract Periods and Costs, as presented in the Schedule I to these agreements. Designs information for Periodic Maintenance, Development works, and any other major Emergency/Spot improvement interventions together with Materials testing results, and photographs (before, during and after interventions) will be kept in project files at the TANROADS Council Office.

Section 5.4 of Annual Performance Agreement for Trunk and Regional roads maintenance works for Financial Year 2016/17-2020/21 between Road Fund Board and TANROADS states that the quality of all road maintenance works, and materials shall be in accordance with the Maintenance Standards, relevant specification as agreed and safety standards as per recognized good practice. TANROADS shall respond to incidents and emergencies as they may be caused by natural disasters and other ordinary causes. The standard documents to be used include; Pavement and Materials Design Manual' Ministry of Works Standard specification 2000; Field testing manual; Laboratory Testing manual; Ministry of Works Road Geometrical design manual 2011 and Low Volume Manual and any relevant document approved by the Ministry of Works.

Review of Consultant (inter-consult ltd) Monthly Progress Report No. 5 dated 15<sup>th</sup> April 2020 for Performance Based management and Maintenance of



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Roads under Performance Based Management and Maintenance of Roads (PMMR) Project for Selected Pave and Unpaved Roads along Trunk and Regional Roads Names (i) Kawajense (Mpanda) -Kosovo 33.89KM and (ii) Kosovo - Mnyamasi JCT (31.80KM), Unpaved Roads Katavi Region. Auditors observed that contractor did not submit any test results for the borrow pits and concrete mix design, as the consultant stated this in Appendix 2B of Minutes of site meeting No.8 on Quality and Workmanship.

***(b) Under Payment of Completed Maintenance Project Contracts***

Chapter 6 (d) of Road Maintenance Handbook Part ii, requires engineers to estimate execution costs based on the quantities of execution works and basic unit costs. Engineers should fix basic unit costs taking into consideration regional conditions.

Through review of TANROADS 4th quarter FY 2016/17-2019/20 reports, the Audit team noted that, most contract of maintenance projects were underpaid to their time of completion. The cause of underpayment was due to suspension of some activities because of inadequate capacity of Contractors. The **Appendix Fourteen** shows that the contract Sum for maintenance projects in the sampled TANROADS Regionals Offices in FY 2016/17-2019/20 had a total of contract sum of 300,293,640,213.31 while amount paid to contractors was TZS 275,697,478,434.20.

**Appendix Fourteen** show that TZS. 275,697,478,434.20 was paid to completed projects out of TZS. 300,293,640,213.31, which was the contract sum for maintenance works of sampled regions. This implies that TZS. 24,596,161,779.11, was overestimated. The reasons for this were this inadequate preparation of Bill of Quantities for maintenance works and inadequate capacity of contractors. The consequence of underpayments is failure to execute all roads maintenance activities as planned.

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#### 4.3.3 Inadequate Quality Control of the Executed Road Maintenance Works Maintenance

*Does TANROADS have quality control and quality assurance plans at all stages of roads maintenance contract?*

Section 5.1 of Annual Performance Agreement for Trunk and Regional roads maintenance works for the Financial Year 2016/17-2020/21 between Road Fund Board and TANROADS state that, TANROADS must work according to the agreed quality standards, and as per Work programs for all road's maintenance in accordance with the approved Annual Operational plan.

The agreements also stressed that particular attention was required to be given to Design Standards, Maintenance standards, Quality Control of Materials, Workmanship, Contract Periods and Costs, as presented in the Schedule I to these agreements. Designs information for Periodic Maintenance, Development works, and any other major Emergency/Spot improvement interventions together with Materials testing results, and photographs (before, during and after interventions) will be kept in project files at the TANROADS Council Office.

Moreover, section 5.4 of Annual Performance Agreement for Trunk and Regional roads maintenance works for Financial Year 2016/17-2020/21 between Road Fund Board and TANROADS state that the quality of all road maintenance works and materials shall be in accordance with the Maintenance Standards, relevant specification as agreed and safety standards as per recognized good practice. TANROADS shall respond to incidents and emergencies as they may be caused by natural disasters and other ordinary causes. The standard documents to be used include Pavement and Materials Design Manual; Ministry of Works Standard specification 2000; Field testing manual, 2013; Laboratory Testing manual; Ministry of Works Road Geometrical design manual 2011 and Low Volume Manual and any relevant document approved by the Ministry of Works.

TANROADS - Standard Specifications for Maintenance Works 2010 Section 8.8 (v) States that, where considered necessary by the Engineer he shall require tests to be carried out to evaluate the consistency and strength of the concrete. All testing shall be carried out at the Contractor's expense.

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Review of Consultant (Inter-Consult Ltd) Monthly Progress Report No. 5 dated 15<sup>th</sup> April, 2020 for Performance Based management and Maintenance of Roads under Performance Based Management and Maintenance of Roads (PMMR) Project for Selected Paved and Unpaved Roads along Trunk and Regional Roads Namely (i) Kawajense (Mpanda) -Kosovo 33.89KM and (ii) Kosovo - Mnyamasi JCT (31.80KM), Unpaved Roads Katavi Region. The Audit Team observed that contractor did not submit any test results for the borrow pits and concrete mix design, as the consultant stated this in Appendix 2B of the Minutes of site meetings No.8 on Quality and Workmanship.

Also, based on visual assessments, Audit Team aimed to determine whether the works were satisfactory in terms of overall quality of workmanship, overall quality of materials used, and if the works have no defects, such as cracks, ruts and localized potholes. The site verification witnessed that; the maintenance projects were not adequately supervised. For instance, Msamvu - Morogoro roundabout - Bigwa Junction was recently maintained (resealed) and found to have defects such as bleeding of bitumen, chippings strip off, rutting's and revelling as shown in **Photo 4.1:**



**Photo 4.1:** Shows Msamvu-Morogoro roundabout -Bigwa Junction with defects of strip-off chippings, bleeding and rutting (Caption by Auditors 3<sup>rd</sup> Nov 2021 at 10hr48).

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From **Photo 4.1**, it can be seen that, the road is constructed recently but the defects have physically appeared on the surface. These defects include strip-off chippings, bleeding and rutting. Presence of such defects is a clear indication that supervision of ongoing road maintenance and quality control have been inadequate.

The consequences of inadequate quality control and supervision is poor road maintenance which eventual leads to deterioration of the roads sooner after maintenance.

#### **4.3.4 Inadequate Handing over of Completed Maintenance Projects**

Is the mechanism for closure and completion of the executed roads maintenance works effective?

Section 4.2.16 of the Draft Supervision Manual of 2008, requires TANROADS to adopt light contract final reporting using a free format (or to develop a fixed format), based on the need's assessment of the Project Manager, so as to highlight issues that can be learnt from, at the regional level, but also at zonal and national levels. Recording Not only problems and negative remarks, but also positive elements.

However, through review of completed maintenance projects and response from the officials from the visited TANROADS Regional Offices, the Auditor Team noted that, some of them for instance TANROADS Morogoro Regional Office did not adequately handover maintenance projects. This was because they did not prepare Final Report, including 'Lessons Learnt' which is contrary to the Draft of Supervision Manual of 2008.

The reason provided during interview held with TANROADS Officials was just negligence in complying with stipulated handover procedures.

The lack of project final report for completed projects may result to difficulties in the next maintenance works of the same Road, as well as failure to share and adopt lessons from previous maintenance works at regional and national levels.

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#### 4.4 Inadequate Supervision and Monitoring of Road Maintenance Activities by TANROADS

*Does TANROADS supervise and monitor road maintenance works effectively?*

The RMMS Operational Manual 2010, indicated that, in use of CMM as part of RMMS module, TANROADS was required to enter contract packages into the system, so as to Monitor and report on the implementation of contract as well provide statistics of the contracts implemented. TANROADS was required to employ enough engineers for supervision of ongoing projects as required by the Regulation No. 26(3) of Roads and Fuel Tolls Regulation of 2016 Cap 2020 GN No. 10. Generally, according to the existing laws, TANROSDA has a primary responsibility of ensuring that roads maintenance activities are effectively supervised and monitored.

However, the audit found out that, TANROADS did not adequately monitor and supervise the road Maintenance activities due to the following shortcomings:

##### 4.4.1 Inefficient use of Available Resources for Road Maintenance Activities

*Does TANROADS efficiently use the available resources (Staff, tools and plans, inspection checklist and test checklist) to ensure that maintenance activities are adequately supervised and monitored?*

Regulation 26(3) of Roads and Fuel Tolls Regulation of 2016 Cap 2020 GN No. 10 requires TANROADS to employ such number of engineers for the purposes of management of roads to ensure effective utilisation of the funds in accordance with the performance agreement(s). It was expected that TANROADS will allocate resources in respect to road networks and ongoing projects. However, the Audit Team noted the following weaknesses:

##### ***Huge Workload to TANROADS Staff***

TANROADS job list of 2018, requires 1 Engineer to supervise 2 ongoing projects (i.e., ratio of 1:2). However, through review of Annual Operation Plans and Annual Reports from 2016/17 to 2020/21, the Audit Team noted

unequal distribution of Resources to Respective Regional Offices. The analysis showed that, as of June 2020/21 the supervision workload ranged from ratio of 1:1 to 1:17 as indicated in **Table 4.10**: Workload ratios were determined by looking at the number of ongoing projects against number of Engineers in respective regions.

**Table 4 10: Workload of Supervision of Projects as of June 2020/21**

Region	No. of Contracts	Total available staff as 2020/21	No. of Engineer & Technicians Responsible for supervision	Ration of Engineer to Number of Projects
Songwe	28	No inf	No info	No Info
Coast	40	34	30	1:1
Mbeya	32	29	25	1:1
Morogoro	37	26	13	1:2
Dodoma	36	21	17	1:2
Kagera	43	20	14	1:4
Singida	20	13	12	1:2
Dar es Salaam	25	12	13	1:2
Katavi	28	17	12	1:2
Kilimanjaro	37	17	12	1:3
Manyara	41	22	15	1:3
Mara	30	31	14	1:3
Mwanza	51	19	15	1:3
Njombe	34	18	17	1:3
Rukwa	37	20	12	1:3
Shinyanga	51	28	15	1:3
Simiyu	34	14	11	1:3
Tanga	51	18	14	1:5
Arusha	70	24	15	1:7
Lindi	56	17	15	1:4
Mtwara	48	15	13	1:4
Ruvuma	60	17	14	1:4
Geita	44	13	9	1:5
Iringa	49	14	11	1:5
Kigoma	36	9	9	1:4
Tabora	50	15	9	1:6

*Source: The TANROADS' Regional Office Annual Progress Report of 2020/21*

From **Table 4.10** above, it can be deduced that, 19 out of 26 regions equivalent to 73 percent had huge workload ranging 1:3 to 1:17. The

minimum workload was found in 12 regions with 1:3 ration while maximum workload was found in 1 region (Arusha) with ratio of 1:7. This implies that, 1 Engineer from 12 regions was responsible for more than 3 maintenance projects.

Further after the review of TANROADS' Strategic Plans of 2016/17-2020/21 the Audit Team noted that, TANROADS has a deficit of 59% of staff in the Financial Year 2020/21. This implies that, TANROADS had inadequate capacity for supervision of projects. The situation regarding distribution of staff at TANROADS HQ is depicted by Table 4.11 below:

**Table 4.11: Deficit of Staff at TANROADS Headquarters**

FY	Required No of Staff	Available	Deficit	Deficit in %
2016/17	849	837	12	1
2017/18	993	792	201	20
2018/19	1095	738	357	33
2019/20	1772	696	1076	61
2020/21	1781	733	1048	59

*Source: TANROADS' Schedule of Personal Emoluments and Strength /Staffing level of 2016/17-2020/21*

Table 4.11 indicated that, TANROADS had 733 out of 1781 required staff equivalent to 41%. This implies that, TANROADS had a deficit of 59% of staff as of 2020/21. This means that, TANROADS had inadequate capacity for monitoring and supervision of ongoing maintenance works in the country.

