INFLUENCE OF ROAD SUB-SECTOR REFORMS ON PERFORMANCE OF ROADS MANAGEMENT IN KENYA: A CASE OF KENYA NATIONAL HIGHWAYS AUTHORITY SOUTH RIFT REGION

BY:

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DECLARATION

I declare that this project is my original work and has not been presented for a degree or any other award in any other University.

Signed …… Date ……

Peter KabuguNdichu

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This project was carried out by the above student, to fulfill academic requirement, under my supervision as university supervisor.

Signed …… Date …….

Prof. Christopher Gakuu

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DEDICATION

This work is dedicated to my late father Gabriel Ndichu, whom God called to eternal rest before witnessing me acquire university education. May his soul rest in eternal peace.

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TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

ARICS	Annual Roads Inventory and Conditions Survey
GBCP	Gravelling, Bridging and CulvertingProgramme
KeNHA	Kenya National Highways Authority
KeRRA	Kenya Rural Roads Authority
KRB	Kenya Roads Board
KURA	Kenya Urban Roads Authority
KWS	Kenya Wildlife Service
MoLG	Ministry of Local Government
MoRPWH	Ministry of Roads, Public Works and Housing
MRP	Minor Roads Programme
PPDA	Public Procurement and Disposal Act
PPDR	Public Procurement and Disposal Regulations
RARP	Rural Access Roads Programme
RMI	Road Maintenance Initiative
RMLF	Road Maintenance Levy Fund
UNECA	United Nations Economic Commission for Africa

ABSTRACT

The importance of road transport as an enabler for economic growth, poverty reduction and wealth creation in Kenya cannot be over emphasized. The road sub sector has however, for years suffered from poor management and inadequate funds for roads maintenance.In the recent past however, reform efforts have been undertaken with a view to addressing the poor state which the roads were in. The reforms saw a roads fund body; Kenya Roads Board (KRB), established in the year 2000 following enactment of the Kenya Roads Board Act in 1999.The reform efforts also saw the establishment of three implementing agencies, namely the Kenya National Highways Authority (KeNHA), Kenya Urban Roads Authority (KURA) and Kenya Rural Roads Authority (KeRRA). The authorities are autonomous bodies which were established following enactment of the Kenya Roads Act in 2007. Their creation was aimed at addressing the legal and institutional weaknesses identified in road management and maintenance.The purpose of this study was to assess the influence the road sub-sector reforms has had on the performance of roads management in Kenya.Related literature was reviewed with a view to establishing the existing knowledge on the road sub-sector reforms. This is a qualitative case study wheredescriptive design was adopted. Primary data was used and two survey tools in the form questionnaires and interview schedule were used to obtain the data. Purposive sampling design was used whereby all the 15 staff members of KeNHA south rift region were administered with questionnaires. Further, a senior managerial staff from KeNHA head office was picked as a key informant and an in-depth interview carried out on him. The collected data was then analyzed using the statistical packages for social sciences (SPSS) version 20.0 and the results of the analysis presented in form of tables. The results were then used to draw the following conclusions: i) The road subsector reforms were effective in improving the efficient management of roads; ii)the legal and regulatory reforms in the road sector have influenced positively roads management in Kenya; iii) funding for roads maintenance was not adequate to fund the intended road maintenance activities; iv) Effective organizational leadership is critical for organizational success and KeNHA's leadership has performed well so far.Thefindings and recommendations of this study if observed will be beneficial to the government and the road agencies in improving the weaknesses that still exist in the sub sector, as they seek to better manage and improve the road infrastructure in the country.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In Sub-Sahara Africa, road transport is the dominant mode. Typically, over 80 per cent ofpassenger and more than 75 per cent of freight traffic are carried by roads.Roads are, therefore, essential for economic development and poverty reduction in the Sub-Sahara Africa region(Addo-Abedi F Y, 2007).

The transport sector in Kenya contributes about 6% of the gross domestic product. It also provides the necessary linkages for promoting national and international trade, economic growth, poverty reduction and wealth creation.Road transport accounts for over 80 percent of Kenya's total passenger and freight transportation (Harral, 1988). During the period 1998-2008 output in road transport averaged over 30 % of total output per annum. The sector currently accounts for over 93 % of total domestic freight and passenger traffic (Ministry of Transport, May, 2009).

In spite of the importance of roads in the region, roads are poorly managed and inadequate funding is provided for maintenance. Large portions of the networks in Sub-Sahara Africa are, therefore, in poor condition. Socio-economic growth is, therefore, stifled due to high transport costs which are as a result of high vehicle operating costs (Addo-Abedi F Y, 2007).

The road transport infrastructure has over recent years deteriorated to the extent that 47% of the classified road network is currently in a failed condition and requires reconstruction. The road networks had therefore become obstacles to economic recovery which most of these countries had embarked on. There had to be reasons for this state of affairs. Various studies indicated that this was attributable to inadequate provisions for the financing and the management of roads. Roads were not managed as part of the market economy but the provision of roads was seen as a social service. Road expenditures were from general revenues and were the first to be cut during difficult

periods (Heggie, Management and Financing of Roads: An Agenda for Reform. 1995 World Bank Technical Paper 275, 1995).

The institutional frameworks within which roads were managed in Kenya and other sub-Saharan countries were inadequate. Roads were largely managed through government departments within ministries. The management of roads was not subject to any rigorous discipline. There was the lack of clearly defined responsibilities with the result that management structures were weak and ineffective. There was, therefore, necessarily lack of managerial accountability. The foregoing indicated that there had to be reform if Sub-Sahara Africa was to get out of the economic quagmire in which it found itself (Mabogunje, 1992).

In response to the deteriorating condition of the road network and the high associated economic costs being experienced, African countries under theaegis of the United Nations Economic Commission for Africa (UNECA) consulted with the World Bank, the donor community and other stakeholders giving rise to the creation of a Road Maintenance Initiative (RMI) in 1988 where the RMI set out the broad outline of a new policy framework for the road sector aimed at sustainable management and financing of public road services in Africa. Experience gained under the RMI, suggests that the key conceptrequired to overcome the above problems is commercialization: bring roads into the market place, put them on a fee-for-service basis, and manage them like any other business enterprise. However, since roads are a public monopoly, and ownership of most roads will remain in government hands for some time to come, commercialization requires complementary reforms in four other important areas.

These are referred to as the four basic building blocks. They focus on:first is creating ownership by involving road users in management of roads to win public support for more road funding, to control potential monopoly power, and constrain road spending to what is affordable; secondly stabilizing road financing by securing an adequate and stable flow of funds; third is clarifying responsibility by clearly establishing who is responsible for what; and lastly strengthening management of roads by providing effective systems and procedures, and strengthening managerial accountability.

The various consultations that were held during the 1980s and early 1990s under the umbrella of the Bank-managed and donor-financed RMI, set the broad outline of a new policy framework for the road sector. The new policy framework puts emphasis on the commercialization of road management and advocates institutional reforms, such as the establishment of dedicated road funds managed by autonomous road boards comprised of road user representatives.

The objectives of the reforms were to ultimately provide the road user value for money through better management of resources:firstly by strengthening sub-sector administration through appropriate institutional set-ups and human resource development policies; rationalizing programming and budgeting; clearly defining responsibilities between road agencies, and their parent ministries and road boards. Secondly bringing roads to the market place and put them on the basis of fee-for-service through cost recovery policies. This was to be supported by appropriate legislation and administrative frameworks for sustainability. Thirdly by redefining the role of the private sector in road delivery,and increasing its role in the management of the road sub-sector to engender ownership.

By the early 1990s, after extensive discussions between Sub-Sahara African governments and Development Partners, there was general agreement that among the immediate reforms required were:The setting up of autonomous road agencies with effective structures and clearly defined responsibilities. The agencies were to run as commercial entities while parent ministries remained with the responsibility for policy and oversight; that is “Eyes on – Hands off”. They also agreed that funding for road maintenance needed to be increased and predictable for effective planning. This was to be achieved through the setting up of ‘Road Funds’.

In conclusion of the sustained dialogue with Development Partners, governments in Sub-Saharan Africatherefore embarked on reforms in the road Sub-Sector in the early 1990s.The reforms aim at providing the road user value for money through better management, and by bringing roads into the market place. The reforms are to ensure

increased and predictable road maintenance funding through appropriate cost recovery policies.

1.2 Statement of the Problem

Road transport accounts for over 80 percent of Kenya's total passenger and freight transportation (Harral, 1988). During the ten year period between 1998 and 2008, output in road transport averaged over 30 % of total output per annum. The sector currently accounts for over 93 % of total domestic freight and passenger traffic (Ministry of Transport, May, 2009).

In spite of the importance of roads in the region, roads are poorly managed and inadequate funding is provided for maintenance. Large portions of the networks in Sub-Sahara Africa (which includes Kenya) are, therefore, in poor condition. Socio-economic growth is, therefore, stifled due to high transport costs which are as a result of high vehicle operating costs (Addo-Abedi F Y, 2007).The road transport infrastructure has over recent years deteriorated to the extent that 47% of the classified road network is currently in a failed condition and requires reconstruction. Various studies indicated that this was attributable to inadequate provisions for the financing and the management of roads.The Kenyan government has been concerned over the fragmented nature of the institutional framework for the transport sector. With regard to road, it is considered that the establishment of the Kenya Roads Board in 2000 and the enactment of the Kenya Roads Act in 2007 which established the KeNHA, KURA and KeRRA were to go a long way in improving the legal and institutional framework for road development and maintenance (Ministry of Transport, May, 2009).This study seeks to bridge the knowledge gap and establish to what extent these institutions have influenced the performanceof roads management in Kenya.

1.3 Purpose of the Study

The aim of this study is to examine the influence of road sub sector reforms on the performance of roads management in Kenya.

1.4 Objectives of the study

The main objective of this study is to establish what institutional reforms have been undertaken in the road sub sector and their influence on the performance of roads management in Kenya.

The following are the specific objectives of the study;

1. To determine the influence of local capacity development on the performance of roads managementin Kenya.
2. To establish the influence of legal and regulatory reformsin the road sub sector on the performance of roads management in Kenya.
3. To assess the influence of the level of funding for road maintenanceon the performance of roads management by the implementing agencies in Kenya.
4. To establish the influence of organizational leadership of the implementing agencies on the performance of roads management in Kenya.

1.5 Research questions and hypotheses

The following are the research questions of this study:

1. How does the improvedlocal capacity development influencethe performance of roads management in Kenya?
2. To what extent does the legal and regulatory reforms in the road sub sector influence the performance of roads management in Kenya?
3. What is the influence of the level of funding for roads maintenance on the performance of roads management by the established implementing agencies?
4. How does the organizational leadership of the implementing agencies influence the performance of roads management in Kenya?

1.5.1 Research hypothesis

H_0: There is no significant relationship between improved local capacity development on the performance of roads management by the implementing agencies in Kenya.

1.6 Significance of the Study

Previous studies on roads management and maintenance in Sub Saharan Africa have identified the weaknesses inherent in roads management systems and subsequently recommended appropriate reforms aimed at strengthening and improving roads management in the Sub Saharan Africa. Kenya has subsequently embraced the call for the road sub sector reform and has created three roads implementing agencies; KURA, KeRRA and KeNHA.

The study therefore seeks to assess the success of the reforms endeavors by reviewing the performance of roads management through the recently created roads agencies.

The study will establish to what extent has the road agencies addressed the challenges previously existed in the management of the road sub sector in South Rift Region and the whole of Kenya by inference. This will help the government to assess the effectiveness of performance of the agencies in discharging their respective mandates of roads management.The study will also help the implementing agencies assess the extent of their contribution in the success of road sub-sector reform efforts. The findings and conclusions will add to the literature on the subject and will assist scholars in future.

1.7 Delimitation of the study.

KeNHA in its organization has its headquarters in Nairobi and ten regional offices across the country. This studytook a case ofKeNHAsouth rift region and this therefore narrowed the area of focus and the target population, consequently simplifying the study.

1.8 Limitations of the study.

This study was likely to have the following limitations: Employees of KeNHAwould view this study as a fault finding mission and as a result lie or decline to respond to the questions or request for data. This limitation was addressed by explaining to the respondents the purpose of the study and that the information would be treated with utmost sincerity.

1.9 Assumptions of the study

The main assumption of this study is that the road users will offer what can be deemed as a fair assessment of the performance of KeNHA and the employees will be truthful in their responses.

1.10Definitions of significant terms as used in the study

Local capacity development – This refers to the process of improving the knowledge and skills of the local technical staff in the road sub sector, as well as strengthening the local construction industry's capabilities in order to improve their performance.

Funding – Refers to the provision of financial resources for development and maintenance of road infrastructure.

Organizational leadership – Refers to the process whereby the organizational heads/management guide, direct and influence the behavior and work of other members of the organization towards accomplishment of the organizational goals.

Implementing agencies – Refers to the autonomous road maintenance authorities that were established following enactment of the Kenya Roads Bill, 2007. They include KeNHA, KeRRA and KURA.

Road management – Is to provide for an overall coordinated framework that promotes safe and efficient public road networks and the responsible use of road reserves for other legitimate purposes, such as the provision of utility and public transport services.

1.11 Organization of the study

This study is organized into five chapters; in the first chapter the background of the study is introduced, the main focus of this chapter of the study is to introduce the research topic, the key terms used and the hypotheses to be tested and the assumptions to be made in the process.; in the second chapter past literature and previous studies are reviewed; in the third chapter the target group is introduced, the sample size calculated and method of data collection explained. The method of data measure and analysis is explained in this chapter.

In chapter four, the results of the analyses are presented and discussed while chapter five summarizes, discusses and draws conclusion of the findings of the study. In this chapter, recommendations are also made in respect of the findings obtained.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents and discusses a review of some of the literature related to the study. The chapter is divided into six sections which dwell on; institutional reforms in road management; funding for road maintenance; organizational leadership; local capacity development and road management; legal and regulatory reforms in road management in Kenya; and the conceptual framework.

2.2 Institutional reforms in road sub-sector and road management

Roadtransportgrewrapidly aftertheSecond World War. Itcarries80to90percentofthe region'spassengerandfreighttransportandprovidestheonlyform ofaccesstomostrural communities. To handlethistraffic,Africancountriesexpandedtheirroadnetworksconsiderably during the1960sand1970sandalsobuiltnewroadstoopenupmorelandfordevelopment. By the endofthe1980s,therewerethereforenearly twomillionkilometersofroadsinSub-SaharanAfrica(Heggie, 1995).

These roadsaresomeoftheregion'slargestassets,withreplacementcostsamountingtonearly$150 billion. In termsofassets,employmentandturnover, roads are one of the biggest assets.In spite of their importance, most roads in Africa are poorly managed and badly maintained. The poor state of the road network is reflected in the large backlog of deferred maintenance. During the past 20 years up to 2008, Africancountries have spent far too little on routine and periodic maintenance and, as a result, nearly a third of the $150 billion invested in roads has been eroded through lack of maintenance. Africa has been living off its assets. To restore only those roads which are economically justified, and to prevent further deterioration, will now require annual expenditures over the next ten years of at least $1.5 billion. The balance of the network requiring restoration will either have to receive minimal maintenance, or be handed over to lower levels of

government.(Heggie, Management and Financing of Roads: An Agenda for Reform. 1995 World Bank Technical Paper 275, 1995)

The Africa Road Management Initiative(RMI), launched by the UNECA and the World Bank, has spent the past six years working with African countries to identify the underlying causes of poor road maintenance policies and develop an agenda for reforming them. What has emerged is that poor road maintenance policies are attributable to the institutional framework within which roads are managed. They are not managed as part of the market economy and this biases managerial incentives. There is no clear price for roads, road expenditures are financed from general tax revenues, and the road agency is not subjected to any rigorous market discipline. Roads are managed like a social service. Poor terms and conditions of employment create further difficulties, as do lack of clearly defined responsibilities, ineffective and weak management structures, and a lack of managerial accountability. Road agencies are unlikely to operate efficiently until they are faced with some form of competition, or a competition surrogate. Competition is the primary factor that motivates managers to cut waste, improve operational performance, and allocate resources efficiently (Moeller, 1993).

Kenya has about 178,000 kilometers of roads of which 63,290 kilometers are classified while the rest is unclassified. Until recently, the classified roads were under the Ministry of Roads, Public Works and Housing (MoRPWH) while responsibility for unclassified roads fell under the Ministry of Local Government (MoLG), the Kenya Wildlife Service (KWS) and the Forest Department. In July 2007, however, the government created three key institutions to be responsible for the development, and maintenance of international classified roads, urban roads and rural roads, respectively. Recent surveys indicate that about 50% of the road network is in good condition while the balance requires rehabilitation. Funds for development, rehabilitation and maintenance are inadequate. During the period 1998-2008 output in road transport averaged over 30 % of total output per annum. The sector currently accounts for over 93 % of total domestic freight and passenger traffic (Ministry of Transport, May, 2009).

2.3 Roads maintenance fund and roads management

According to The Road Management Initiative (RMI) – Matrix, (2006), it is indicated that by 2006 there weretwentysevencountriesinSub-SaharaAfricawith activeroadfunds inplace. Thenumberincreasedinrecenttimeswith nineofthe road funds havingbeenestablished since the year 2000.

Road Funds and agencies face challenges but there has been noticeable successes arising out of the reforms so far made. Despite the fact that most sub-Saharan countries do not raise enough revenue to meet all their maintenance needs, under-funding for maintenance has reduced. Gwillan& Kumar (2003) report that most countries are now meeting between 30 and 80% of their road maintenance needs. This is up from the 15 to 20% which was common in the early 1990s. Having a predictable income for road maintenance with the improved operational efficiency of road agencies had led to the curbing of the declines in road conditions. In some countries the situation has been significantly improved. In Tanzania the condition of the network has improved from about 49% poor in 2000 to around 15% poor by June 2006. (Addo-Abedi F Y, 2007).

One of the lessons to emerge from the RMI was that attempts to improve road maintenance policies cannot focus on maintenance alone. Poor road maintenance policies are a subset of the wider issues of managing and financing roads as a whole. This insight quickly led to a wider debate about what might be done to strengthen the management and financing of roads. The key concept that emerged from this debate was commercialization: bring roads into the marketplace and put them on a fee-for-service basis (Heggie, 1995).