The Audit Team conducted further analysis on visited TANROADS' Regional Offices and noted that, the deficit of staff ranged from 4 to 12 technical personnel responsible for inspection and supervision of project as indicated in Table 4.12:

**Table 4.12: Deficit of Staff in the Visited TANROADS' Regional Offices**

Region	DEFICITS								
	HPMU	Head of Planning	Head of Project Developme	Head of Materials Laboratory Unit	Head of Weigh Bridge	Maintenance	Project Engineers	Technician	Total Deficit
Mara	0	0	0	0	0	0	0	0	0
Katavi	0	0	0	0	0	0	0	4	4
Lindi	0	0	0	0	0	0	0	6	6
Singida	1	1	0	0	0	1	1	2	6
Morogoro	0	0	0	0	0	0	1	7	8
Manyara	0	0	0	0	0	0	1	9	10
Mbeya	1	1	0	1	1	2	1	5	12

*Source: TANROADS' Regional Offices - Annual Progress Reports of 2016/187*

From **Table 4.12**, it can be seen that, the deficit of staff in TANROADS' Regional Offices ranged from 4 to 12. The maximum demand was found at Mbeya Region Office with deficit of 12 staff while the minimum demand was found in Katavi Regional Office where there is a deficit of four Staff. The audit noted that staff deficits in TANROADS Regional Offices exists due to ineffective TANROADS' plans for human resources. The deficit of staff to a large extent led to inadequate supervision and inspection of road maintenance projects.

Furthermore, shortages of supervision vehicles at TANROADS Regional Offices led to inadequate inspections of roads maintenance activities. Through review of Progress reports of 2016/17-2020/21 from TANROADS' Regional Offices, the Audit Team noted that, TANROADS had a deficit in vehicles. The transport of TANROADS' Staff to site for inspection and supervision had been a challenge due to the fact that, vehicles are with poor conditions, damaged and some of them are grounded requiring replacements. **Table 4.13** shows the deficit of supervision vehicles for visited TANROADS' Regional Offices.



**Table 4.13: Deficit of Transport Vehicles at TANROADS' Regional Offices**

Region	Total Vehicles	Good	Fair	Poor	Damaged need Repair	Grounded	Deficit
Mara	9	5	2	2	0	0	0
Mbeya	9	4	1	4	0	1	0
Morogoro	22	5	4	7	1	6	0
Singida	12	8	4	0	0	0	1
Lindi	13	8	1	1	0	4	4
Katavi	14	5	4	0	0	5	7
Manyara	11	4	4	3	0	7	7

*Source: The TANROADS' Regional Offices Annual Progress Reports submission of (2016/17-2020/21)*

Table 4.13 indicates that, Katavi and Manyara had deficit of Seven transport vehicles while Lindi had deficit of 4 vehicles. Similarly, Singida had deficit of one Vehicle. The reasons provided on deficit was due to the fact that, vehicles had been grounded, damaged and were in poor condition. This resulted to inadequate supervision and inspection of roads maintenance activities.

Apart from supervision and inspections, TANROADS' Regional staff are also responsible for conducting condition and inventory surveys. Due to the shortage of staff TANROADS failed to conduct road condition surveyed in the country. A review of 4th Quarter report for five financial years from 2016/2017 to 2020/2021 indicated that, the overall capacity of TANROADS to execute the condition and inventory surveys was 91 percent as shown in Table 4.14.

**Table 4.14: Extent of Surveyed Road Networks in the Country**

FY	Total Road Networks (km)	Condition surveyed road networks (km)	Un-surveyed Road Networks	Percentage of surveyed	Percentage of un-surveyed
2016/17	35,000.00	31,227	3,773	89	11
2017/18	36,258.00	33,210	3,048	92	8
2018/19	36,258.00	32,852	3,406	91	9
2019/20	36,258.00	33,286	2,971	92	8
2020/21	36,361.95	32,979	3,383	91	9
<b>Total</b>	<b>180,135.95</b>	<b>163,554.77</b>	<b>16,581.18</b>	<b>91</b>	<b>9</b>

*Source: Operation Plans of FY 2016/17-2020/21 and 4<sup>th</sup> Quarter of FY 2016/17-2020/21*

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**Table 4.14** above, indicates that, 163,554.77 km out of 180,135.95 km were surveyed from FY 2016/17 to 2020/21. It can be also seen that, 16,581.18 km out of 163,554.77 km planned km to be surveyed were not surveyed. The reasons provided during interviews held with TANROADS Officials for the failure to conduct the roads condition surveys were inadequate number of staff, and impassability of the roads due to poor maintenance.

#### **4.4.2 Ineffective Plan for Supervising and Monitoring Road Maintenance Activities**

*Does TANROADS have in place effective plan for supervising and monitoring roads maintenance activities?*

According to Section 5.4 of Performance Agreement between Roads Fund Board and TANROADS of 2016/2017-2020/21 quality of all road maintenance works must be in accordance with the maintenance standards and relevant specifications. To ensure good quality of maintenance works, TANROADS was required in daily basis to supervise and monitor road maintenance activities.

However, through review of documents, conduct of interviews and physical verifications, the Audit Team noted the following anomalies regarding supervision and monitoring of road maintenance activities:

##### ***Ineffective Monitoring Plan at TANROADS Headquarters***

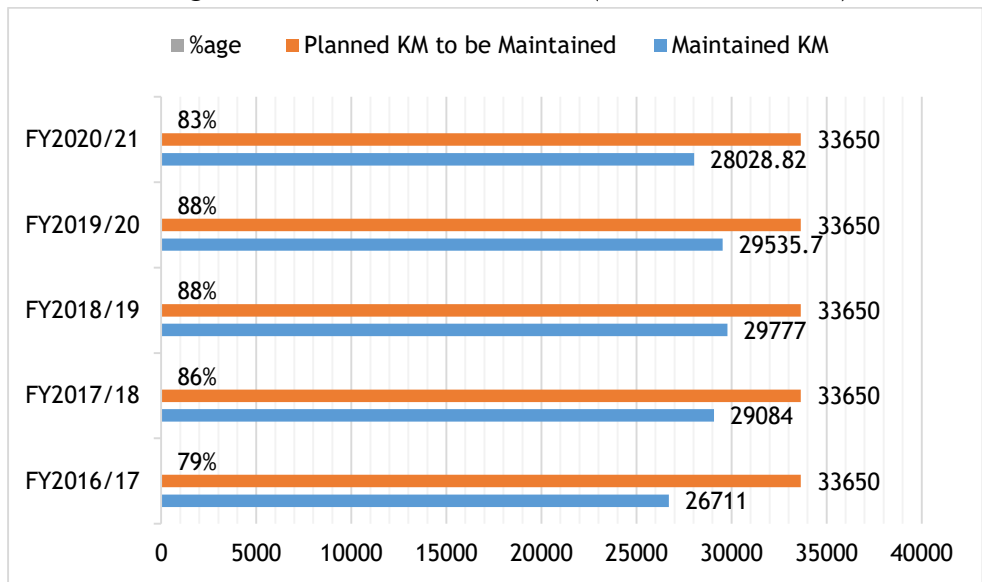
According to subsection 4.7.1 of TANROADS' Strategic Plan of 2016-2021 the Agency must prepare monitoring plans showing key performance indicators, targets values, methods of data collection and analysis, and reporting frequencies. In measuring the effectiveness of maintenance programme, the formula supposed to be used was  $(x/y) * 100$  (where x = km of fair and good roads and y = Total km of National Roads network in the base year).

Measurement of effectiveness of the maintenance programmes was to be measured through target 5 of the Strategic Plan (2016-2021). However, through review of 5<sup>th</sup> Strategic Plan (2016/17-2020/21) Performance Review report of July 2020 it was found that the Agency did not adequately measure the effectiveness of maintenance programmes. The report narrated the

total network which were maintained by TANROADS but not the effectiveness of maintenance programmes of 2016/17-2020/21.

Moreover, the Audit Team conducted further review of Maintenance Operation Plans of 2016/17-2020/21 and noted that the maintenance were also ineffectively implemented due merging challenges of maintenance fund deficit which led TANROADS not to reach its targets as detailed in **Figure 4.12:**

**Figure 4.12: TANROADS’ Overall Performance in Maintenance Programme for the Past Five FY (2016/17-2020/21)**



*Source: 5<sup>th</sup> Strategic Plan 2016/17 2020/21 Performance Review report of July 2020 and 4<sup>th</sup> Quarter Progress Report of 2021*

From **Figure 4.12** above, it can be seen that TANROADS did not reach its set targets by 84 percent in the Financial Year 2020/21 and 88 percent in the Financial Years 2018/19 and 2019/20. However, such underperformance towards the set targets was not covered in the Performance Review Report of 2020/21. The factors that contributed to underperformance were also not identified. All these happened simply because the Agency did not have effective monitoring plan to guide in measurement of effectiveness of maintenance programmes for the past five years with respect to their weaknesses and strengths in promoting roads maintenance projects.

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The Performance review report of July, 2020 also did not identify the challenges faced in TANROADS which contributed to underperformance in road maintenance and monitoring of maintenance activities. Such information was crucial as it could have provided the spotlights to the imposition of counteract measures to achieve effective performance in road maintenance programmes. As a result of the existing challenges, the performance of maintenance activities has been declined each financial year as indicated in **Figure 4.12** above.

### ***Absence of Supervision and Inspection Plan at TANROADS Regional Offices***

TANROADS was expected to have supervision and inspection Plan for the ongoing road maintenance projects in the country. However, by the time of this audit, TANROADS had no Supervision and Inspection Plans at Regional Offices for the ongoing Maintenance Projects.

Among the supervision and Inspection outputs is daily progress report on supervision and inspection of maintenance activities. However, the Audit Team noted that, there were neither supervision nor inspection reports in TANROADS Regional Offices on the ongoing road maintenance activities. This is contrary to section 4.2.10 of Draft Supervision Manual of August 2008 which requires supervising staff, the Project Manager and Supervising Technician to report in a monthly basis the Progress of Maintenance Projects.

Review of Quarterly reports indicated that, preparation of reports was ad hoc basically for quarterly reporting to Headquarters only. Apart from that, the Audit Team also noted that the Contract Management Module under the RMMS was not effectively used on reporting of the maintenance projects because the system could not printout consolidated progress reports, both the physical and financial reports from regions.

Instead of the supervision and inspection plans, roads maintenance activities were solely left under the guidance of the respective responsible maintenance Engineers.

After thorough reviews of project files, the Audit Team satisfied itself that the Maintenance engineers neither had supervision plans nor inspection checklists.

**Table 4.15: Availability of Supervision and Inspection Plans for the TANROADS' Regional Offices**

Region Office	Number of contracts reviewed	Inspection Test Plan	Checklist	Supervision plan	Progress Reports	Annual Progress report through RMMS
Morogoro	3	0	0	0	0	3
Mbeya	7	4	0	0	4	7
Lindi	7	3	0	0	7	7
Mara	8	8	0	0	8	8
Manyara	9	3	0	0	6	9
<b>TOTAL</b>	<b>34</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>34</b>

*Source: Auditors' Analysis, 2021*

It can be seen from **Table 4.15** that, in the visited regions TANROADS had no supervision/Checklist and monitoring plan as the maintenance projects are treated as minor project. Likewise, 18 out of 34 projects had Inspection Plans equivalent to 53% of reviewed contracts, while 25 out of 34 of reviewed contracts equivalent to 74% had progress reports. Generally, the visit conducted to 7 Region revealed that the implemented projects did not comply with the required quality because of inadequate supervision due to lack of checklist and supervision plans.

#### ***Absence of Approved Supervision Manuals***

One of tools for ensure that, road maintenance projects attained their intended quality are Supervision Manuals which were required to be approved by the Ministry of Works and Transport ( MoWT). This is because, the MoWT has role of developing and approving Manuals, Guidelines and Standards for road maintenance activities.

However, review of TANROADS Strategic Plan 2016/17-2020/21 indicated that, until the end of June 2021, TANROADS had not approved any manuals for roads maintenance projects supervision in the country. Apart from documentary reviews, interviews with the TANROADS' Officials also

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indicated that the Agency had no plans or checklist for supervision of the ongoing and completed projects.

Hence, absence of approved manual, led to weak enforcement of the requirement for supervision and inspection of road maintenance project in the country. The Supervision Manual could have guided the Projects Engineers on procedures, tools, resources and reporting on the ongoing projects.

#### 4.4.3 Inadequate Inspections and Supervisions of Maintenance Projects

*Does TANROADS conduct inspections and supervisions of on-going roads maintenance activities effectively to ascertain the Value for Money?*

The Standard Specification of Road Works 2000 requires TANROADS to check all elements of quality of works on a regular basis to ensure compliance with the specified requirements.

However, the review of TANROADS' Strategic Plans 2016/17-2020/21 revealed that poor monitoring and supervision was among of the challenges facing TANROADS. The reason provided from the interview held with TANROADS Officials was due to inadequate number of supervising staff.

The Audit Team conducted thorough review on projects documents from the visited regions to ascertain whether there were supervision and inspections for all elements of maintenance projects to ensure attainment of the prescribed quality and Value for Money standards. This expected to include all stages of road maintenance projects. **Table 4.16** shows the extent to which inspections and supervisions for projects were conducted in the visited regions.

**Table 4.16: Extent of Supervision and Inspect of Roads Maintenance Projects from Visited Regions**

Region	Number of Contracts Reviewed	Project with detailed investigation of defects and Strip Map	Projects with Inspection/ supervision Reports	Material Tests prior, during maintenance activities	Payments as per executed works with attachment
Morogoro	3	0	0	2	3
Mbeya	7	0	1	4	7
Lindi	7	0	3	3	7
Mara	8	0	1	8	8
Manyara	9	0	4	9	9
<b>TOTAL</b>	<b>34</b>	<b>0</b>	<b>9</b>	<b>26</b>	<b>34</b>

*Source: Auditors' Analysis of the Road Maintenance Contract Files 2016/17-2020/21*

From **Table 4.16** it can be seen that, there were no projects which had thorough investigation of defects prior to maintenance. It can be also seen that, 9 out 34 reviewed contracts (equivalent to 26%) had supervision and inspection reports for ongoing visited road maintenance projects in the visited regions. Likewise, 26 out 34 reviewed (equivalent to 76%) Contracts had test during execution of maintenance of projects but not prior to execution of maintenance activities.

This implies that, 74% of reviewed contract of maintenance projects had no supervision and inspection reports for ongoing and 24% had no material tests prior and during execution of maintenance. As a result, there was non-compliances to quality control of ongoing maintenance projects.

The reasons provided during interviews held with TANROADS Officials was because they used RMMS for monitoring of project through CMM. In our view, CMM cannot substantiate effectiveness of supervision and inspection of road maintenance projects.

As a result, the ongoing maintenance projects are inadequately supervised in respective Regions due to inadequate number of inspection vehicles and engineers as aforementioned in **Section 4.4.1**.

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#### 4.4.4 MoWT through RFB Ineffectively Monitored the Utilisation of Maintenance Funds

*Does MoWT through Roads Fund Board ensure funds for maintenance of roads are effectively utilized exclusively for the intended purposes?*

Section 5.8 of Performance Agreements of 2016/17-2020/21 stipulated that, the Board reserves the right of inspecting and overseeing the performance of TANROADS in connection with maintenance works in order to verify the content of Annual Reports, and for the purpose of generally monitoring the performance of TANROADS against the agreed norms and standards. In monitoring technical auditing, the Board employs the Value for Money Instrument to ensure that, the released maintenance funds are utilised for the intended purposes.

Despite efforts by the RFB to ensure that monitoring activities of the use of funds were conducted in accordance with the signed Performance Agreements with TANROADS through various methods, i.e. in-house financial Audits and technical Audits, the audit found out that such activities were highly ineffective.

Through review of Technical Audit Reports of 2016-2021 conducted with different consultants, the Audit Team noted that the conducted Technical Audits did not capture all issues regarding utilisation of funds, although all stages of implementation of the projects were covered. Roads Fund Board also relied on financial Audited statements submitted by Agencies; however, these were not sufficient as they did not cover the extent of utilisation of funds for the road maintenance, rather than testing of Internal Controls and Expenditure of the funds.

This was because, Roads Fund Board among of roles was to monitor the utilisation of road maintenance funds, and however, there were no monitoring reports on effective utilisation of funds as per intended purposes. We are in a view that, the set target of audited regions was low comparing to number of regions. The reasons provided through interviews held with RFB Officials regarding the number of regions was due to inadequate capacity of the Board to conduct monitoring and evaluation of road maintenance Projects.



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Review of Technical Audit (Monitoring) Reports of 2016/17- 2020/21 did not provide actual and realistic figures on utilisation of funds rather auditing of project cycle.

Further review of Roads Fund Board Strategic Plan of 2016/17-2020/21 set targets of conducting monitoring utilisation of fund in (i.e Technical Audit) each financial year for 10 regions out of 26 in Tanzania Mainland. This is Equivalent to 38% of regions in Tanzania Mainland. This implies that, Roads Fund Board conducted 38% of monitoring on effective utilisation of roads maintenance funds in the country. As a result, 62 % of regions in the country were not monitored each financial year.

Hence, MoWT through Roads Fund Board, did not ensure that 100% of released road maintenance funds for roads maintenance effectively utilised for intended purposes.

#### **4.5 Inadequate Monitoring of TANROADS Performance by MoWT**

*Is the performance of TANROADS on the maintenance of roads being periodically monitored?*

Based on the existing legal and policy frameworks of the country, the Permanent Secretary responsible for Roads, the Chief Executives of TANROADS and Roads Fund Board have a primary responsibility in monitoring of the road works executed by TANROADS through Regional Managers. The Ministry and TANROADS were supposed to prepare reports and submit to the Board and issue recommendations from monitoring and evaluation for improvements.

Similarly, the Roads Fund was expected to conduct follow up on implementation of recommendations from monitoring reports and Value for Money Audits. However, through review of documents and interviews held with the officials the Audit Team found the following shortfalls:

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#### 4.5.1 Ineffective Planning for Monitoring and Evaluation of TANROADS Performance of in the Maintenance of Roads

*Does MoWT effectively plan for monitoring and evaluation of the performance of TANROADS with Regards to Roads maintenance activities?*

Regulation 15 of the Road and Fuel Tolls Regulations, 2016 states that the Permanent Secretary of the Ministry Responsible for Works shall monitor road works executed by the TANROADS and prepare a report to be submitted to the Board. In addition, the Ministry is mandated to oversee roads maintenance activities by TANROADS and measure the performance of RFB with respect to its financing capacity. Moreover, the MoWT's Operation Plan of 2017/18-2020/21 instructed MoWT to support Roads Monitoring and Evaluation activities, review of sectoral database, and ensure preparation of Ministerial Monitoring and Evaluation Guidelines and Ten years National Road Master Plan (2017/18 - 2016/27).

However, the Audit Team noted that, MoWT ineffectively plan for monitoring and evaluation of the performance of TANROADS and RFB as institutions responsible for implementing and financing the roads maintenance activities respectively.

Likewise, through the review of MoWT's Operation Plan of 2017/18 and 2020/21 availed to Auditors, it was noted that the operation plans did not capture issues related to monitoring of roads maintenance activities rather the new construction projects and road safety related activities.

Through interviews held with MoWT's Officials it was revealed that, the maintenance activities are not included in the Ministry's operation plans since such activities are monitored by RFB and managed by TANROADS. We are of the view that, the Ministry has a primary responsibility in monitoring and evaluation and overseeing the performance of institutions or Agencies under its jurisdictions.

This led to inadequate monitoring of performances of Agencies and Department under the MoWT on the management of roads maintenance activities. As a result, roads maintenance activities were not effectively monitored by the MoWT.

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#### 4.5.2 Ineffective Monitoring and Evaluation of TANROADS' Performance by Roads Fund Board

Does RFB effectively monitor and evaluate performance of TANROADS in executing and managing the roads maintenance activities?

Pursuant to Section 5 (4), (c), (d), (g), (h) and (i) of the Road and Fuel Tolls Act CAP 220, the Roads Fund Board is mandated to collect, disburse and monitor the use of the Roads Funds. Section 5(4) (h) (i) of the *Road and Fuel Tolls Act Cap 220, R.E 2006* also requires Road Fund to monitor the use of the funds disbursed to TANROADS, local authorities and other road agencies to ensure that the funds are used for the intended purposes.

Despite efforts by RFB to conduct Value for Money Audit annually as part of monitoring of the executed roads maintenance activities by TANROADS, evaluation of performance was ineffectively done. Out of five (5) financial years (2016/17-2020/21), it was only in Financial Year 2020/21 that the RFB conducted one evaluation of Implementing Agencies performances.

Moreover, from the reviewed, Technical Audit reports of 2016/17-2020/21 as part of monitoring tools, the Audit Team noted that monitoring was just done on the implementation of roads maintenance projects with exception of evaluation on performance of TANROADS on maintenance of roads. This was contrary to The RFB's Strategic Plan of 2016/17-2020/21 and RFB's Business Plan of 2021 which show that one of its *objectives in part E*; was to enhance M&E on revenue collection and funds utilisation.

Review of evaluation report about the implementing Agencies of May 17, 2021, indicated that, it was important to emphasize the need for the RFB to effectively utilise monitoring and evaluation system as part of its efforts to enhance management of funds in roads maintenance activities. In addition, such report insisted that, there was need for intensive short course- capacity building training on the monitoring and evaluation systems to all RFB staff.

Moreover, the Audit Team also noted that, RFB underperformed on set targets as per *Objective E*; of the RFB's Strategic Plan of 2016/17-2020/21 regarding enhancement of monitoring and evaluation of revenue collection and funds utilisation. This implies that, the monitoring and evaluation and

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reporting framework and monitoring and evaluation processes were still not strengthened.

Furthermore, reviews of Roads Funds Evaluation Reports of 2019/20 indicated that Monitoring and Evaluations was effectively started on 2018/19. The report indicated that the overall achievement of Roads Fund Board towards set targets in the Strategic Plan 2016/17-2020/21 was low by 16 percent, while the capacity in funding of Roads Maintenance Activities was 49 percent.

A review of RFB's Annual Reports of 2016/17-2018/19 indicated that, monitoring on utilisation of Fund for 10 Regions was achieved by 10 percent. In addition, monitoring was only done in 10 out of 26 regions in the country equivalent to 38 % of the monitored Regions. However, we also noted that, only 1 evaluation session on Performance of the implementing agencies was conducted.

This implies that, TANROADS had inadequate capacity for conducting the M&E. The evidence for this argument by the Audit Team were derived from the interviews held with RFB's Officials responsible for monitoring and evaluation in the Board. This was because of low priorities given by RFB on evaluation of performances of implementing agencies as compared to monitoring of maintenance roads by RFB. The M&E Directorate was also established late. This affected conduct of monitoring and evaluation activities on performance of RFB and TANROADS in execution of roads maintenance activities in line with their respective Strategic Plans.

#### **4.5.3 Inadequate Follow -up of Recommendations by the Roads Fund Board**

*Does MoWT and RFB frequently conducted follow-ups on the implementation of recommendations issued to TANROADS for improving its performance on roads maintenance activities?*

Section 2.6. 5 of RFB's Strategic Plan 2016/17-2021 indicated among the ways to address the challenges in management of roads maintenance activities is to conduct of follow-ups on implementation of a technical audit recommendations and those from monitoring and inspection reports. However, the Audit Team noted that, RFB lacked follow-up reports on how

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the M&E recommendations and especially on Value for Money audit conducted by Road Fund Boards were implemented.

It was learned that the RFB failed to conduct monitoring and follow-up for the issued recommendations due to delay in establishment of the M&E Department. The Audit Team further learned that for the past five years, the Board had only on key personnel and did not have the M&E framework. In addition, the Board did not have adequate resources for conducting the follow-up visits to ascertain itself on how the recommendations were implemented.

As a result, the follow-ups of the recommendations issued for the purpose of addressing the observed shortfalls and improving the execution of maintenance activities and utilisation of roads maintenance funds by Implementing Agencies were not done.

#### **4.5.4 Monitoring and Evaluation Did Not Adequately Address Maintenance of Roads Challenges**

*Do conducted monitoring and evaluation address the existing challenges on the road's maintenance of works?*

Regulation 14(1), of the Road and Fuel Tolls Regulations, 2016 states that the Board shall monitor the use of funds disbursed to TANROADS or Road Agencies for the purpose of ensuring that the funds are used for the set objectives.

Hence it was expected that, the monitoring, and evaluations to a large extent to address the existing challenges regarding the maintenance of roads in the country. However, through review of Monitoring Reports of 2016/2017-2020/21, the Audit Team noted that, the conducted motoring activities focused only on utilisation of funds and did not address other existing challenges such as; inadequate number of staff, ineffective use of Road Asset Management System (RMMS), the tool which is used for budgeting and planning for maintenance, lack of (bridge, pavement and Traffic) management systems which could have been used for planning as required by sub-regulation 3(3) Roads and Fuel Tolls Regulation of 2016 .

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Similarly, the issues regarding challenges on road maintenance were not captured during the conduct of the monitoring activities. Furthermore, review of Value for Money Audits from 2016/17 to 2019/2020 conducted by RFB showed that, the only covered aspect was the project execution. As a result, challenges regarding maintenance of roads in the country that could have been addressed through the conducted monitoring activities are still at large.