However, since roads are a public monopoly and ownership of most roads will remain in government hands for some time, commercialization requires complementary reforms in four other important areas. These are referred to as the four basic building blocks(Moeller, 1993). They focus on creating ownership by involving road users in management of roads to win public support for more road funding, to control potential monopoly power, and constrain road spending to what is affordable; stabilizing road financing by securing an adequate and stable flow of funds; clarifying responsibility by

clearly establishing who is responsible for what; and strengthening management of roads by providing effective systems and procedures, and strengthening managerial accountability.These four building blocks represent the core of the reforms. They are interdependent and ideally should be implemented together. Without all four, the reforms may achieve only part of their objective. One cannot solve the financing problem without the strong support of road users. And one cannot win the support of road users without taking steps to ensure that resources are used efficiently. And one cannot improve resource use unless you control monopoly power, constrain road spending to what is affordable, and increase managerial accountability. And one cannot hold managers accountable unless they have clearly defined responsibilities. There is nevertheless scope for flexibility. The reforms can be introduced in different ways, and the content of each building block may differ, depending on country circumstances (Heggie, 1995).

Ownership: Major policy reforms in the road sector are unlikely to succeed without the active support of road users. They are the people who use the road network and also pay for it. Given that current allocations for road maintenance are erratic and well below the levels needed to keep the road network in a stable long-term condition, the first building block thus involves winning public support for more road funding. However, support for more roads funding through user charges requires that steps be taken to ensure that road agencies do not operate as public monopolies and that no more is spent on roads than the country can afford(Moeller, 1993).

Financing; this aims at establishing an adequate and stable flow of funds. All governments in Africa are seriously short of fiscal revenues(Heggie, 1995). Budget allocations for road maintenance rarely exceed 30 percent of requirements, and it is simply not feasible for governments to increase these allocations under present fiscal conditions. Improved revenue mobilization is essential. Several African countries are addressing this issue by introducing an explicit road tariff consisting of vehicle license fees and a fuel levy. The tariff is collected independently from government sales and excise taxes; the fuel levy is collected on an agency basis and deposited directly into a Road Fund. This prevents the proceeds from being siphoned off and spent on other public

programs. ItmustbenotedthatroadfundswerenotentirelynewtoSub-SaharaAfrica. RoadFunds hadbeensetupinsomecountriesearlier. Thesefundshowever sufferedfrompoorfinancialmanagement,the absenceofindependentaudits,theuseof funds for unauthorized expenditures, diversion of funds and weak oversight (Addo-Abedi F Y, 2007). The intention is to: create a clear market signal to encourage road users to demand value for money and to link revenues and expenditures to impose a hard budget constraint on the road agency, so that more roads spending means a higher tariff, while a lower tariff means less road spending. The remaining costs of maintaining urban and rural roads are financed by local taxes. Most of the countries with Road Funds have agreed procedures for allocating funds between different road agencies. Some use simple formulas (Ghana), others use formulas that are modified in relation to needs (Tanzania), while South Africabases them on a complex assessment of needs(Brushett, 2005).

One important instrument for the realization of the financing reform has been the establishment of the "second generation" road funds. This mechanism is intended to support commercialization of road management by increasing domestic resources made available to road maintenance and by increasing the efficiency of resource use. What is different about this new generation is, inter alia: administrative separation from the budget process, management by a Board on which user representatives may sit and may be predominant in decision making; and financing by designated road user charges, based on user-pays principle (Bahl, 1992).

Generally, available evidence suggests that the Road Funds studied have resulted in improving the quality of the road network. There appears to be in place the elements of a strategic framework to reverse the deteriorating trend and address the neglect of past decades. However, it is difficult to put too much emphasis on specific numbers – they may be considered as indicative and not necessarily wholly reliable and comparable over time and among countries. In most of the countries, road surveys are not being carried out on a regular basis to allow an objective evaluation. Problems with road management systems have resulted in information not being collected systematically on network quality so the quantum of improvement is difficult to assess accurately. In Kenya, most of

the rural road network is impassable and in 1999 disbursements were only about 2% of the budget allocations (Creightney, 1993).

Historically, the road network was developed as a subsidiary of the railway system up to the time of Kenya's independence in 1963. Railways were developed for the transportation of bulk commodities and passengers over long distances. Roads were used as a link between the railways and the European-owned large scale farming areas (Richecour, 1994).

Little or no interest was accorded to rural areas where subsistence farming was practiced by Africans. Since independence, measures taken by the government to develop and maintain roads include: Selective bituminization of heavily trafficked trunk and primary roads and upgrading of priority earth roads to gravel standards in the late 1960's and early 1970's; Development of Special Purpose Roads to serve specific areas of economic activities e.g. roads serving areas where main cash crops such as tea, coffee, or sugar were grown or roads serving the tourist industry; Construction of farm-to-market rural roads under the Rural Access Roads Programme (RARP) from 1974 to 1986. The purpose of the RARP was to provide access to social and administrative facilities, promote agricultural development and create employment opportunities;

Improvement of low-trafficked secondary and minor roads under the Minor Roads Programme (MRP) from 1986 to link rural access roads to roads of higher classes; Improvement of heavily trafficked secondary and minor roads under the Gravelling, Bridging and CulvertingProgramme (GBCP) in the 1970's and1980's; Introduction of public road tolls for road maintenance in 1984/85; Introduction of axle load controls in 1986; and Introduction of the fuel levy and transit tolls for road maintenance in 1994 and spot improvement of non-maintainable road sections using a combination of labour and equipment under the Roads 2000 strategy. This was adopted on realization that available financial resources were inadequate to provide full link improvements in the network(Heggie, 1995).

A recent review has shown that a mere 10 percent of countries in Africa compile basic traffic count and road inventory data, while data on pavement condition, surface roughness, and pavement strength are virtually nonexistent.15 No more than 10 percent of African countries have functioning routine-maintenance management systems and pavement management systems to determine network-wide maintenance priorities. Even fewer supplement such physical planning tools with performance budgeting systems. The remaining countries have neither the data nor the mechanisms and staff needed for analysis. You cannot manage a large road network efficiently without some form of management information system (Heggie, 1995).

Responsibility; The third building block concentrates on creating a consistent organizational structure for managing different parts of the road network. This requires two things: clear assignment of responsibility among different government departments and different levels of government and clear assignment of responsibility among the individual road agencies. The arrangement needs to be based on an accurate road inventory, functional classification of roads, designation of appropriate road agencies, formal assignment of responsibility to each road agency, and clarification of the relationship between the road agency and the parent ministry. Responsibilities to be assigned include those for operation, maintenance, improvement, and development of the road network; for traffic management and for road accidents caused by the road agency's own negligence; and for the adverse environmental impacts associated with roads and road traffic.

At the community level, where roads are generally managed by village councils, higher-level road agencies may provide technical advice but usually leave the local communities to do most of the work on a self-help basis. Financial support from the center is generally limited to meeting the costs of bought-out materials. Rural roads under the jurisdiction of central governments are generally managed by central government feeder roads departments. Those under the jurisdiction of local governments are generally managed by district councils(Heggie, 1995).

Since district councils have limited technical and financial capacities, they are usually encouraged to have their roads managed under contract or to merge with other district councils to create sufficient scale economies to enable the combined network to be managed by a larger road agency. Urban roads are usually managed by urban district councils, while the main trunk road network is generally managed by a central government road agency. International transit routes are critical for Africa and sometimes deserve special treatment. They may either be managed by a dedicated section at the main road agency, as is effectively done in Zambia, or as separate toll roads, as in South Africa. The main road agency usually has responsibility for overall regulation of road traffic, including enforcing axle-weight regulations, which is sometimes done in conjunction with the road transport industry (Talvitie, 1996).Urban road agencies normally oversee activities that affect urban areas, for example, parking control and routing of heavy vehicles in cities. Road agencies should take charge of examining the potential environmental impacts of new road schemes.

2.4 Organizational leadership in the road sub-sector

Management isthe final building block and it focuses on creating a more business-like road agency. Once road users are involved in management of roads, they generally press for the introduction of sound business practices to ensure that their constituents get value for money. They expect clear management objectives, competitive terms and conditions of employment, consolidated budgets, commercial costing systems, and effective management information systems. The most important issue requiring attention is the wide gap between terms and conditions of employment in the public and private sectors, and the impact that this has on staffing and staff morale. An engineer in the private sector in Cameroon normally receives a total remuneration package twice as large as his public sector counterpart (the ratio is five in Tanzania and nearly nine in Zambia)(Heggie, 1995).

As a result, several road agencies have lost most of their staff or are being managed by expatriates earning international salaries paid by international donor agencies. You cannot manage a road agency on a sustainable basis with expatriates or with demoralized local staff who spend most of their time supplementing their incomes. Any serious reform program must address these issues. Tanzania is now trying to define a competitive remuneration package for road agency staff that can be provided within existing civil service regulations (Talvitie, 1996).

Reforms should concentrate on giving each road agency a clear mission and effective management structures, including appropriate management information systems, good accounting systems, and more managerial autonomy so that managers can act commercially. The Ghana Highway Authority has made great progress in this direction by streamlining staffing and disciplinary procedures and introducing a road management system. It has also developed a corporate plan that forms the basis of an annual contract plan between the Authority and the government. These reforms improve market discipline, provide managers with the freedom to operate commercially, and strengthen managerial accountability(Heggie, 1995).