#### **4.5.5 Inadequate Follow -up of Issued Recommendations by MoWT**

It was expected Roads Fund Board to conduct follow-ups on implementation of issued recommendations. However, Road Fund Board did not frequently conduct follow-ups on issued monitoring and evaluation recommendations. The reason provided by Roads Fund Board Officials was due to lack of human resources for follow-ups.

Through interviews held with Roads Fund Boards Officials responsible for monitoring and evaluation the audit revealed that, no follow-ups were made or reported concerning implementation of recommendations issued to implementing Agency on execution of road maintenance activities. However, there were no evidence provided on implementation of recommendation given to TANROADS. As a result, there was no feedback given on improvement of noted recommendations on issued recommendation from different Audits and monitoring and evaluation reports in respect to maintenance of roads in the country.

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## CHAPTER FIVE

### AUDIT CONCLUSION

#### 5.1 Introduction

This chapter presents conclusions of the audit categorized into two main parts namely, overall and specific audit conclusions. The conclusions are based on both the overall and specific objectives of the audit presented in Chapter One of this report.

#### 5.2 Overall Conclusion

Based on the obtained findings, the audit acknowledges the efforts by the MoWT through TANROADS towards improvement of the road's maintenance activities in the country. However, more interventions are still needed to further promote management of the road's maintenance projects in the country.

Despite the existing efforts the audit noted a number of weaknesses which lead to the conclusion that the Ministry of Works and Transport through TANROADS has failed to manage execution of roads maintenance works effectively so as to maintain their expected life span. This conclusion is because only 38% of roads in the country were found to be in good condition, while the remaining 62% were either in fair or poor conditions, of which 12% to 14% of roads were in poor condition and were not passable in all-weather conditions. Ineffective planning for the maintenance of roads, ineffective coordination as well as delays in conducting both preventive and periodic maintenance of roads were the main causes for having roads with poor conditions.

Likewise, inadequate disbursement of funds for the maintenance of roads and ineffective utilization of available resources for the maintenance of roads the financial, and technological, such as Road Maintenance Management System and human resources affected the performance of TANROADS to effectively manage road maintenance activities.

Moreover, inadequate capacity of Roads Fund Board to finance maintenance activities was one of the major causes to premature deterioration of roads due to delays/deferment of road maintenance works which led to farther

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deterioration of road condition. As a result, the Government has been spending excess amount to reconstruct or rehabilitate road sections after deteriorating to poor condition due to lack of timely and adequate maintenance. This is evidenced by the Government spent TZS 1,284.5 Billion to reconstruct or rehabilitate 13 road sections instead of TZS 250 Billion that was initially required to maintain those road sections. This led to excess use of TZS 1,034.5 Billion as indicated in Annual Progress Reports of TANROADS published on the period between 2016/17 and 2020/21.

Thus, Roads Fund Board need to have an effective financing strategy to ensure availability of adequate funds that correspond to the increased road network and proportional to the rate of increasing maintenance funds.

Moreover, TANROADS needs to improve the Road Maintenance Management System to ensure that, it is centralised and captures all aspects for monitoring of roads maintenance projects and ensure that maintenance works are completed on time, planned cost and prescribed quality.

### **5.3 Specific Conclusions**

#### **5.3.1 TANROADS has not Effectively Planned for the Roads Maintenance**

Despite the requirement that TANROADS should have effective planning system for the maintenance of roads by conducting condition and inventory surveys, the same has not been established in the Agency.

The Audit noted that TANROADS failed to ensure that various roads defects were attended on time and immediately after they happen. One of the main reasons for this problem is the tendency by TANROADS to work based on the annual plans which are basically reactive in nature, instead of the medium-term plans, which could help in forecasting the defects and prepare counteracting measures proactively.

The Performance Based Management and Maintenance of Roads (PMMR) has not yet been effectively adopted throughout the country to ensure that road maintenance activities are planned and executed on time to ensure that roads are passable in all-weather conditions. This is because PMMR is applied after the roads have received Initial Rehabilitation which requires substantial amount of funding to upgrade the roads to good condition.



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Moreover, TANROADS did not effectively use Road Asset Maintenance System(s) to ensure that actual roads maintenance needs are established and planned accordingly. Also, the current RMMS system used by TANROADS lacked modules to sufficiently capture bridge and pavement maintenance aspects. Generally, budgeting for maintenance has been done without considering the impact of traffic and in-depth investigations of defects prior to the allocation of funds.

Moreover, the constraint budget did not match with actual maintenance needed because the provided maintenance budget ceiling has not been reflecting the planned maintenance activities. Consequently, TANROADS has not been achieving its planned maintenance targets as actual and executed maintenance activities did not reflect the actual maintenance needs. As a result, TANROADS has a huge maintenance back-log which has been rolled-over to next financial year maintenance budget.

Furthermore, TANROADS lacked sufficient coordination mechanism to ensure that stakeholders such as Ministry Department Agencies (MDAs), Development Partners, Parliament, Service provider, Regulatory Institutions, Professional Boards, Mass Media, Financial Institutions, Higher Learning Institutions and Road Users, are adequately involved in the planning of the maintenance of roads. As a result, there has been poor involvement and contribution of stakeholders in the planning for maintenance of roads.

### **5.3.2 Ineffective Funding for Road Maintenance Projects**

Funding of roads maintenance activities in the country is ineffective. Roads Fund Board had low capacity to finance the roads maintenance activities. On average, the Road Funds Board could finance 42% of the needed maintenance of roads. The ability to fund maintenance needs was noted to drop from 49% in financial year 2016/17 to 42% in the financial year 2020/21. This is because Roads Fund Board had ineffective strategies and plans to ensure availability of adequate funds for maintenance of roads. It was further noted that the efforts by Roads Fund Boards for identifying more sources of fund for the maintenance of Regional and Trunk roads had never been successful. As a result, RFB is currently relying on one source of funds.

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Moreover, the maintenance ceiling budget had not significantly increased from the financial year 2016/17 to 2020/21. The constant ceiling led to low capacity of Roads Funds Board to finance the roads maintenance activities. It was generally noted that the financial needs were higher than the available funds conversely to increase of road network. Therefore, there was a huge maintenance back-log because of inadequate funds for the past five years. It was found that the country faced financing gap by 65%.

The deficit increased built-up a maintenance back-log both physical and financial which rolled over and demand for more level of maintenance intervention by reconstruction or rehabilitation. Similarly, the value of fuel levy per litre had been decrease overtime. The fall of the value of fuel levy rate decreased from TZS 263 to TZS 180.4 equivalent to 31.4% as of July 2020. This was due to inflation which reduced the capacity of Road Fund Board to finance maintenance activities.

### **5.3.3 TANROADS has not Ensured Maintenance of Roads are Effectively Done within the Planned Time, Cost and Quality**

This was because the completion of maintenance projects was delayed for the period ranging between 29 to 230 days. These delays, led to untimely maintenance of roads which then found to be in poor conditions are demanded more maintenance funds.

Moreover, MoWT did not ensure maintenance projects commence on time by establishing mechanism for obtaining Government Notice (GN) for VAT exemption prior to the commencement. There has been a considerable long time ranging from 36 to 461 days waiting for GN to be released before the commencement of project.

Similarly, TANROADS did not adequately complete road maintenance projects within the planned cost. This was because 29 out of 1811 maintenance projects experience cost overrun by 2%.

Likewise, TANROADS had no mechanism for quality control and assurance of the ongoing road maintenance projects. Similarly, TANROADS had a deficit of Engineers to carry out periodical inspections to ensure that maintenance projects are completed within prescribed quality.

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#### **5.3.4 TANROADS has not Effectively Supervised and Monitored Roads Maintenance Activities**

It is concluded that TANROADS has not effectively supervise and monitor maintenance of roads in the country. This was reflected on low capacity of TANROADS in inspecting, monitoring and supervising the ongoing road maintenance projects. As a result, roads maintenance projects were not completed within the planned time, cost and quality.

Ineffective supervision and monitoring were also due to shortage of professional staff by 59% and lack of transport facilities to facilitate supervision of the maintenance projects.

#### **5.3.5 MoWT and RFB has not Adequately Monitor and Evaluate the Performance of TANROADS**

The audit found out that Performance of TANROADS on the management of roads maintenance was not periodically monitored by both MoWT and RFB. This was partly due to inadequate plan for monitoring and evaluation of management of road maintenance activities executed by TANROADS.

Moreover, RFB did not strengthen its M&E by improving the reporting framework and strengthen monitoring and evaluation process. This affected its capacity to monitor and evaluate the utilised funds by Implementing Agencies as well as road maintenance activities. RFB did not to cover 62% (10 out of 26 Regions) of TANROADS Regional Offices in its monitoring and evaluation programmes conducted to assess the utilisation of roads maintenance.

Furthermore, MoWT and RFB did not conduct follow-ups on the recommendations from the monitoring and evaluation reports. It was realised that MoWT had insufficient M&E framework. As a result of this monitoring and evaluation activities were conducted effectively. Moreover, the issued recommendations did not address the existing challenges for planning and execution of maintenance activities. The M&E reports did not cover issues regarding planning for the maintenance of roads by the Implementing Agencies specifically on weaknesses found in the Road Asset Management System (RAMS).

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## CHAPTER SIX

### AUDIT RECOMMENDATIONS

#### 6.1 Introduction

This chapter provides recommendations to the Ministry of Works and Transport through RFB and TANROADS regarding the management of maintenance of roads in the country.

The audit findings indicated areas that need further corrective actions for effective management of road maintenance activities. These areas include planning, funding, procurement, execution of maintenance in respect to (time, cost and quality), monitoring and supervision, as well as monitoring and evaluations of performance of TANROADS in execution of maintenance activities.

Based on the principles of 3E's of economy, Efficiency and Effectiveness; the National Audit Office believes that these recommendations need to be fully implemented to ensure improvements in the management of maintenance of roads in the country.

#### 6.2 Recommendations to the Ministry of Works and Transport

##### 6.2.1 To Improve Periodical Evaluation of TANROADS' Performance on the Management of Maintenance Works

*The Ministry of Works and Transport is urged to:*

1. Establish a mechanism for periodical evaluation of performance of TANROADS on the management of roads maintenance activities;
2. Ensure approvals of relevant manuals and guidelines to facilitate road maintenance programmes;
3. Coordinate with other line Ministries and Agencies to ensure laws and regulations on revenue collection are harmonised, allowing the RFB to diversify sources of funding for road maintenance as per agreed strategies; and

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4. Coordinate with other Ministries and Agencies to ensure compliance with all governing policies, laws, legislations, regulation, and guideline, relevant to the sector, specifically for effective and efficient implementation of road maintenance works.

## **6.3 Recommendations to TANROADS**

### **6.3.1 To Ensure Effective Planning for the Maintenance of Roads**

*The Management of TANROADS is urged to:*

1. Ensure that Road Asset Management is developed and is always functioning. This will involve upgrading, operationalization, and centralisation of RMMS to ensure that it includes all aspects deemed necessary for planning, budgeting and implementation of road maintenance programmes;
2. Ensure that all Manuals and Guidelines for roads maintenance are approved and adhered to by putting them into use;
3. Collaborate with PPRA to realign TANEPS Tender evaluation systems to conform to PPRA guidelines and improve utilisation of the TANEPS system to reduce backlog of tender evaluation, and improve efficiencies in the tender approval processes; and
4. Improve coordination mechanisms with MoFP in ensuring that works that require GN for VAT exemptions are communicated in advance to reduce delays in undertaking and completing maintenance works.

### **6.3.3 To ensure Road Maintenance Works are Effectively Completed in Planned Time, Cost and Meet the Required Quality**

*The Management of TANROADS is urged to:*

1. Develop a strategy that will guide and ensure that Road Maintenance projects are completed within planned time, cost and prescribed quality; and

- 
2. Establish the system for Quality Management of roads maintenance projects and ensure that adhered to.

#### **6.3.4 To improve Effectiveness of Supervision and Monitoring of Roads Maintenance Activities**

*The Management of TANROADS is urged to:*

1. Prepare adequate plan(s) for supervision, inspection and monitoring of the ongoing road maintenance projects. The plan should include the inspection checklist, inspection test plan and reporting for maintenance project to ensure that specifications and quality of executed work is met;
2. Provide adequate resources such as staff and working tools to ensure smooth supervision and monitoring of road maintenance projects in the country. The allocation of resources (staff and working tools) should be based on pre-determined needs from the respective TANROADS' Regional Offices;
3. Enhance the mechanism for handing over-maintenance projects and ensure that it is adhered to; and
4. Improve coordination mechanisms with MoFP to ensure that works that require GN for VAT exemptions are communicated in advance to reduce delays in maintenance works.

#### **6.4 Recommendation to Roads Fund Board through Ministry of Works**

##### **6.4.1 Adequacy of Roads Maintenance Funds**

*The Ministry of Works and Transport is urged to ensure Road Fund Board:*

1. Prepare the strategies, plans and other sources of funds to ensure adequacy of Funds for Maintenance of Roads in the country;
2. Fully and timely disburse the road maintenance funds and effectively monitor their utilisation; and

- 
3. Has monitoring and evaluation plan for TANROAD'S Performances on the Maintenance of Roads. The plan should include evaluation of TANROADS' resources (staff, funds, and equipment), at all stages of roads maintenance.



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  21. Ministry of Works and Transport (2017/18 - 2020/21); Operation Plan.
  22. Roads Funds Board 2019/20, Evaluation Reports
  23. TANRAODS (2007), Road Maintenance Handbook Volume (ii) Part (iii) Executive Agency

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## APPENDICES



## Appendix One (a): Responses from the Ministry of Works and Transport

This part covers the responses from the audited entity namely the Ministry of Works and Transport as Well as TANROADS as implementing Agency of Road Maintenance. The responses are divided into two i.e., general comments and specific comments for each of the issued audit recommendations. This is detailed in below:

### A: Overall responses

The Ministry of Works and Transport (Works) appreciates the audit which has the aim of highlighting shortfalls on management of maintenance of roads. We assure you, that all the recommendations raised will be fully implemented.

### B: Specific Responses

No	Recommendation	MoWT Comment (s)	Action(s) to be taken	Timeline
<b>To improve periodical evaluation of TANROADS' Performance on the Management of Maintenance Works : The Ministry of Works and Transport is Urged to:</b>				
1	Establish a mechanism for periodical evaluation of the performance of TANROADS on the management of maintenance of roads in the country and include these in their M&E performance indicators	MoWT (W) carries out quarterly monitoring of Maintenance activities carried out by TANROADS. However detailed M&E is carried out by RFB who enters into Annual Performance Agreement (APA) with TANROADS every year and asses them according to agreed performance indicators.	The Ministry will establish Mechanism for periodic evaluation of performance of TANROADS AND RFB.	1 year By April, 2023
2	Ensure approvals of relevant manuals and	The Ministry issues Guidelines, and policies. Manuals	MoWT (W) will follow up and remind Agencies	1 year By April, 2023

No	Recommendation	MoWT Comment (s)	Action(s) to be taken	Timeline
	guidelines to facilitate implementations of road programmes	to facilitate implementation are within Agencies jurisdiction.	to finalize any Manual which is not yet approved.	
3	Coordinate with other line Ministries and Agencies to ensure laws and regulations on revenue collection are harmonised, allowing the RFB to diversify sources of funding for road maintenance as per agreed strategies	The Auditors recommendation has been noted.	MoWT (W) will continue to propose sources of revenue for Road maintenance and also recommend existing ones to be redirected accordingly e.g. Tozo, Vehicles registration etc.	Continuous process
4	Coordinate with other Ministries and Agencies to ensure compliance with all governing policies, laws, legislations, regulation, and guideline, relevant to the sector, specifically for effective and efficient implementation of road maintenance works	The Auditors recommendation has been noted.	Ministries has already initiated coordination with other Ministries such as Ministry of Minerals on royalties charged to contractors on gravel, other ministries include Ministry of Water and TAMISEMI.	Continues process

No	Recommendation	MoWT Comment (s)	Action(s) to be taken	Timeline
<b>Adequacy of Roads Maintenance Funds: The Ministry of Works and Transport is urged to ensure ROADS FUND BOARD to:</b>				
1	Prepare the strategies, plans and other sources of funds to ensure adequacy of funds for maintenance of roads in the country	The Ministry agrees with the recommendation. The Roads Fund Board to be asked to prepare the strategies and plans to ensure adequacy of funds for roads maintenance.	Preparation of strategies and plan to enhance adequacy of funds for roads maintenance.	June, 2022
2	Fully and timely disburse the road maintenance funds and effectively monitor their utilisation	Actual amount of disbursements of funds depend on annual collections. However, often actual annual collections are less than annual budgets. Therefore, actual disbursements are less than Agencies' budgets. Monthly collections are timely disbursed to Road Agencies within five days. The only delays are with respect of June collections.	To follow-up with Ministry of Finance and Planning to ensure June collections are timely transferred to Roads Fund account and timely disbursed to Road Agencies.	June, 2022
3	Has monitoring and evaluation plan for TANROAD'S Performances on the Maintenance of Roads. The	TANROADS' performance in management of road maintenance is carried out by Roads Fund Board on annual basis.	The Ministry to ensure RFB conducts and evaluates TANROADS' performance and effective	Annually, continuously

No	Recommendation	MoWT Comment (s)	Action(s) to be taken	Timeline
	plan should include evaluation of TANROADS' resources (staff, funds and equipment), at all stages of roads maintenance		implementation of recommendations from the monitoring and evaluation reports.	

## Appendix One (b): Responses from the TANROADS

### A: Overall Responses

We thank the Audit Team for their maximum cooperation for being ready to discuss and incorporate our responses. Our overall Responses covers the following:

This is in consideration that there is road management systems in place which needs some improvements such as obtaining adequate technical staff and supervision tools/equipment Improvement of planning/monitoring software such as web based RMMS integrated with pavement and bridge activities. The delayed execution due to delays in obtaining the VAT exemption whereby Contractors were not allowed to commence the works prior to obtaining of the same has severely affected the effective and timely implemented maintenance programme.

Further, the issue of underfunding of maintenance works, in addition to the same not fully released should be solved to avoid unnecessary backlog maintenance. TANROADS will continue to improve monitoring to ensure effective supervision of the Roads Maintenance Project. This includes the use of stage approval for maintenance activities and payment of works made according to the measurement sheets.

TANROADS will continue to enhance the use of the laboratories for material testing and ensure the supervisors of the Road Maintenance Projects are properly monitoring the works. Further, TANROADS will continue to build capacity of its staff who are involved in managing quality of works.

TANROADS will also continue to enhance use of the laboratories for material testing and ensure the supervisors of the Roads Maintenance Project are properly monitoring the works. Further TANROADS will continue to build capacity to staff who are involved in quality control of works.

All recommended issues will be implemented as per proposed timeline

## B: Specific Responses

No	Recommendation	TANROADS Comment (s)	Action(s) to be taken	Timeline
<b>To ensure Effective Planning for the Maintenance of Roads: The Management of TANROADS is Urged to:</b>				
1.	Ensure that Road Asset Management is developed and is always functioning. This should involve upgrading, operationalization and centralisation of RMMS to ensure that it includes all aspects for planning, budgeting and implementation of maintenance of roads	TANROADS has already initiated process for upgrading of RMMS into a fully intergraded a web-based Road Asset Management System (RAMS)	It is under procurement waiting for negotiation.	Three Years April 2022 to April 2025
2.	Ensure that all Manuals and Guidelines for roads maintenance are approved and adhered to by putting them into use.	The Auditors recommendation has been noted.	TANROADS will continue to ensure that all Manuals and Guidelines for roads maintenance works are put into use and adhered to. However, the few unapproved ones will be circulated to CE for approval	Two years April 2022 to April 2024
3.	Collaborate with PPRA to realign TANePS Tender evaluation systems to conform to PPR guidelines and improve utilisation of the TANePS system to reduce back-log of tender	The Auditors recommendation has been noted.	TANROADS will liaise with PPRA to implement the Auditors recommendation	Three Years April 2022 to April 2025

No	Recommendation	TANROADS Comment (s)	Action(s) to be taken	Timeline
	evaluation, and improve efficiencies in the tender approval processes.			
4	Improve coordination mechanisms with MoFP/TRA ensuring that works that require VAT exemptions are communicated in advance to reduce delays in undertaking and completing maintenance works	The Auditors recommendation has been noted	TANROADS has already initiated coordination mechanisms with TRA, which lead to TRA to introduce the system in order to facilitate the online application of the VAT exemption, which will automatically reduce delays in maintenance work	Continuous process
<b><i>To ensure Road Maintenance Works are Effectively Completed in Planned Time, Cost and meet the Required Quality: The Management of TANROADS is Urged to:</i></b>				
5	Develop a strategy that will guide and ensure that Road Maintenance projects are completed within planned time, cost and prescribed quality	The Auditors recommendation has been noted	Strategies to include: - a) Fasten procurement procedures and fast track improvement of TANePS operations b) Early online application of the VAT exemptions c) Capacity building to Contractors and Supervisors	Three Yrs.  April 2022 to April 2025
6	Establish the mechanism for Quality Management	TANROADS has established laboratories in	TANROADS will continue to enhance use of the	Three Yrs



No	Recommendation	TANROADS Comment (s)	Action(s) to be taken	Timeline
	of roads maintenance projects and ensure that adhered to it	all 26 Regions and centralised Development and Research Unit (DRU) which are used for quality control of materials used for Roads Maintenance Works. The quality control of the Roads Maintenance Works is daily monitored by the Technicians, Maintenance Engineers and Project Engineers	laboratories for material testing and ensure the supervisors of the Roads Maintenance Project are properly monitoring the works. Further TANROADS will continue to build capacity to staff who are involved in quality control of works	April 2022 to April 2024
<b>To improve Effectiveness of Supervision and Monitoring of Roads Maintenance Activities: The Management of TANROADS is urged to:</b>				
7	Prepare adequate plan(s) for supervision, inspection and monitoring of the ongoing road maintenance projects. The plan should include the inspection checklist, inspection test plan and reporting for maintenance project to ensure that specifications and quality of	The quality control of the Roads Maintenance Works is daily monitored by the Technicians and Project Engineers. This includes stage approval of maintenance activities specially prepared format for managing the contracts eg	TANROADS will continue to improve monitoring to ensure effective supervision of the Roads Maintenance Project. This include use of stage approval for maintenance activities and payment of works made according to the measurement sheets.	Three Yrs April 2022 to April 2025

No	Recommendation	TANROADS Comment (s)	Action(s) to be taken	Timeline
	executed work is met	prior to application of gravel material, stage approval obtained for correct road formation is compulsory		
8	Provide adequate resources such as staff and working tools. for the supervision and monitoring of road maintenance projects in the country The allocation of resources (staff and working tools) should be based on pre-determined needs from the respective TANROADS' Regional Offices	The Auditors recommendation has been noted.	TANROADS will continue to remind for approval for recruitment of staff assessed requirements. Also funds will be requested to enhance the working tools requirements.	Three years
9	Enhance the use of the available mechanism for handing over-maintenance works project and ensure it is adhere to	The Auditors recommendation has been noted.	TANROADS will continue to issue substantial completion certificates and practical completion certificates after attendance of all snag lists during the Defect Liability Period.	Two years

## Appendix Two: Main Audit and Sub Questions

Prominence	Audit Question and Sub-audit Question No.	Audit Question and Sub-audit Questions
Existence of the Problem	<b>Audit Question 1</b>	<b><i>To what extent roads with poor condition exists in the country?</i></b>
	Sub-question 1.1:	<i>What is the condition of roads in the country?</i>
	Sub-question 1.2:	<i>What roads are in good or poor conditions?</i>
	Sub-question 1.3:	<i>What road networks are badly affected?</i>
	Sub-question 1.4:	<i>What are the ranks of roads condition severity?</i>
Planning for Roads Maintenance	<b>Audit Question 2</b>	<b><i>Are maintenance activities being planned effectively?</i></b>
	Sub-question 2.1:	<i>Are there functioning system for establishing with reasonable accuracy needs for roads maintenance?</i>
	Sub-question 2.2:	<i>Does TANROADS effectively use the available maintenance planning system to capture condition of roads in the country?</i>
	Sub-question 2.3:	<i>Is there a coordination mechanism in place to ensure that stakeholders are adequately involved in the planning to support efficient/effective maintenance of roads?</i>
	Sub-question 2.4:	<i>Does TANROADS effectively plan for resources (skilled personnel, funds and tools) to facilitate road maintenance works in the country?</i>
	Sub-question 2.5:	<i>Does TANROADS assess the adequacy of roads design before execution of maintenance activities?</i>
	Sub-question 2.6:	<i>Does TANROADS effectively prepare standards and specifications for maintenance of roads before execution of maintenance activities?</i>
	Sub-question 2.7:	<i>Is there a functioning mechanism to ensure that procurement of road maintenance works is effectively done in accordance with the Public Procurement Act and its Regulations?</i>
	Sub-question 2.8:	<i>Is the procurement of road maintenance activities being effectively conducted?</i>
	Sub-question 2.9:	<i>Does TANROADS ensure awarded contractors have the capacity to execute road maintenance works?</i>
Funding for Roads Maintenance	<b>Audit Question 3</b>	<b><i>Is the funding for the maintenance of roads being effectively done?</i></b>
	Sub-question 3.1:	<i>Does the available funds match with the required budget for road maintenance in the country?</i>
	Sub-question 3.2:	<i>Does the Roads Fund Board have effective strategies and plans to ensure availability of suitable and</i>