They also encourage a more objective approach to setting priorities, comparing in-house to contract work, and evaluating labor-based work methods. Finally, auditing procedures also need to be improved to ensure that the public gets value for money from road spending. The aim is to ensure that funds allocated for roads are spent on road works and that the work is carried out according to specification. The technical audit usually covers all contract work as well as work done though force account on a sample basis (Shirley, 1989).

2.5 Capacity development and performance of roads management

The introduction of road user charges payable directly to a Road Fund managed by a Road Board is expected to improve management by creating an environment in which a measure of autonomy can be secured and commercial practices can be introduced. Changes are being introduced in parallel in road agencies in contract preparation and award arrangements to ensure suitability of the design and contract documents, with transparent competitive tendering and award. The experience of different countries suggests that while availability of a dedicated source of Road Funds has improved operational efficiency compared to what might have been expected without a Road Fund, transparency in the use of funds has also underscored imperfections in the use of funds. Not all countries have been successful in improving operational efficiency to the same degree. A key impact of the Road Fundhas been that it has greatly facilitated a move towards contracting and the resurgence of the domestic contracting industry, which has brought in train efficiency in the use of resources. With greater user participation, policy makers are more aware of the need to further improve the disbursement arrangements(Robinson, 1988).

Brushett, (2005) asserts that the full implementation of the comprehensive range of reforms willtake a long time despite the progress already made. Decades of neglect coupled with weak capacity of the local construction industry has created a difficult operating environment for the road sector. Sample inspection of contracts in the sample countries during 1998 revealed a number of shortcomings: constraint to local private sector capacity due to lack of skills and insufficient resources; difficulty to achieve quality and value for money mainly because of constrained local engineering capacity that typify the road sector; and existence of a need for strong management framework for the setting up of contracts, procurement of works and contract administration. Limitations in local private sector capacity together with a lack of skills and resources available to road agencies for management of contracts are compromising quality objectives. Maintenance and rehabilitation contracts experience delays and cost overruns

becausetechnical constraints have not been fully recognized before the award of contracts (Harral, 1988).

Traditionally, governments have attempted to carry out the bulk of all maintenance tasks directly, commonly called the force accountapproach to maintenance. Under this technique, the implementing government directly employs labor (either as permanent staff or as temporary hires) and uses this labor along with the government's maintenance equipment to carry out maintenance activities (Harral, et al., 1986).

Several factors have contributed to the frequent use of force accounts. First, the bias toward equipment-based technology common in many developing countries created a situation in which most contractors could not afford the necessary maintenance equipment second; it was often felt that alternative modes of production such as contracting would lead to a lowering of maintenance standards. These views have changed dramatically in recent years with more and more governments attempting to use contracting as the maintenance production modality (Jorgensen and Whitman, 1984).The most important reason for this change has been the realization that under force accounts there are few built-in incentives for efficient production. Unlike contractors, who actively compete for the right to carry out maintenance, force-account employees face no competition and therefore have little incentive to improve efficiency.Contracting for maintenance can, theoretically, have additional advantages. For example, with contractors concentrating on maintenance implementation, road departments can focus exclusively on planning and monitoring maintenance; likewise, private contractors may have greater flexibility in responding to seasonal fluctuations in the demand for maintenance than public bureaucracies.

Harral(1986) note, as well, that where maintenance has been a largely ignored activity, contractors can forman effective lobby for increased or continued funding of routine maintenance activities.This is not to imply that contracting techniques have no potential disadvantages. By its very nature, this is not to imply that contracting techniques have no potential disadvantages. By its very nature, it is extremely difficult to plan for emergency maintenance; therefore, it may still be necessary for the

roadauthorities to retain some maintenance capabilities in order to respond quickly to emergency needs. Likewise, if contracts are to be monitored, they must be well specified. This requires considerable input on the part of the contracting agency, especially when specifying particular tasks that must be performed, such as repainting specific signs, fillingparticular potholes`, etc. The costs of administering (planning, writing, and monitoring) such contracts may beas great as directly overseeing the process. Furthermore, a contract can reduce flexibility on the part of the maintenance producer since the legal consequences of not following the contract to the letter may lead to an inappropriate response to the maintenance task being faced.

Even when there is an apparent supply of adequate contractors, the efficiency gains from contracting will occur only if there is real competition among those vying for the right to conduct the maintenance activity. Collusion is particularly problematic at lower levels of government, where local elites or other powerful groups can exclude others from participating in the process. An interesting recent case analysis of rural road contractors in Bangladesh revealed at least three different methods by which contractors colluded on contracts (Loft, 1989).

Under aseasonal cartel, the colluders rigged their bids on tender offers so as to share nearly equally the total construction activity to be carried out during a season. *Ad hoc* cartels are also sometimes formed for a single tender offer, with payoffs given to the predetermined losers. Loft also found that in some instances bidders prearranged to bid exactly the same amounts on a contract under the expectation that the public agency would randomly choose the winning bidder (Heggie, "Commercializing Africa's Roads: Transforming the role of the Public Sector". SSATP Working Paper 10, 1994).

There are other issues concerning maintenance contracting that are not addressed in the literature. One pertains to the longer-term liability of contractors. While it may be simple to observe whether some maintenance tasks are or are not performed (for example, a culvert either is or is not cleaned or vegetation has or has not been cleared), not all maintenance is so easily observed (for example, whether proper techniques

havebeen used to fill potholes). Ideally, contractors would be liable for failures that arise due to improper application of maintenance procedures (Shirley, 1989).

Such liability requires an adequate court system to ensure its enforcement and the ability to assess causality for road failures. While court systems in at least some developing countries may be adequate, two features of road deterioration that have been emphasized throughout this paper make assessment of causality extremely difficult One is the relatively long amount of time required for poor or improper maintenance to make itself apparent; a second is that road deterioration can and will occur in spite of adequate maintenance. By the time the consequences of improper maintenance procedures make themselves apparent, the contractor may no longer be available to bear the consequences. Furthermore, it may be difficult, if not impossible, to determine whether it was improper maintenance or some combination of improper road use (such as overweight vehicles using the road or the weather) that was the actual cause of the road's deterioration (John Riverson, 1991).

Experience suggests that contracting for road maintenance in developing countries has been generally successful. A World Bank review of nine different countries found that roads under contract were well-maintained in at least seven of them (Harral&Faiz, 1988).

The authors concluded that "By and large, contract maintenance tends to be more cost-effective than maintenance by direct labor, and contractors have been attracted to maintenance opportunities, even in remote areas." Evidence from PontaGrossa in Brazil indicated that force-account maintenance costs 60 percent more than that by contractors. Brazilian contractors usually outperformed the permanent WOIX forces in terms of productivityas well (Harral, et al., 1986). When problems developed, they were mostly due to mistakes on the part of the government concerned and, after being identified, were easily rectified.

2.6 Legal and regulatory reforms

The service delivery in road management has been greater in countries where reforms have been underpinned by other legislation like the Public Procurement and Public Finance Acts In Tanzania where a “2nd generation” road fund was established in 1999 and a semi-autonomous agency in 2000; and backed by a Public Finance Act and a Public Procurement Act (Addo-Abedi F Y, 2007).

According to (Addo-Abedi F Y, 2007), the management of the national network has shown considerable improvement. Some of the benefits apart from the improvement of the condition of the national network cited above include the streamlining of procedures in the Tanzania National Roads Agency (TANROADS) for efficiency and effectiveness.He further indicates that the Public Procurement act has brought discipline and accountability in the procurement of works while the Public Finance Act has prevented over-expenditure which had not been unusual in the past.

Zambia was amongst the first countries to reform its road sector management in the 1990s and set up a National Roads Board in 1994 to manage a “second generation” road fund that had been created in 1993. This has been followed by the setting up of roads boards in Ethiopia, Ghana and Malawi in 1997. The Kenya Roads Board Act was enacted by the Parliament in January 2000 and a Board established in July 2000(Brushett, 2005).

The objectives and role of the KRB are defined in the Kenya Roads Board Act,1999 and as enacted by the Parliament in January 2000. The establishment, powers and functions of the road board are published in the Gazette. There was a pre-existent road fund in Kenya since 1994for which the management was to be assumed by the Board on its establishment. According to Brushett, (2005), the road board has a Chairman appointed by the President from the private sector for a period of three years who is eligible for re-appointment for one further term. The road board has all powers necessary for the performance of its functions under the Act and decides on remuneration to the board members after consultation with the Minister of Finance. Similar to experience in other countries, it has been easier to set up institutional arrangements but implementation

of concomitant policy and legislative framework has been more difficult. This process has been made more difficult by a recent legal challenge to the constitutionality of the Act setting the road board into place.

Public procurement is monitored and undertaken through an Act of parliament in which there are set rules and regulations to be followed. Currently in Kenya we have the Public Procurement and Disposal Act (PPDA), 2005, which became effective from 1st January 2007 and the Public Procurement and Disposal Regulations (PPDR) (2001), revised in 2006. The regulations help in the application and implementation of the law.