Prominence	Audit Question and Sub-audit Question No.	Audit Question and Sub-audit Questions
		<i>sufficient funds for financing roads maintenance activities?</i>
	<i>Sub-question 3.3:</i>	<i>Does RFB allocate and disburse adequate roads maintenance funds to respective implementing agencies timely so as to facilitate effective implementation of road maintenance activities?</i>
	<i>Sub-question 3.4:</i>	<i>Does RFB have an effective mechanism to ensure funds for road maintenance are disbursed in accordance with the Road and Fuels Tolls Regulation?</i>
Contracts Management (Implementation )	<b>Audit Question 4</b>	<b>Does the Implementing Agency (TANROADS) adequately manage road maintenance works within the planned time, cost and quality?</b>
	<i>Sub-question 4.1:</i>	<i>Are the roads maintenance works implemented within the agreed time, cost and quality?</i>
	<i>Sub-question 4.2:</i>	<i>Does TANROADS have effective mechanism to ensure roads maintenance works are executed within the planned time, cost and meet the required quality, specifications and standards?</i>
	<i>Sub-question 4.3:</i>	<i>Does TANROADS have quality control and quality assurance plans at all stages of roads maintenance contract?</i>
	<i>Sub-question 4.4</i>	<i>Is the mechanism for closure and completion of the executed roads maintenance works functioning well?</i>
Monitoring and Evaluation	<b>Audit Question 5</b>	<b>Does road maintenance works effectively being supervised and monitored by TANROADS?</b>
	<i>Sub-question 5.1</i>	<i>Does TANROADS have in place effective plan for supervising and monitoring roads maintenance activities?</i>
	<i>Sub-question 5.2</i>	<i>Does TANROADS conduct inspections and supervision of on-going roads maintenance activities effectively to ascertain the Value for Money?</i>
	<i>Sub-question 5.3</i>	<i>Do they conducted monitoring and evaluations address the existing challenges on the maintenance of roads works?</i>
	<i>Sub-question 5.4</i>	<i>Does TANROADS efficiently use the available resources (staff, tools and plans, inspection checklist and test checklist) to ensure maintenance activities are adequately supervised and monitored?</i>

Prominence	Audit Question and Sub-audit Question No.	Audit Question and Sub-audit Questions
	<i>Sub-question 5.5</i>	<i>Does MoWT through Roads Fund Board ensure funds for maintenance of roads are effectively utilized exclusively for intended purposes?</i>
Measurement of Performance	<b>Audit Question 6</b>	<b>Is the performance of TANROADS on the maintenance of roads being periodically monitored?</b>
	<i>Sub-question 6.1</i>	<i>Does MoWT and Road Fund Board have effective plan for monitoring and evaluation of the performance of TANROADS regarding to roads maintenance activities?</i>
	<i>Sub-question 6.2</i>	<i>Does MoWT and RBF effectively monitor and evaluate the performance of TANROADS to regarding to roads maintenance activities?</i>
	<i>Sub-question 6.3</i>	<i>Does MoWT and RFB frequently conduct follow-ups on the implementation of recommendations issued to TANROADS for improving its performance on roads maintenance activities?</i>



## Appendix Three: Selection and Visited of Regions

### Appendix Three (a): Selection of Regions Based on Released Maintenance Fund to TANROADS

REGION	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
	TZS in Millions	TZS in Millions	TZS in Millions	TZS in Million	TZS in Millions
ARUSHA	11,298.89	14,668.71	14,127.76	13,504.07	13,458.49
COAST	11,078.35	23,061.49	19,409.96	22,094.42	23,295.43
DSM	31,218.46	31,516.97	26,302.15	26,618.71	26,822.53
DODOMA	14,949.46	19,176.17	18,469.02	18,194.02	18,647.82
GEITA	10,593.25	14,778.13	13,967.24	13,039.71	12,552.49
IRINGA	8,631.24	14,359.35	13,829.82	13,177.92	13,605.08
KAGERA	10,196.91	14,180.90	13,660.86	13,706.59	25,927.66
KATAVI	7,741.00	12,434.48	11,975.99	13,143.30	13,084.45
KIGOMA	12,049.85	17,637.25	16,986.26	16,490.95	16,472.02
KILIMANJARO	14,305.05	16,292.72	15,532.74	14,600.49	14,722.71
LINDI	9,646.76	15,192.90	14,125.30	13,935.69	13,893.72
MANYARA	9,083.28	14,039.96	14,100.09	13,202.27	14,858.87
MARA	15,195.44	21,501.70	21,029.33	21,552.42	21,493.54
MBEYA	11,266.30	15,118.03	14,560.52	14,328.24	14,204.01
MOROGORO	9,681.90	26,253.88	25,284.13	24,480.46	24,813.47
MTWARA	17,841.54	18,334.96	17,658.82	16,509.99	16,438.510
MWANZA	11,758.64	17,036.73	16,408.12	15,000.12	14,830.44
NJOMBE	9,874.56	15,657.05	15,013.56	13,843.85	12,488.12
RUKWA	9,474.26	13,892.64	12,495.69	12,853.87	11,069.99
RUVUMA	14,776.81	20,633.47	19,844.57	19,105.21	19,842.63
SHINYANGA	9,242.32	13,881.83	13,605.89	13,438.29	13,461.61
SIMUYU	8,559.38	11,461.47	11,038.81	10,923.03	11,443.49
SINGIDA	15,398.58	18,339.63	17,656.51	16,836.17	19,263.44
SONGWE	-	10,114.25	10,214.31	10,051.42	11,682.23
TABORA	10,909.41	20,140.01	21,633.23	21,173.12	22,646.01
TANGA	9,687.37	14,672.76	14,131.65	13,421.30	13,487.13

## Appendix Three (b): Selection of Regions to be Visited Based on Road Network and

Region	Trunk Roads (Km)			Regional Roads (Km)			Other Roads (Km)			Total
	Paved	Unpaved	Total	Paved	Unpaved	Total	Paved	Unpaved	Total	
ARUSHA	367.97	212.85	580.82	50.73	843.82	894.55	0.00	0.00	0.00	41
COAST	503.66	0.00	503.66	39.04	836.71	875.75	0.00	0.00	0.00	54
DSM	119.97	0.00	119.97	230.58	170.17	400.75	42.77	35.75	78.52	39
DODOMA	552.19	0.00	552.19	37.18	1117.85	1155.03	0.00	0.00	0.00	58
GEITA	236.18	0.00	236.18	160.48	451.80	612.28	2.66	76.21	78.87	39
IRINGA	393.48	67.35	460.83	32.18	724.08	756.88	0.00	0.00	0.00	42
KAGERA	630.10	231.49	861.59	144.47	919.28	1063.75	0.00	50.95	50.95	77
KATAVI	162.32	311.39	473.71	29.51	692.08	721.59	0.00	0.00	0.00	19
KIGOMA	301.48	356.42	657.90	0.40	724.13	724.53	0.00	65.00	65.00	30
KILIMANJARO	292.74	0.00	292.74	219.08	543.69	762.77	0.00	0.00	0.00	51
LINDI	347.97	0.00	347.97	48.91	892.61	941.52	0.00	0.00	0.00	39
MANYARA	206.59	0.00	206.59	50.65	1399.75	1450.40	0.00	0.00	0.00	25
MARA	194.00	215.73	409.73	103.34	850.47	953.81	0.00	63.38	63.38	29
MBEYA	353.24	218.30	571.54	80.10	603.83	683.93	0.00	0.00	0.00	43
MOROGORO	464.87	384.55	849.42	167.50	1054.31	1221.81	0.00	0.00	0.00	63
MTWARA	277.64	0.00	277.64	143.77	894.59	1038.36	0.00	0.00	0.00	42
MWANZA	261.86	0.00	261.86	25.74	835.05	860.79	0.00	22.85	22.85	28
NJOMBE	201.37	202.05	403.42	49.84	734.97	784.81	0.00	0.00	0.00	25
RUKWA	298.05	117.81	415.86	76.83	758.15	834.98	0.00	0.00	0.00	37
RUVUMA	702.60	218.38	920.98	31.34	1214.30	1245.64	0.00	0.00	0.00	73
SHINYANGA	225.31	51.79	277.10	31.35	629.40	660.75	0.00	65.10	65.10	25

Controller and Auditor General

Region	Trunk Roads (Km)			Regional Roads (Km)			Other Roads (Km)			Total
	Paved	Unpaved	Total	Paved	Unpaved	Total	Paved	Unpaved	Total	Paved
SIMIYU	212.26	120.78	333.04	11.32	514.19	525.51	0.00	66.99	66.99	22
SINGIDA	430.18	242.69	672.87	58.55	984.70	1043.25	0.00	0.00	0.00	48
SONGWE	233.63	0.00	233.63	18.29	730.72	749.01	0.00	0.00	0.00	25
TABORA	698.18	268.91	967.09	51.99	1095.23	1147.22	3.00	59.99	62.99	75
TANGA	327.25	0.00	327.25	185.72	1296.33	1482.05	0.00	0.00	0.00	51
Total	8995.09	3220.49	12215.58	2078.89	21512.21	23591.72	48.43	506.22	554.65	111



Controller and Auditor General



#### Appendix Four: Selected and Visited Regions

Zones	Regions covering respective zone	Weather Condition of the zone	Selected Region	Reason for the Selection			
				Road network length (km) (short, medium, long)	Total maintenance funds spent on the past 5 years (Small, Medium, High)	Number of Projects /Contracts (Minimum and Maximum)	Availability of Major Bridges Repair Maintenance conducted
Lake	Mwanza, Simiyu, Mara, Geita, Shinyanga and Kagera	Moderated	Mara	Medium	High	Large	Yes
Northern	Arusha, Kilimanjaro, Manyara and Tanga	Rainy and Partly dry	Manyara	Long	Low	Small	Yes
Southern	Mtwara, Ruvuma and Lindi	Dry	Lindi	Medium	Medium	Large	Yes
Central	Dodoma, Singida and Tabora	Dry	Singida	Long	Medium	Small	Yes
Western	Kigoma, Katavi and Rukwa	Rainy	Katavi	Medium	Low	Small	Yes
Eastern	Dar es Salaam, Pwani and Morogoro	Dry /Moderate	Dar es Salaam/ TANROADS HQ	Short	High	Small	Yes
Southern Highland	Iringa, Njombe, Mbeya	Rainy	Mbeya	Medium	Medium	Small	Yes

Zones	Regions covering respective zone	Weather Condition of the zone	Selected Region	Reason for the Selection			
				Road network length (km) ( <i>short, medium, long</i> )	Total maintenance funds spent on the past 5 years ( <i>Small, Medium, High</i> )	Number of Projects /Contracts ( <i>Minimum and Maximum</i> )	Availability of Major Bridges Repair Maintenance conducted
	and Songwe						

*Source: Auditors' Analysis, 2021*



## Appendix Five: List of Documents Reviewed and Reasons for Reviewing them

Category of the documents	Title of the documents	Reasons for reviewing
Strategies and plans from MoWT	<ul style="list-style-type: none"> <li>• MoWT Strategic Plans 2016/17-2020/21</li> <li>• RFB Strategic Plans 2016/17-2020/21</li> <li>• TANROADS Annual Operation Plans, 2016 -2021</li> </ul>	<ul style="list-style-type: none"> <li>• To assess Plans envisaged on the management of roads maintenance</li> <li>• To assess whether management of maintenance of roads were well planned and budgeted</li> </ul>
Directives from MoWT/RFB/TANROADS	<ul style="list-style-type: none"> <li>• Guidelines, regarding, designing, supervision and inspection on execution of maintenance of Roads</li> </ul>	To assess whether TANROADS conduct periodical supervision, inspections and reports on issues regarding maintenance of roads
Performance Reports from MoWT RFB, TANROAD	<ul style="list-style-type: none"> <li>• MoWT Annual Performance Report for the period 2015/16-2019/20</li> <li>• RFB Annual Performance Reports for the period 2015/16-2019/20</li> <li>• TANROADS annual Reports 2016/17-2020/21</li> </ul>	To assess whether road maintenance activities were planned and budgeted for by TANROADS and RFB
Published Research and Reports on the execution the maintenance of Roads  Researches on collection of Roads and Fuel Tolls	<ul style="list-style-type: none"> <li>• Rationalisation and harmonisation of Transit charges for Road Users from the EAC and SADC, 2020</li> <li>• Report on Assessment of Roads Financing, 2020</li> </ul>	To assess whether identified issues, challenges and bottlenecks in the management of maintenance of roads were captured and addressed by respective Ministries
Performance Reports on the management of maintenance of Roads	<ul style="list-style-type: none"> <li>• Quarterly Progress Reports for Financial Year 2016/17-2020/21</li> <li>• Annual Performance Reports for Financial Year 2016/17-2020/21</li> <li>• Road Reserve Report, 2016/17-2020/21</li> </ul>	To assess the level of performance by relevant entities regarding maintenance of roads in the country
Projects files	<p>Projects Documents 2016/17-2020/21:</p> <ul style="list-style-type: none"> <li>• Drawings, contract documents, Schedule of Materials, Schedule of labour, Minutes of site Meeting, Register of</li> </ul>	To assess whether projects for roads maintenance have been executed as per prescribed quality, on time and planned cost