The main objectives of public procurement in Kenya according to the PPDA 2005 are: to maximize economy and efficiency; to promote fair competition; to promote integrity; and to increase transparency and accountability and promote local industry (National Secretary, National Taxpayers Association & Executive Director, Centre for Governance and Development, 2009).

Creation of an executive Roads Fund Board in year 2000 to oversee the maintenance, rehabilitation and development of the road network was an important first step in strengthening the sector. More radical reforms are however now urgently needed in order to establish an effective and efficient management of the sub-sector. This is particularly true in terms of creating the right institutions and mechanisms to carry out road maintenance. A comprehensive legal review is also required to resolve the problem of 22 separate legal statutes that affect management of roads and currently prevent the full operationalization of KRB. Amongst the key recommendations of the KRB Roads Policy and Strategy study report is the establishment of autonomous road implementing agencies under KRB, and assignment of network responsibilities to them. In particular, a new national highways agency or authority should be established. This should be a new organization that is lean and commercially oriented, and not just a transformation of the Roads Department, if the existing institutional culture is to be changed (Joint statement of development partners for the Kenya Consultative Group Meeting, 2005).

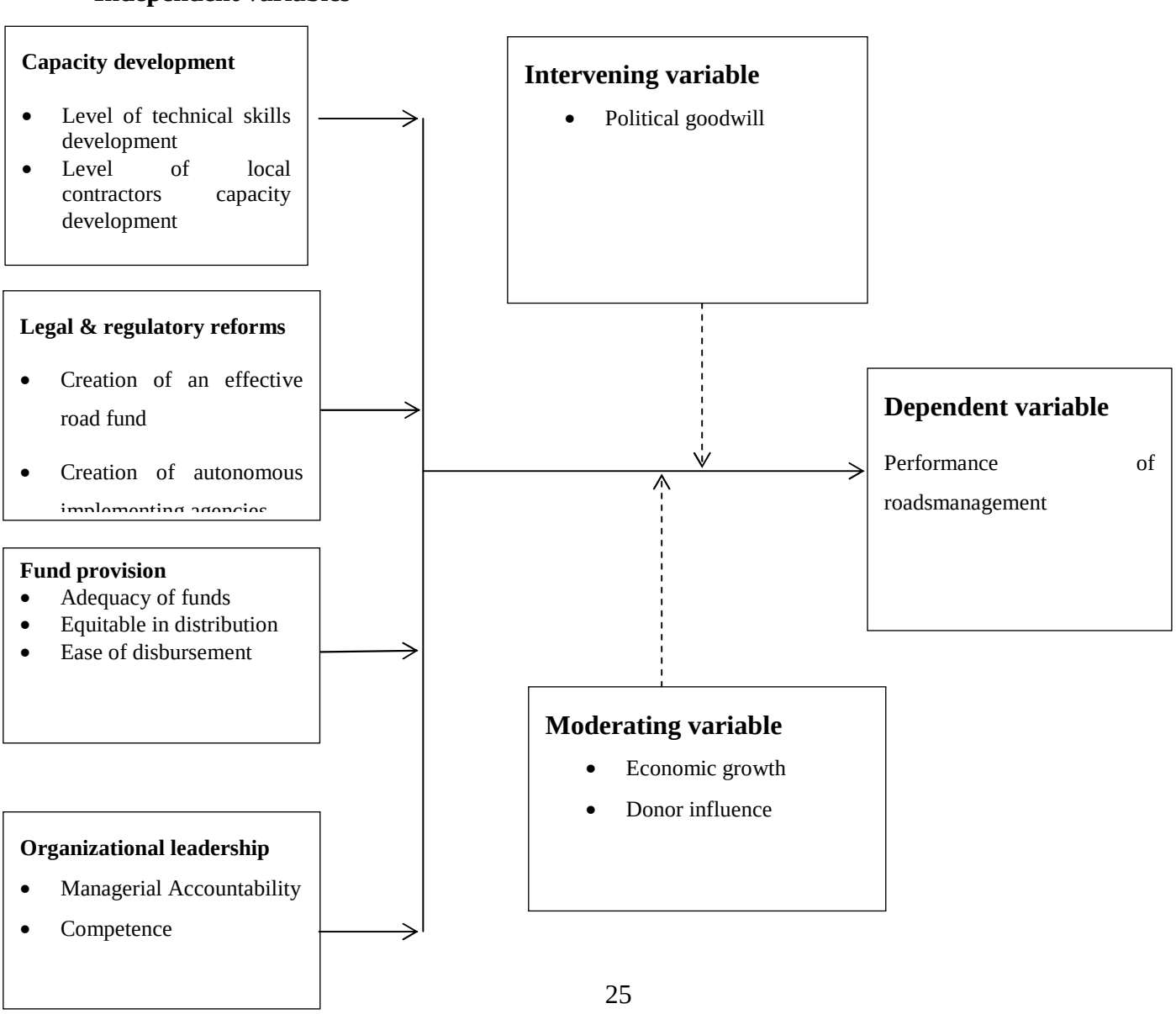
The new agencies receiving funds from KRB should be required to sign-up to annual participation agreements setting out funding conditionalities determined by KRB.

The management of axle load control requires reform. Too much time and money is unnecessarily being lost due to inefficient management and corruption at weighbridges, making this one of the key non-physical barriers in regional and national trade. Development partners have offered funding for a best options study and procurement of appropriate systems and equipment. Private management under concession agreements is also under consideration (gitonaw, 2005).

2.7 Conceptual framework

The conceptual framework identifies and indicates the effects of independent and the dependent variables. The conceptual framework in this research will help the researcher identify the various reform areas, which have been implemented, and how they have influenced the performance of management of the road sub sector in Kenya.

Figure 2.1: Conceptual model.



2.8 Summary of literature review

From the foregoing review of related literature, it is clear that most Sub-Saharan Countries have embraced the call for reforming the roads sub-sector and various countries have achieved different levels of reforms as recommended by the Sub-Saharan Africa Transport Policy.

Evidence suggests trends in improvement in operational efficiency, aided by adoption of commercial practices and transparency in the use of funds and road users are seeing improved quality of road networks in reforming countries – leading to reduced vehicle operating costs and travel times.

In Kenya, a road fund; KRB was established in year 2000 while the implementing agencies; KeNHA, KeRRA and KURA have been established following enactment of Kenya Roads Act in 2007. No study has yet been done on assessing the impact of the road agencies on road management in Kenya and this gap is what this study seeks to fill.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents a discussion of the research methodology that was employed in this study. It describes research design, study population, sample size and sampling design, data collection methods and data analysis methods that were applied in the study.

3.2 Research Design

According to Coopers & Schindler (2006) research design is defined as the map for the collection, measurement and the analysis of data. This study adopted a cross-section study design to study the influence of road sub-sector reforms on performance of roads management in Kenya, case of Kenya national highways authority south rift region. Cross-sectional studies are carried out at one time point or over a short period (Bland, 2001).

Mugenda&Mugenda (2003) posit that descriptive research design method is appropriate for studies that look into specific issues where there is a clear definition of the problem. Descriptive research determines and reports the way things are or answers questions concerning the subjects in the study.

Descriptive designs are used in preliminary and exploratory studies to allow the researcher to gather information, summarize, present and interpret for the purpose of classification (Creswell, 2003).

3.3 Target population

This study targeted two groups that made up the target population: thefirst group comprised of the population of the entire staff of KeNHA in south riftregionwho are fifteen (15), on whom a survey was conducted. Information from one key informant

wasalso sought; this was a member of the national managerial team fromKeNHA head office, Nairobi.

3.3.1 Sample size

This study involved all the fifteen employees of KeNHA in south riftregion. A censuswas conducted to all of them owing to the small number of the target population. Also, an in-depth interview was conducted on a key informant (a senior manager fromKeNHA head office) bringing the sample population to 16.

3.3.2 Sampling method

Purposive samplingmethod was adopted and due to the small target population size, all the employees of KeNHA south rift region were selected for interview while one staff of the management level from KeNHA head office wasalso selected and an In-depth interview conducted on him.

3.4 Data collection methods

In this study both primary and secondary sources of data were used. Primary data were gathered using pre-coded researcher administered semi structured questionnaires. There were two sets of questionnaires; the first questionnaire targetedall the employeesofKeNHA South Rift Region while the second one wasused to interview the managerial staff from KeNHA head office, Nairobi.

The researcher interviewed the respondents using the semi structured questionnaires trying to be as accurate as possible from the set questions in the questionnaire. The interview avoided asking leading questions but generally probing questions was used to convey the intended meaning of the questions. The advantage of the semi structured questionnaires is that they are administered personally and hence the response rate is higher; the researcher and research assistant administering a semi-structured questionnaireaids the respondent with question that are not readily clearsince the respondents have different educational background.

3.5 Validity and Reliability

This section discusses the validity and reliability of the instruments that were used.Validity refers to the extent to which an instrument measures what it is supposed to measure (Razavier&Ary, 1972). Reliability is the extent to which a measuring device is consistent in measuring whatever it measures (Razavier&Ary, 1972).

3.5.1Validity of the instruments

To ensure validity of the questionnaires a pilot study was carried out with three randomly selected supervisory level KeNHA staff from head office, Nairobi. This pilot study is carried out before the actual data collection is done. Through this pilot study, the areas in the questionnaire which need refinement areaddressed.

Data was collected over a two day period owing to the small number of the respondents. This alsoensured that no major events or services in the roads sector are brought forth during the course of the study as to affect the view of part of the interviewees. The questionnaires werealso given to research experts like my research project supervisor who advised on changes aimed at ensuring that the questionnaires measured the intended variables.

3.5.2 Reliability of the instruments

Reliability is concerned with estimates of the degree to which a research result yields consistent results or data after repeated tests. Reliability was tested using the Cronbach's alpha that was calculated from questionnaires that were piloted on the randomly selected KeNHA staff and alterations were made to improve reliability of the tool. The Cronbach's alpha indicates the extent to which a given group of test items can be treated as a measure of a single latent variable (Cronbach, 2001). Cronbach's alpha for the tool was found to be greater than 0.7; was 0.74 andthus it was considered acceptable.

3.6 Operationalization of Variables

Table 3.1: Operationalization of Variables table

Research questions	Variables	Indicators	Measure(s)	Measuring Scale	Tools of data collection Survey	Type of analysis	Tools of analysis
1. What are the institutional reforms that have been undertaken on the road sub-sector and their effects on roads management in Kenya?	Institutional reforms undertaken.	Degree of autonomy	Fullyautonomous, semi-autonomous, non-autonomous.	Nominal	Questionnaires	Mode	Correlation
		Responsibility clearly defined	Clearly defined responsibility, responsibility not clear, overlapping responsibility	Nominal	Questionnaires	Mode	Correlation
		Effectiveness of the institutions	Highly effective, averagely effective, not effective	Ordinal	Questionnaires	Median	Correlation
2. To what extent does the legal and regulatory reforms in the road sub sector influence the performance of roads management in Kenya?	Legal reforms	The rate of reforms	The number of road sector related legislations passed.	Ordinal	Questionnaires	Median	Correlation
		The pace of reforms	The period taken to enact the above legislation.	Ordinal	Questionnaires	Median	Correlation
		The effectiveness of the legislations	The extent to which the enacted legislations have impacted on roads management in Kenya	Ordinal	Questionnaires	Median	Correlation
3. How does the improved local capacity development influence the performance of roads management in Kenya?	Capacity development	Staff skills development	Highly skilled staff, staff not highly skilled, semi-skilled staff.	Ordinal	Questionnaires	Median	Correlation
		Contractors capacity development	Efforts made to promote local contractors' capacity	Ordinal	Questionnaires	Median	Correlation
		Effectiveness of management	The degree of competence and effectiveness of the organization's	Ordinal	Questionnaires	Median	Correlation

			management.				
4.What is the influence of the level of funding for roads maintenance on the performance of roads management by the established implementing agencies?	Funding for maintenance	Adequacy	How adequate is the funds provided for roads maintenance?	Ordinal	Questionnaires	Median	Correlation
		Equity in distribution	How equitable is the distribution of funds in the parts of the country?	Ordinal	Questionnaires	Median	Correlation
		Timeliness in funds disbursement	How timely are the funds disbursed to the implementing agencies?	Ordinal	Questionnaires	Median	Correlation
5. How does the organizational leadership of the implementing agencies influence the performance of roads management in Kenya?	Organizational leadership	Managerial accountability	How clear is the responsibilities of the implementing agencies management	Ordinal	Questionnaires	Median	Correlation
		Managerial competence	Does the method used to recruit the management of the implementing agencies ensure competence	Nominal	Questionnaires	Mode	Correlation
		Management's commitment to duty	How committed is the top management to the goals and objectives of the implementing agencies	Ordinal	Questionnaires	Mode	Correlation

3.7Data analysis techniques

Data analysis refers to examining what has been collected in a survey and making deductions and inferences (Kombo& Tromp, 2000).

In this study, the following data analysis process was applied; first, checking the questionnaires to ensure that they are completely filled and they are consistent and clear. Secondly, the data was coded to ensure that it was quantitatively analyzable, thirdly, data was keyed into a computer; and finally the data was analyzed using the Statistical Package for Social Sciences (SPSS).

Both quantitative and qualitative statistical techniques were used to analyze the data. The qualitative data was analyzed using descriptive analysis. Quantitative data was then analyzed using descriptions like mean, standard deviation and correlation coefficients. The findings were presented in form of tables.

3.8 Ethical considerations

Research ethics is an integral part of the graduate research and this particular one is no exception. The process, steps and processes of this research were recorded with sufficient detail for others to check and make it possible to replicate the work and reproduced work was accorded proper citation.

Effort was put so that respondents gave their inputs freely without any form of coercion while their views were presented in the report with anonymity to prevent cases of victimization. Data was presented with highest form of integrity to prevent researcher biases that may wrongfully tarnish or praise an individual or institution. Finally every scientific result was carefully prepared, and scrutinized to avoid misrepresentation of results.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents findings of the study. The data sought to examine the influence of road subsector reforms on the performance of roads management in Kenya. Data was collected using questionnaires that targeted employees of KeNHA south rift region and a senior managerial staff at the national level. Data was coded and entered into the computer and all analyses were done using SPSS 20. The output was presented using tables. Data was analyzed in line with the objectives. The first section of the questionnaire captured demographics.

4.2 Response rate

The study had a target sample of 16 respondents which was divided into two groups of 15 employees of south rift region and a senior manager from head office. A total of 13 questionnaires were collected giving a response rate of 81.3% which was found significant enough to establish the objectives of the study (see Table 4.1).

Table 4.1: Response rate

Type of respondent	Number of questionnaires issued	Questionnaires returned	Response rate	Aggregate response rate
Regional staff	15	12	80%	81.3%
National	1	1	100%	

The given response rate can be attributed to the reason that some of the staff members were away for official duty or on leave so they were not available to respond to the questions.

4.3 Demographics of respondents

4.3.1 Distribution by gender

Table 4.2: Gender of respondents

Gender	Frequency	Percentage
Male	9	75
Female	3	25

From the study it was found that 75% of the respondents were males while only the remaining 25% were females. This may be attributed to the fact that the core function of the agency is road construction and maintenance and therefore largely employs engineers and technical personnel; these professions were until recently deemed to be predominantly male professions. The proportion of males in the profession of engineering is far much higher than that of females.

4.3.2 Distribution by age

Table 4.3: Age of respondents

Age	Frequency	Percentage	Cumulative Percentage
21-30	4	33.3	33.3
31-40	5	41.7	75.0
41-50	2	16.7	91.7
51 and above	1	8.3	100

Table 4.3 shows that the age profile of the respondents was disintegrated into five categories which were: 18-20, which had no respondents; 21-30 which had 33.3% of the respondents falling under it; 31-40 had 41.7% of the respondents falling in this group; 41-50 had 16.7% of the respondents falling in it and finally 51 and above where only one respondent representing 8.3% falling into it.

4.3.3 Distribution by terms of employment

Table 4.4: Terms of employment

Terms of engagement	Frequency	Percentage
Direct P&P	6	50
ex-Ministry	3	25
Contract	3	25
Total	12	100

As seen in the preliminary results in table 4.4, it was established that only fifty percent of the respondents were employed by the agency directly on permanent and pensionable terms as shown in table while 25% of the staff were deployed from the ministry of roads and the remaining 25% were employed on contract basis. This depicts a deliberate effort by the Authority to recruit talented and competent staff while retaining expatriates from the ministry with vast experience in the road sub sector.

4.3.3.1 Cross tabulation of level of education/ Terms of employment

Table 4.5: Highest level of Education Attained / Terms of employment Cross tabulation

		Terms of Employment			Total
		Direct P&P	ex-Ministry	Contract	
Highest level of Education Attained	1 Secondary	0	0	1	1
	2 College	2	2	2	6
	3 Bachelors	3	1	0	4
	4 Graduate	1	0	0	1
Total		6	3	3	12

All of the employees who were employed on direct permanent and pensionable indicated they had tertiary education with 67% of the respondents under the same terms having a Bachelor degree or higher. Of the respondents deployed from the ministry of roads, only one representing 33.3% of the respondents had a Bachelor degree as reflected in table 4.5 above. This is an indication that the agency has sought to tap qualified and skilled staff.

4.3.4 Distribution by work period with KeNHA

Table 4.6: Work period with KeNHA

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
less than a year	1	8.3	8.3	8.3
1-2 years	2	16.7	16.7	25.0
more than two years	9	75.0	75.0	100.0
Total	12	100.0	100.0	

Most of the respondents (75%) have been with KeNHA for more than two years with only one respondent representing 8.3% having been with the agency for less than one year and the rest (16.7%) have stayed for one to two years. This depicts the deliberate effort by the agency to retain talent.

4.3.5 Distribution by department

Table 4.7: Respondents' department

Department	Frequency	Percentage
1 Technical/Maintenance	7	58.3
2 Procurement	2	16.7
3 Finance	2	16.7
4 HR	1	8.3

It was found that 58.3% of the respondents belonged to the technical/maintenance department, the procurement and finance departments both had a representation of 16.7%

of the respondents each. The human resource department had 8.3% representation. The finding demonstrates that maintenance function is the core function in KeNHA while the others are support functions.