Category of the documents	Title of the documents	Reasons for reviewing
	Materials, Quality test report, Payment vouchers for Materials and labour, and Progress report	
Other Documents	<ul style="list-style-type: none"> <li>Professional Standards, Standards Procedures, Technical Audit Reports, Good Practices from Academic Studies and Researches in the area of Management maintenance of Roads in the country.</li> <li>Published Journals, Literatures, Newspapers and Circulars in the area of management of maintenance of Roads.</li> </ul>	To obtain general knowledge and learn the best way(s)/ approach on the management of maintenance of roads if when adopted can be easily understood and bring about impact to particular transportation sector

*Source: Auditors' Analysis, 2021*



## Appendix Six: Officials Interviewed During the Main Study

Institution to be Covered	Title of official to be Interviewed	Reasons for interviewing
MoWT	<ul style="list-style-type: none"> <li>• Director of Trunk Roads, Urban and Rural Development</li> </ul>	<ul style="list-style-type: none"> <li>• To assess the implementation status and overall strategies on the management of maintenance of roads</li> <li>• To determine the planned cost for the maintenance of roads and disbursed funds to respective implementing Agencies</li> </ul>
	<ul style="list-style-type: none"> <li>• Director of Maintenance</li> <li>• Director of Monitoring and Evaluation</li> <li>• Director of Planning</li> <li>• Director of Human Resources</li> </ul>	<ul style="list-style-type: none"> <li>• To assess existing problems in the maintenance of roads</li> <li>• To assess the level of implementation of roads maintenance</li> </ul>
ROADS FUND BOARD	<ul style="list-style-type: none"> <li>• Deputy Manager - Resources Mobilisation</li> <li>• Deputy Manager -Finance and Administration</li> <li>• Monitoring and Evaluation Officer</li> <li>• Senior Engineer</li> </ul>	<ul style="list-style-type: none"> <li>• To assess sources of funds for the maintenance of roads</li> <li>• To assess the formula used for disbursement or release of funds</li> <li>• To assess the expenditures of collected and disbursed funds</li> </ul>
TANROADS	<ul style="list-style-type: none"> <li>• Director of Maintenance of Roads</li> <li>• Road Asset Management Engineer</li> <li>• Trunk Roads Engineer</li> <li>• Monitoring and Evaluation Engineer</li> <li>• Director of Business Support</li> <li>• Chief Accountant</li> <li>• Director of Human Resources</li> <li>• Head of Procurement</li> <li>• Manager of Finance and Administration</li> <li>• Manager of Weigh Bridge Operations</li> </ul>	<ul style="list-style-type: none"> <li>• To analyse the adequacy of procedures used for managing roads maintenance activities</li> </ul>
^6 Selected Regions	<ul style="list-style-type: none"> <li>• Regional Managers</li> <li>• Maintenance engineer</li> </ul>	<ul style="list-style-type: none"> <li>• To assess existing problems in the execution of Roads maintenance activities</li> </ul>

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Institution to be Covered	Title of official to be Interviewed	Reasons for interviewing
	<ul style="list-style-type: none"> <li>• Head of Procurement</li> <li>• Site Project Engineers</li> <li>• Material Engineer (s)</li> <li>• Chief Accountant</li> <li>• Head of Weigh Bridge Operation</li> <li>• Head of Planning and Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• To analyse challenges faced during execution of maintenance of roads</li> <li>• To assess planned maintenance activities and their level of implementation</li> <li>• To assess the quality of maintenance Work</li> </ul>

*Source: Auditors' Analysis, 2021*

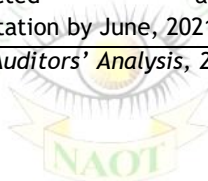


## Appendix Seven: Goals and Objective on Maintenance of Roads in Tanzania

Strategy Plan	Objective of the Plan	Responsible entity
Tanzania Development Vision 2025	The strategic Goal of Tanzania Development Vision 2025 is to foster towards the core sectors that will boost the economic through infrastructure with high quality which withstand the expected intensive economic competition.	Ministry of Finance and Planning
National Five-Year Development Plan 2016/17-2020/21	Tanzania to have 10% of paved roads in fiscal year 2020/21 and 15% of paved roads in fiscal year 2025/26. Target set in the section 4.4.2, table 4.23 of Plan by 2020 for the Tanzania roads to rank 106 in 2020/21 and 102 in 2025/26 out of 189 countries of good roads	TANROADS  Ministry of Works  Ministry of Finance Road Fund Board
Transport Sector Investment Programme Phase 2	The Transport Sector Investment Programme (TSIP) aimed at provision of a critical contribution on achievement of in line with FYDP II and TDV 2025.	TANROADS  Ministry of Works
Roads Fund Board's Five Years Strategic Plan (2016/17-2020/21)	<ul style="list-style-type: none"> <li>To establish two sources of revenue collection by June 2021</li> <li>The Collection of revenue from Road Reserve enforced by June, 2018 as well as Innovation and application and all sources of revenue monitored quarterly by June, 2021.</li> </ul>	
Ministry of Works strategic plan 2016/17-2020/21	<ul style="list-style-type: none"> <li>Facilitate the Rehabilitation of 1,583 km of trunk roads and 8,407 km of regional roads, Facilitate the maintenance of 33,460 km and 3,070</li> </ul>	Ministry of Works

Strategy Plan	Objective of the Plan	Responsible entity
	bridges of the trunk Roads by June 2021	
5TANROADS' Strategic Plan (2016/17-2020/21)	<p>TANROADS has a five years Strategic Plan with Objective C; to ensure Roads are improved. In achieving the objective TANROADS' set a strategic for maintaining National Roads Network. A target set to be achieved by 2020/21</p> <p>TANROADS is expected to rehabilitate 1,211km of paved Trunk roads network by June, 2021; rehabilitate 8,407 km of Regional road network to gravel standard by June, 2021 and construct 20 Bridges constructed and rehabilitation by June, 2021</p>	TANROADS

Source: Auditors' Analysis, 2021





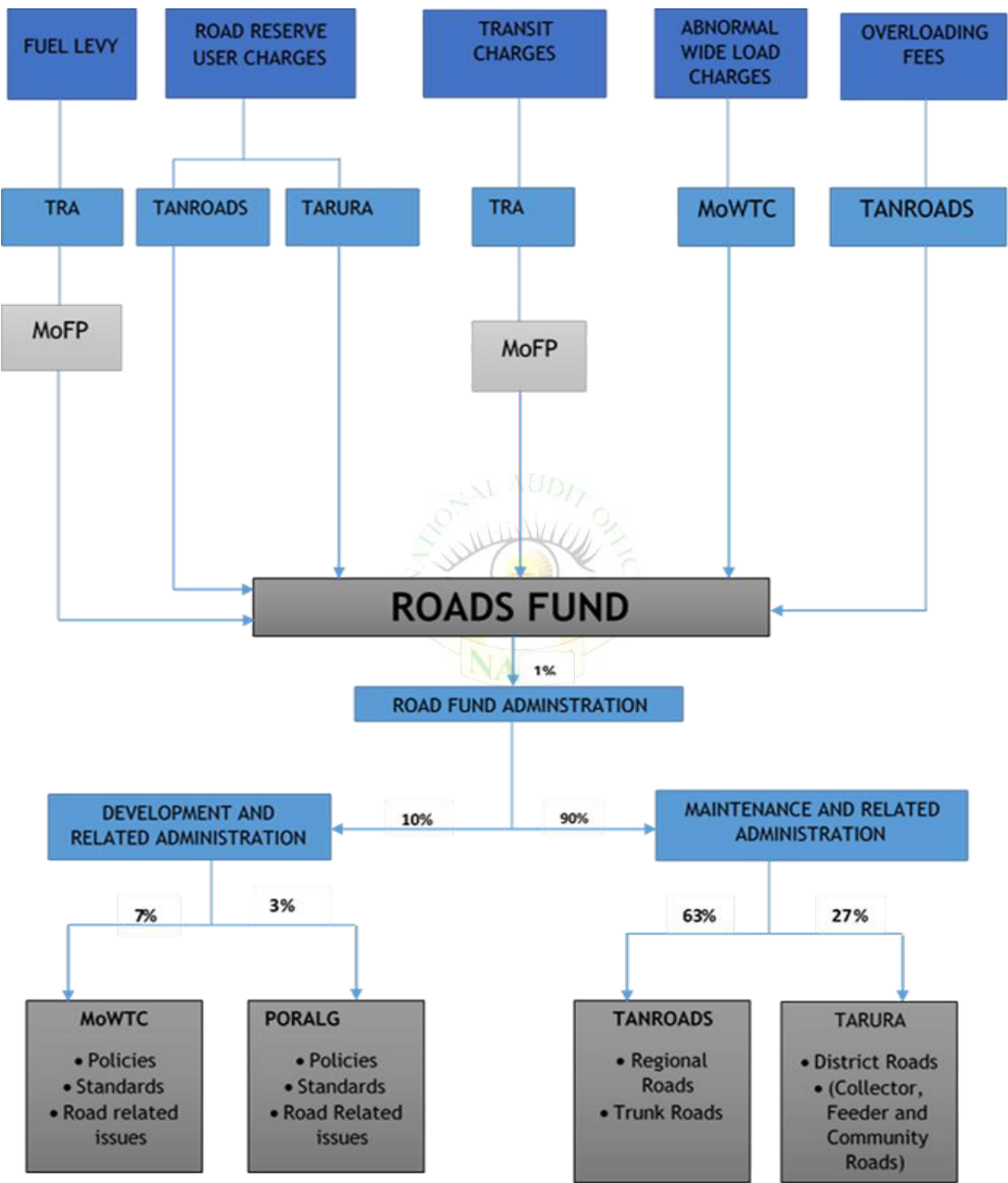
## Appendix Eight: Guidelines on Roads Maintenance in Tanzania

Guidelines	Objective of the guidelines	Key requirement in relation to the maintenance of roads	Responsible entity
Low Volume Roads Manual, 2016	The Manual provides procedures for the design of low volume roads and maintenance of roads during operations	<ul style="list-style-type: none"> <li>Section 2.4.1 requires the agency to ensure that, design, construction and maintenance approaches for LVRs are adopted and employ appropriate design standards and specifications</li> <li>The manual recognize sustainable provision of funding for maintenance for routine and periodic maintenance requirements.</li> </ul>	TANROADS and MOW
Standard Specifications for Road Works, 2000	The Standard Specification envisage broader coverage of all aspects of road construction works including	Maintenance works. Clause 3705 of Standard specifications provided maintenance of existing gravel and mode of payments for maintenance works. It requires payments for maintenance of existing gravel roads to be paid per square metre	TANROADS and MOW
Draft Road Maintenance Standard Specification, 2010		Draft Road Maintenance Standard Specification, 2010, require patching holes for the paved roads its sides to be vertical and bottom flat horizontal and the hole to be compacted and tack coat of 80/100 penetration grade to be applied to the	

Guidelines	Objective of the guidelines	Key requirement in relation to the maintenance of roads	Responsible entity
		<p>bottom and all sides of the prepared hole.</p> <p>Draft Road Maintenance Standard Specification 2010, requires all road signs to be reflective and all paints and other materials used to be in good quality so as not fade or deteriorate unduly when exposed to the atmosphere. It also require the Road Markings to be retro-reflective or thermos-plastic paints and must conform to AASHTO M247 and Glass beads conform to the requirement of AASHTO M247</p>	
Draft Road Maintenance Hand book Part II, 2007		Draft Road Maintenance Hand book Part II, 2007 requires Engineer to evaluate and select execution works based on inspection results execution cost, and defects records. It also requires the engineer to study the damage scale and/ or condition ranking based on inspection results	TANROADS and MOW