4.4 Test of hypothesis

Respondents' views of four statements that were found to be reliable;(i) management of the road network has become transparent since the reforms were introduced; (ii) since the inception of KeNHA there has been a more effective management of the highways; (iii) dedicated agencies like KeNHA have reduced corruption and resource wastage; (iv) introduction of road fund has helped increase the length of road network being maintained. Respondents' answers for every statement were coded such that a score close to 5 indicated a strong agreement with statement while one close to 1 indicated strong disagreement with the statement. The score for each respondent on each statement were coded and summed up and the total was translated to a new variable known as score. A score of three for each variable was deemed to be the average and it was multiplied by four so as to represent a sum of average for all the statements and the resultant value (12) was used as the test value for the independent t-test. The following tables were produced;

Table 4.8: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Score	12	16.00	2.412	.696

The sum from the responses produced a mean of 16 and a standard deviation of 2.412 from 12 responses under the transformed score variable.

Table 4.9: One-Sample Test

	Test Value = 12

	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Score	5.745	11	.000	4.000	2.47	5.53

The test produced a t-value of 5.745 with 11 degrees of freedom and a mean difference of 4 and a 95% C.I of between 2.47 and 5.53. The significant value of the two tailed t-test is .000 which is less than .05 thus there is a significant difference and thus the null hypothesis: H_0: there is no significant relationship between improved local capacity development on the performance of roads management by the implementing agencies in Kenya, is rejected and the alternative hypothesis: H_A: there is significant relationship between improved local capacity development on the performance of roads management by the implementing agencies in Kenya, holds.

4.5 Analysis of the research objectives

This study had four objectives and they are analyzed here below as follows;

4.5.1 Influence of local capacity development on the performance of roads management in Kenya.

Table 4.10: Local construction capacity

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	2 Satisfactory	10	83.3	83.3	83.3
	3 Neither dis/satisfactory	1	8.3	8.3	91.7
	4 Dissatisfying	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Majority of the respondents (83.3%) were of the view that the local construction capacity is satisfactory in supporting the construction and maintenance programs of KeNHA, 8.3% of the respondents were neutral while another 8.3% expressed dissatisfaction with the local construction capacity as shown in table 4.10 above.

Table 4.11: Road network condition over time

	Condition	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	1 good	4	33.3	33.3	33.3
	2 fair	8	66.7	66.7	100.0
	Total	12	100.0	100.0	

The response to the question of how KeNHA has contributed to improved operational efficiency in south rift region, majority of the respondents (66.67%) observed that the road network has become fair over time since the formation of the agencies while only 33.33% of the respondents have a view that the roads have become good over the same period. This may point that there could be certain challenges that are preventing the agency from effectively maintaining the road network as was envisaged in the recommendations of the studies previously done which recommended commercialization of management of roads management as the solution to effectively deal with the poor conditions of roads infrastructure in Africa.

4.5.2 Influence of legal and regulatory reforms in the road sub sector on the performance of roads management in Kenya.

Table 4.12: Subsector reforms

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	1 Very satisfied	1	8.3	8.3	8.3
	2 Satisfied	8	66.7	66.7	75.0
	3 Neither dis/satisfied	2	16.7	16.7	91.7
	4 Dissatisfied	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

To investigate the staff satisfaction on the influence of road subsector reforms on the management of road network in the south rift region, a five point Likert scale was used where 1indicated Very satisfied through 3 neither satisfied or dissatisfied and 5-very dissatisfied. Table 4.12 illustrates that most respondents (75%) expressed satisfaction and 8.33% were very satisfied. 16.67% of the respondents were neutral and the remaining 8.33% were dissatisfied. None of the respondents claimed to be very dissatisfied.

Table 4.13: Transparency in the tendering process

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	1 Yes	10	83.3	83.3	83.3
	3 Don't know	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

When asked if they thought that the formation of the agencies improved transparency in the tendering process and awarding of contracts in the roads sector, 83.33% of the respondents agreed while 16.67% of the respondents said that they do not know if the statement holds (see table 4.13).

4.5.3 Influence of the level of funding for road maintenance on the performance of roads management by the implementing agencies in Kenya.

Table 4.14: Adequacy of funding

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	1 Yes	3	25.0	25.0	25.0
	2 No	7	58.3	58.3	83.3
	3 Don't know	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Most of the respondents (58.33%) expressed the view that they do not think south rift region receives adequate budget which it needs to maintain its road network. Only 3 (25%) of the respondents claimed that the region receives adequate funding while 16.67% posited that they do not know if the funding is adequate. This finding could be one of the explanations as to why despite the authority having competent and qualified staff, inadequate funding has prevented it from significantly improving the condition of road network thus the views by most respondents in table 4.11 above that the condition of road network in south rift region has become fair over time while only a smaller proportion views that the network has become good.

4.5.4 Influence of organizational leadership of the implementing agencies on the performance of roads management in Kenya.

4.5.4.1 Perceived autonomy

In a bid to establish the influence of organizational leadership of the implementing agencies on the performance of roads management in Kenya, respondents were asked what they think of the autonomy of the agency from other government organizations. They were supposed to choose their response from three categories that were availed: 1-Fully autonomous, 2- Semi-autonomous, 3- Non- autonomous. The results of the responses on the item are presented in the table 4.15 below.

Table 4.15: Perceived autonomy

		Frequency	Percent	Valid Percentage	Cumulative Percentage
	1Fully autonomous	2	16.7	22.2	22.2
	2Semi-autonomous	5	41.7	55.6	77.8
	3Non-autonomous	2	16.7	22.2	100.0
	Total	9	75.0	100.0	
Missing	99	3	25.0		
Total		12	100.0		

Of the respondents interviewed, 3 of the respondents did not respond to the question, this made up 25% of the targeted respondents. Of the successful responses most of the respondents (55.56%) said that the agency is semi-autonomous while 22.22% claimed that the agency is fully autonomous and another 22.22% claimed that the agency is non-autonomous.

4.5.4.2 Public participation

Respondents were also asked if they agreed with a statement whether KeNHA has improved public participation in the management of roads and a summary of the results presented in table 4.16.

Table 4.16: Public participation in the management of highways/national roads

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	2 disagree	1	8.3	8.3	8.3
	3 Neither dis/agree	1	8.3	8.3	16.7
	4 Agree	6	50.0	50.0	66.7
	5 Strongly Agree	4	33.3	33.3	100.0
	Total	12	100.0	100.0	

Majority of the respondents (50%) agreed with this statement, 33.3% of the respondents claimed to strongly agree, 8.3% of the respondents were neutral while another 8.3% disagreed.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings, discusses, draws a conclusion from them and makes recommendations and suggestions for further studies.

5.2 Summary of findings

The findings of the study established that there is significant influence of improved local capacity development on the performance of roads management by the implementing agencies in Kenya. Majority of the respondents reviewed the achievements of the road subsector reforms and agency positively. Local construction capacity to support the construction and maintenance programs of the authority was rated to be satisfactory by a big majority of the respondents.

Majority of the staff employed directly by the agency directly were generally more qualified and they had stayed with the organization since inception, talented staff retention pointed to better remuneration of staff thus they were more motivated and improved staff welfare.

Respondents expressed that the reforms had improved public participation, this as the senior management employee pointed out can be attributed to the fact that public participation has been made mandatory during feasibility and design stages of all projects undertaking by the authority. Feedback from stakeholders is also welcome during implementation phase. There is transparency in the tendering process which has in turn

promoted the local construction capacity as well as commercialization of the maintenance activities.

The budget allocated to the regions came out as a major problem from the result of the study, majority (58.3%) of the respondents stated that the funds were not sufficient. Though the allocation of funds to different roads was done using the Annual Roads Inventory Conditions Surveys (ARICS), Government bureaucracy and inadequate funding still dogs the efficient discharge of maintenance responsibilities. There is political meddling in road sector operations.

From the study, majority of the respondents said that the state of the road network was fair over the period of time the agency was in charge while only a proportion that is just slightly over a third of the respondents, who think the state of the road network was good over the same period of time.

The respondents proposed a few solutions for the implementing agencies to be more effective to manage the road sub-sector in Kenya: strengthening the quality control department/function; selecting the right road contractors, those who have the capacity to successfully execute construction and maintenance contracts; de-centralizing the tendering process and payment of contractors to the regions; barring of employees from participating in tendering process and having tailor made procurement practices for the industry.

5.3 Discussion of findings

The results of the study presented in chapter 4above are discussed in this section.

5.3.1 Influence of improved local capacity development on the performance of roads management by the implementing agencies

Most of the respondents expressed the view that there is significant improvement of the roads management by the road implementing agencies as a result of improved local capacity that in turn resulted from reforms in the roads subsector. The test of hypothesis

using one sample t-test showed that there is significant influence of improved local capacity development on the performance of roads management by the implementing agencies. The senior employee of the national managerial team posited that the efficiency of implementing roads programs has increased tremendously and that the project turnaround time has also improved. Despite this indicator, Brushett, (2005) asserts that the full implementation of the comprehensive range of reforms will take a long time despite the progress already made. He goes ahead to posit that decades of neglect coupled with weak capacity of the local construction industry has created a difficult operating environment for the road sector. Whereas it is known that capacity development requires a collaborative approach by all stakeholders.

5.3.2 Influence of legal and regulatory reforms in the road sub sector on the performance of roads management in Kenya.

The study showed that majority of the respondents expressed satisfaction with the legal and regulatory reforms in the road subsector as brought about by the road subsector reforms though a good number were either indifferent or unsatisfied.

Most of the respondents were of the view that the agencies improved transparency in the tendering process and awarding of contracts in the roads sector by strictly adhering to and abiding by the Public Procurement Law and Regulations. This is a strong indicator and a reflection of the success of the legal and regulatory reforms as applied by the implementing agencies. The PPDA, 2005 seeks to promote transparency, fairness and economy by declaring open tendering method as the default method.

KeNHA is a state corporation and therefore has a commercial orientation. Higgie (1995), Brushett (2005) and Mabogunje (1992) assert that the key concept required to overcome the challenge of poor conditions of roads in Sub-Saharan Africa is commercialization; which is bringing roads into the market place and manage them like any other business enterprise. KeNHA procures construction and maintenance works mainly from local contractors who compete through competitive bidding and this has in turn promoted growth and improvement of the local construction capacity.

5.3.3 Influence of the level of funding for road maintenance on the performance of roads management by the implementing agencies in Kenya.

Majority of the respondents expressed the view that south rift region does not receive adequate funding for road maintenance while a significant number of respondents think that the funding for road maintenance is not adequate. Most of the same respondents think that the road network is in a fair condition while a minority believes that the condition of the road network is good. This reflects on the performance of the implementing agencies and is a strong indication that the implementing agencies though exercise their mandate of managing the roads in a commercial manner, they require more funding for road maintenance.

Kenya, like most of the Sub-Saharan countries has managed to establish a dedicated road fund (KRB) which collects Roads Maintenance Levy Fund (RMLF), which is the main source of fund for roads maintenance. Despite the improvements recorded in the use of the fund to improve road conditions, the funds are far from meeting the required maintenance needs. Gwillan& Kumar (2003) report that most sub Saharan countries are now meeting between 30% and 80% of their road maintenance needs while Heggie (1995) assert that all governments in Africa are seriously short of fiscal revenues. Kenya is not exceptional in this fiscal constraint experienced by most African countries.

5.3.4 Influence of organizational leadership of the implementing agencies on the performance of roads management in Kenya.

Following the survey, majority of the successful respondents expressed that they perceive the agency as being semi-autonomous, about a fifth of the successful respondents view the agency as fully autonomous and a similar proportion perceiving the agency as non-autonomous. This may be explained by the fact that the implementing agencies get funding from the government and KRB and that they are under the ministry of transport and infrastructure. This means that the Agencies are under the control of the parent ministry to some extent.

The findings that KeNHA is keen in recruiting and retaining qualified and competent staff, through attractive remuneration is an indication of sound leadership. Also the commitment of the management to uphold the procurement law in order to promote transparency and fairness in the award of contract is an indication of effective organizational leadership.

According to Addo-Abedi,(2007), the management of the national network improved considerably after the roads subsector reforms were undertaken. Heggie, (1995) posited that reforms should concentrate on giving each road agency a clear mission and effective management structures, including appropriate management information systems, good accounting systems, and more managerial autonomy so that managers can act commercially.

5.4 Conclusions

This study examined the influence of road sub sector reforms on the performance of roads management in Kenya. The study covered the objectives and the following conclusions were drawn:

1. The road subsector reforms were effective in improving the efficient management of roads.
2. The legal and regulatory reforms in the road sector have influenced positively roads management in Kenya.
3. Funding for roads maintenance was not adequate to fund the intended activities.
4. The organizational leadership is important for organization’s success and KeNHA leadership has performed well so far.

5.5 Recommendation

1. The government should review the procurement Law/Regulations so that they should be tailored to suit the unique nature of road construction and maintenance works.
2. The government through the relevant ministries should to improve capacity of the local contractors so that they can compete effectively against foreign contractors.
3. Road funds allocation and operations of the implementing agencies should be freed off politics and government bureaucracy. More ways of enhancing the road fund kitty should also be explored for adequate funding for road maintenance to be achieved.

5.6 Further research

Following the findings of this study, further study on the following is deemed necessary;

1. Since this study was restricted to South Rift Region of KeNHA because of time and resources factor, a wider scope study can be undertaken so as to validate the conclusions of this study.
2. Examine the extent of implementation of the wide range reforms in Kenya as were recommended by the RMI.
3. Assessment of the local construction capacity in the various regions in the country.
4. The effectiveness of KURA and KeRRA in management of the road network under their jurisdiction.

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APPENDIX 1

Research Authorization Letter

APPENDIX 2

Questionnaire to KeNHA staff

Good morning/afternoon, Thanks for taking the time to talk with us, my name is PETER KABUGU NDICHU, I am currently undertaking a Masters Degree in Project Planning and Management at the University of Nairobi. In fulfillment of my dissertation I am researching on influence of road sub-sector reforms on the performance of roads management in Kenya; case of Kenya National Highways Authority,South Rift Region. You may be assured of complete confidentiality. May I ask you a few questions?

1. Respondent's Gender (Don't ask)

- Male ☐
- Female ☐

2. Age

18-20years	
21-30years	
31-40years	
41-50years	
51years and Above	

3. How long have you been working with KeNHA??

Lessthan1year	
1-2years	
Over 2years	

4. What are your terms of services with KeNHA?

Direct recruitment, on permanent and pensionable terms	
On deployment from the Ministry of roads	
On contract	

5. In which department are you?

Technical/Maintenance	
Procurement	
Finance	
Human resource Management & Development	
ICT	

6. What is the highest level of education completed?

7. How would you rate the local construction capacity to support the construction and maintenance programmes of the authority in the region?

V.satisfying	Satisfactory	Neither dis/satisfactory	Dissatisfying	V.Dissatisfying
1	2	3	4	5

8. If coded 4 or 5 above, what needs to be done in your opinion to strengthen the local construction capacity?

Fully Autonomous	
Semi-autonomous	
Non-autonomous	

9. Thinking about the intended road subsector reforms, would you say KeNHA is? (tick one)

10. What is your position about KeNHA's mandate?

Know it and can state it	
Know it but can't remember it clearly	
Can't remember	

11. How does your department/section contribute towards achieving the goals and mission of KeNHA?

12. How has KeNHA contributed to improved operational efficiency in roads maintenance in this region?

Road network is good over time	
Road network is fair over time	

Road network is poor over time	

13. Thinking about the road network in the south rift region how satisfied are you with the road subsector reforms? (Tick one).

14. In your opinion how could the implementing agencies be more effective to manage the road sub-sector in Kenya?

15. In your opinion has the formation of agencies improved transparency in the tendering process and awarding of contracts in the roads sector?

Yes	
No	
Don't Know	

Very satisfied	satisfied	Neither dis/satisfying	Dissatisfied	Very dissatisfied
1	2	3	4	5

16. Using a five point scale given please rate the following statements (mark only)

	Strongly Disagree	**Disagree**	**Neither agree nor Disagree**	**Agree**	**Strongly agree**
Management of the Road network has become transparent since the reforms were introduced					
Since the inception of KeNHAthere has been effective management of the Highways has improved greatly.					
Have dedicated agencies like KeNHA has reduced corruption and resource wastage.					
KeNHA has improved public participation in the management of highways					

The introduction of a roads fund has helped improve the number kilometers of road.					

17. Does south rift receive adequate budget it requires to maintain its network?

Yes	
No	
Don't Know	

18. What informs the way the region allocates the budget it receives among numerous roads it maintains?

19. Has the road subsector reforms made it easy road agencies like KeNHA to pay contractors in good time?

Yes ☐

No ☐

20. If No, Why not?

Thank You

APPENDIX 3

Interview Schedule

Good morning/afternoon, Thanks for taking the time to talk with us, my name is PETER KABUGU NDICHU, I am currently undertaking a Masters Degree in Project Planning and Management at the University of Nairobi. In fulfillment of my dissertation I am researching on influence of road sub-sector reforms on the performance of roads management in Kenya; case of Kenya National Highways Authority, South Rift Region. You may be assured of complete confidentiality. May I ask you a few questions?

1. To what extent has the road subsector reforms improved the roads management in Kenya?
2. To what extent has the road subsector reforms enhanced the involvement of road users in the roads management in Kenya?
3. How has the formation of the agencies influenced the funding and efficiency of use of funds for the road sector?
4. Would you say the formation of the road management agencies has had an impact on the quality of staff in the road sector? If yes, How so?
5. Is the remuneration of expert employees by the roads management agencies competitive?
6. How successful has KeNHA been in the commercialization of the roads?
7. What challenges do the road management agencies face in the commercialization of roads?
8. What steps has your organization taken to improve the capacity development in the road subsector?
9. What influence has KeNHA's efforts to improve the capacity development had on the improvement of the road network and road subsector in Kenya?

10. How successful would you say your organization has been in capacity development and why?
11. Has the procurement process in the roads subsector been streamlined by the road subsector reforms? (Probe).
12. What measures has KeNHA put in place to stem overloading by trucks in a bid to elongate the life of the National Highways?
13. In your opinion are the roads management agencies lean and commercially run? What challenges do they face in the pursuit of achieving this standard?
14. What kind of feedback do you get from the public? And why do you think it is so?
15. Any comments?

Thank You