*Source: Auditors' Analysis from reviewed Manuals and Guidelines, 2021*

**Appendix Nine:            System for the Collection and Disbursement of Fund for Maintenance of Roads in the Country**



Source: Roads Fund Board’s Financial Statement Report of 30<sup>th</sup> June 2021

### Appendix Ten (a): Road Conditions by Road Type and its Severity

FY	Road Class	Good		Fair		Poor		Total (km)	Total %age
		(km)	%age	(km)	%age	(km)	%age		
2020/21	Trunk Paved	5,437.34	67	1,556.78	19	1,166.54	14	8,160.66	100
	Regional Paved	716.58	44	434.71	27	480.77	29	1,632.06	100
	Trunk Unpaved	838.51	39	1,116.03	51	216.09	10	2,170.63	100
	Regional Unpaved	5729.99	29	12,392.71	62	1,988.95	10	20,111.65	100
Total Road Network		12,722.42	40	15,500.23	48	3,852.35	12	32,074.99	100
2020/19	Trunk Paved	5,445.00	67	1,560.33	19	1,167.32	14	8,172.65	100
	Trunk Unpaved	927.75	39	1077.08	45	369.7	16	2,374.53	100
	Regional Paved	711.59	44	432.87	27	458.4	29	1,602.86	100
	Regional Unpaved	6203.44	30	11,768.28	57	2,707.70	13	20,679.42	100
	District Paved	5.74	18	2.00	6	24.33	76	32.07	100
	District Unpaved	179.43	42	189.08	44	56.55	13	425.06	100
Total Road Network		13472.95	41	15029.64	45	4783.99	14	33,286.59	100
2018/19	Regional Paved	754	50	314	21	449	30	1,517	100
	Trunk Paved	5,771	72	1,248	16	971	12	7,990	100
	Regional Unpaved	3,964	19	14,327	69	2,554	12	20,845	100
	Trunk Unpaved	554	22	1,703	68	243	10	2,500	100
Total Roads Network		11,043	34	17,592	53	4,217	13	32,852	100
	Regional Paved	754	50	314	21	449	30	1516	100
	Trunk Paved	5771	72	1248	16	971	12	7989	100
	Regional Unpaved	5237	25	12790	60	3119	15	21146	100
	Trunk Unpaved	665	26	1513	59	380	15	2528	100
Total Roads Network		12427	37	15864	48	4919	15	33210	100
2016/17	Regional Paved	635.764	53	320	27	248	21	1203	100
	Trunk Paved	5455	79	918	13	494	7	6866	100

FY	Road Class	Good		Fair		Poor		Total (km)	Total %age
		(km)	%age	(km)	%age	(km)	%age		
	Regional Unpaved	5399	27	11578	58	2883	15	19860	100
	Trunk Unpaved	969	29	1889	57	438	13	3297	100
Total Roads Network		12459	40	14704	47	4063	13	31227	100

#### Appendix Ten (b): Road Conditions from Visited Regions

Region	Condition	Trunk Roads (surface type)		Regional	
		Paved (%)	Unpaved (%)	Paved (%)	Unpaved (%)
Morogoro	Good	50	18	85	22
	Fair	43	36	10	48
	Poor	7	46	6	30
Mara	Good	96	22	89	27
	Fair	4	71	8	33
	Poor	0	6	3	40
Katavi	Good	98	72	100	67
	Fair	2	28	2	27
	Poor	0	0	0	6
Manyara	Good	92	100	55	69
	Fair	8	0	43	25
	Poor	0	0	2	6
Lindi	Good	84	0	92	34
	Fair	11	0	10	65
	Poor	5	0	0	1
Singida	Good	99	59	96	62
	Fair	1	29	2	29
	Poor	0	12	2	9
Mbeya	Good	88	4	74	26
	Fair	10	65	16	70
	Poor	2	31	11	4

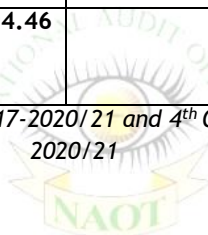
Source: Annual Progress Report ( 4<sup>th</sup> Quarter) 2016/17-2020/21

## Appendix Eleven: Budget and Expenditure for RMMS Activities

FY	Planned Activity Vs Budget for RMMS		Upgrading of RMMS		
	Activity for RMMS	TZS (Million )	Executed Activity	TZS (Million)	Reason none execution
2016/17	Procurement of Consultant for Feasibility study to upgrade RMMS into a fully integrated Road Management System (RMS).	134.46	None	None	Due to insufficient budget
	Procurement of Individual Local Programmer for System Debugging and System adjustment including VAT change	120.00	None	None	Was Rescheduled for next year
2017/18	System testing for bugs fixing/ improvements done by Standby Local Programmer	20.00	Comprehensive system testing for fixed bugs and improvement done	20	Nil
	Procurement of Consultant for Feasibility study to upgrade RMMS into a fully integrated Road Management System (RMS)	150.00	None	None	Due to insufficient funds
	System Debugging and System adjustment including VAT changes by using Local programmer	140.00	System debugging, Inclusion of VAT in contracts and Introduction of Songwe region	135.50	Nil
2018/19	Comprehensive System testing for bugs fixing/ improvements	50	Comprehensive System testing for bugs fixing/ improvements	25.00	Nil
2019/20	Feasibility study for Upgrading of RMMS	160	Preparation of TOR and	None	Procurement was

FY	Planned Activity Vs Budget for RMMS		Upgrading of RMMS		
	Activity for RMMS	TZS (Million )	Executed Activity	TZS (Million)	Reason none execution
	to Intergrated Road Asset Management System		tendering processes		cancelled due to failure to conclude negotiation
	Converting RMMS into Geodatabase	60	Converting RMMS into Geodatabase	60.00	Nil
2020/21	Feasibility study for Upgrading of RMMS to Integrated Road Asset Management System	160	Preparation of TOR	None	It is under Procurement
<b>Total (TZS) Million</b>		<b>994.46</b>		<b>240.50</b>	<b>As per above reasons</b>

Source: Annual Operation Plans 2016/17-2020/21 and 4<sup>th</sup> Quarter Progress Report 2016/17-2020/21



## Appendix Twelve: Extent of Delays for Road Maintenance Works

Category of Road Network	Category of Road Maintenance	% of Contract of Roads Maintenance with Delay				
		FY- 2016/17	FY - 2017/ 18	FY - 2018/19	FY - 2019/20	% Averag e delay
Truck	Routine and Recurrent maintenance - Paved	48	17	25	16	27
	Routine and Recurrent maintenance - Unpaved	75	55	100	100	83
	Periodic maintenance - Paved	78	50	93	50	68
	Periodic maintenance - Unpaved	78	88	0	50	54
	Spot improvement - Paved	100	50	0	0	38
	Spot improvement - Unpaved	100	100	0	100	75
	Bridge maintenance - Preventive - Paved	89	100	0	100	72
	Bridge maintenance - Preventive - Unpaved	0	0	0	0	0
	Bridge maintenance - Major repairs - Paved	100	100	0	83	71
	Bridge maintenance - Major repairs - Unpaved	0	0	0	50	13
Regional	Routine and Recurrent maintenance - Paved	92	100	40	18	63
	Routine and Recurrent	53	38	66	46	51



Category of Road Network	Category of Road Maintenance	% of Contract of Roads Maintenance with Delay				
		FY- 2016/17	FY - 2017/ 18	FY - 2018/19	FY - 2019/20	% Averag e delay
	maintenance - Unpaved					
	Periodic maintenance - Paved	85	89	80	67	80
	Periodic maintenance - Unpaved	44	58	39	37	44
	Spot improvement - Paved	0	0	0	0	0
	Spot improvement - Unpaved	69	45	67	60	60
	Bridge maintenance - Preventive - Paved	100	68	100	39	77
	Bridge maintenance - Preventive - Unpaved	100	14	38	38	47
	Bridge maintenance - Major repairs - Paved	62	92	100	88	85
	Bridge maintenance - Major repairs - Unpaved	54	0	100	67	55

*Source: Auditors' Analysis from on-going and rollover Maintenance Works Contracts for FY 2016/17-2020/21*

### Appendix Thirteen: Number of Contracts with Cost Overrun per region

TANROADS Regional Office	Financial Year	Number of Contracts	Number of Contracts with Cost Overrun	% of Cost Overrun
Katavi	2016/17	101	5	5
	2017/18	51	1	2
	2018/19	64	0	0
	2019/20	35	0	0
	2020/21	NA	NA	NA
Mbeya	2016/17	173	0	0
	2017/18	64	0	0
	2018/19	85	0	0
	2019/20	64	0	0
	2020/21	NA	NA	NA
Morogoro	2016/17	117	0	0
	2017/18	80	1	1
	2018/19	79	0	0
	2019/20	56	1	2
	2020/21	NA	NA	NA
Mara	2016/17	112	16	14
	2017,18	80	4	5
	2018/19	70	1	1
	2019/20	87	0	0
	2020/21	NA	NA	NA
Manyara	2016/17	68	0	0
	2017/18	25	0	0
	2018/19	20	0	0
	2019/20	107	0	0
	2020/21	NA	NA	NA
Singida	2016/17	17	0	0
	2017/18	7	0	0
	2018/19	18	0	0
	2019/20	1	0	0
	2020/21	NA	NA	NA
Lindi	2016/17	26	0	0
	2017/18	69	0	0
	2018/19	58		
	2019/20	77	0	0
	2020/21	NA	NA	NA
Total		1811	29	2

Source: Auditors' Analysis from Road Maintenance Report FY 2016/17-2019/20 (Fourth Quarter Progress Report) Volume ii -Contracts Data.

## Appendix Fourteen: Underpayments of Completed Maintenance Projects for Financial

TANROADS Regional Office	Financial Year	Contract Sum for Completed Projects (TZS)	Revised Contract Sum for Completed Projects (TZS)	Amount Paid to Date for Completed Projects (TZS)	Revised Vs Cont (TZS)
KATAVI	2016/17	18,400,663,633.67	15,855,810,241.20	14,937,847,186.81	-2,
	2017/18	8,528,305,055.00	8,528,305,055.00	8,073,174,708.12	
	2018/19	9,226,262,237.00	8,855,781,955.00	7,594,235,243.81	-
	2019/20	2,077,186,932.00	2,408,011,932.00	1,978,920,434.18	.
MBEYA	2016/17	17,985,233,221.20	-	16,601,300,611.90	
	2017/18	11,036,109,528.84	-	11,036,109,528.84	
	2018/19	6,121,963,072.75	-	6,121,963,072.75	
	2019/20	6,922,489,968.05	-	6,922,490,418.05	
MARA	2016/17	18,842,585,349.20	-	17,387,443,921.90	
	2017/18	19,503,025,496.76	-	16,624,666,475.82	
	2018/19	13,642,737,968.64	-	12,436,707,809.84	
	2019/20	17,142,619,469.34	-	15,397,286,330.62	
MOROGORO	2016/17	25,662,639,484.98	-	24,920,192,161.54	
	2017/18	19,638,226,205.04	-	19,497,395,357.90	
	2018/19	10,164,361,350.40	-	8,912,616,829.00	
	2019/20	11,106,380,859.00	-	10,782,985,131.98	
MANYARA	2016/17	5,648,601,250.37	-	5,103,767,297.02	
	2017/18	9,706,100,008.93	-	9,280,807,039.60	
	2018/19	11,053,022,788.15	-	9,755,073,631.77	
	2019/20	11,477,844,608.00	-	10,896,899,029.88	

Controller and Auditor General

TANROADS Regional Office	Financial Year	Contract Sum for Completed Projects (TZS)	Revised Contract Sum for Completed Projects (TZS)	Amount Paid to Date for Completed Projects (TZS)	Revised Vs Cont (TZS)
LINDI	2016/17	7,770,142,497.55	-	6,893,615,646.20	
	2017/18	12,876,555,382.09	-	12,178,101,555.17	
	2018/19	14,125,303,940.00	-	12,463,134,810.58	
	2019/20	11,635,279,906.34	-	9,900,744,200.92	
TOTAL		300,293,640,213.31		275,697,478,434.20	

*Source: Auditors' Analysis from Road Maintenance Report FY 2016/17-2019/20 (Fourth Quarter Progress)*



**Controller and Auditor General**