

UNIVERSITY OF NAIROBI
INSTITUTE OF DIPLOMACY AND INTERNATIONAL STUDIES

**THE ROLE OF ROAD TRANSPORT INFRASTRUCTURE IN ENHANCING REGIONAL
INTEGRATION: THE CASE STUDY OF KENYA'S ROAD NETWORK**

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Degree of Masters of Arts in International Studies

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DECLARATION

I Omondi A. Sarah declare that this project is my original work and has never been submitted to any other college or university for academic credit.

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This project has been submitted for examination with my approval as the University Supervisor.

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ABSTRACT

This study addresses the relationship between road transport infrastructure and regional integration specifically, within the East African Community and how this relation enhances economic growth and development in the region. The notion is that, improved road transport infrastructure hugely contributes to regional integration and hence enhances economic growth and development. Governments in the region should strive to ensure that integration works as a means to achieve their development objectives. In so doing, this will facilitate movement of goods and services across borders with subsequent related benefits. The study gives informed recommendations that are aimed at addressing challenges facing road transport infrastructure. The study looked into the theoretical aspects of road transport infrastructure in a regional integration context. The recommendations illuminate the need to develop a common road transport policy and an effective monitoring and evaluation system to accelerate regional integration efforts.

DEDICATION

I dedicate this work to my parents Mr. Gilbert Omondi and Mrs. Dorcas Omondi, my husband Peter Muholi and children Dalton and Lynn Muholi.

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CHAPTER ONE

1.0. Introduction

Chapter one provides the introduction to the study by presenting the basic information underlying the study. It lays the foundation for the subsequent discussions and analysis of the issues surrounding the research problem.

1.1. General background of Kenya's Road Transport

The Republic of Kenya is a country in the East African region covering an area of 581,309 Km² and a population of approximately 44 million people¹. Kenya gained its independence from its colonizers in 1963 and its capital city is Nairobi which is the major economic center of the country. That is the reason we experience high rates of rural-urban migration. Kenya's transport infrastructure first began with the construction of railway lines during the colonial period.

Thereafter in the 1970s, roads began coming up as feeder roads to link the small towns and villages around and along the railway lines. This was to enable the quick delivery of goods to be transported to other parts of the country by rail. The agricultural sector at the time registered high production and thus necessitating the need for bigger roads to accord ease of movement of goods from one point to another and also to connect the country to the regional and international markets and thus enhance regional integration. But even with expansion of roads, some areas remained to use the scattered roads and small airstrips².

¹ Word bank data 2012: <http://data.worldbank.org/country/kenya>

² Nelson, H. D., Kenya-A country Study. Washington. Area Handbook Series., 1983

1.2. Statement of the Research Problem

Since the beginning of the clamor for an integrated East Africa Community in the year 1919, little has so far been achieved in as far as attainment of this integration is concerned. Economic integration for instance is highly interfered with barriers such as poor road networks, numerous checkpoints, high taxes, congestion, inadequacy and corruption. The lack of an effective road transport system in the East African region is considered as one of the main impediments to economic development and poverty reduction. Despite the fact that the East African region is seen as one with potential in attaining the economic growth in a regional integration process, road transport of goods is much slower and very costly than other regional blocs elsewhere in the world.

The question that one asks is why the slow pace of economic integration despite the indication of will from all the partner states? Based on the background information provided above, it can be presumed that the slow pace of economic integration has been occasioned by the lack of commitment from member countries to invest in developing road networks within their territories hence the reason why poor roads continue to plague economic development in the region.

Furthermore, lack of institutional capacity both nationally and regionally has hampered the availability of a harmonized policy that can be applicable in all the countries to ensure effective management of roads. There is also the issue of old and smaller roads which need to be enlarged and even new ones build to cater for the growing population and the need for these populations to engage economically in enhancing regional integration.

Based on previous inadequate research carried out on this area of study, this research paper aims to evaluate the state of the road transport infrastructure as it is and give recommendations on the way forward in order to accelerate and achieve economic growth and enhance regional integration. This research will therefore fill in the research gaps left out by earlier researches conducted in this area of study.

1.3. Purpose of the Study

The purpose of the study is to examine the Kenyan road transport infrastructure in enhancing the East Africa regional integration.

1.4. Objectives of the Research

1.4.1. General objective

To assess the impact of the existing road transport infrastructure on the economic integration in the East African region and to suggest ways in which road infrastructure can enhance economic integration between countries in the East Africa region.

1.4.2. Specific objectives

- i. To establish how the existing road network in Kenya has enhanced economic integration between countries in the East African region
- ii. To assess how the handling of traffic in Kenyan roads has fastened economic integration between countries in the East African region
- iii. To assess how the challenges faced on Kenyan roads have impacted on regional integration in the East African region

1.5. Research questions

- i. In which ways has the existing road network enhanced economic integration between countries in the East African Region?
- ii. How has the handling of traffic in Kenyan roads fastened economic integration between countries in the East African region?
- iii. In what ways has the challenges being faced on roads impacted on regional integration in the East African region?

1.6 Hypotheses of the study

This study is directed by the ensuing hypotheses;

- a. That the Kenyan road transport infrastructure in its current state can support the East African regional integration.
- b. That progress has been made albeit very slowly in the recent past in regard to the Kenyan road transport infrastructure.
- c. That the challenges being faced on Kenyan roads may impact on regional integration.

1.7. Significance of the study

This research looks at the current state of the road transport infrastructure in Kenya, how it is being handled in an effort to enhance regional integration and economic growth while looking at the challenges being faced on the roads and how it impacts on regional integration in the region. This study will therefore cover the gaps in earlier research and purpose to provide key information relevant to the road sector to particular stakeholders like the appropriate ministries involved in the road infrastructure and policy makers.

1.8. Justification of the research problem

As earlier indicated, accessibility aids the transportation of goods and services to different regions hence helping in the growth of the economy in these regions. The importance of accessibility is however faced with increased constraints in financing road transport infrastructure as well as the establishment of policies that will create space for the establishment of sound road transport infrastructure. Consequently, governments need evaluation methods for project appraisals which enable their resources to be allocated in the most efficient way while taking cognizance of priorities that will give the greatest returns.

This study will bear a great significance in giving suggestions to member countries of the East Africa Community on how they can come up with a common road transport policy which will ease the running of the affairs of this sector with a view of improving the road transport networks within the East Africa Community and enhancing regional integration.

Other than policy significance, this study will also have an academic significance. The findings relating to the impacts of road transport infrastructure on economic integration will broaden the theories relating to international integration. The findings will do so by demonstrating the extent to which states can compromise to come together to establish one common road transport policy in view of the theory of idealism/liberalism which presumes that states will easily opt for regional bodies and hence will be readily willing to engage in negotiations which will remove all barriers to trade between them and poor road infrastructure being one of the barriers in this case.

1.9 Scope and assumption of the study

This study was undertaken to investigate the impact of the Kenyan road transport infrastructure on the East Africa Community regional economic integration. As noted from the key issue under research, the study is concerned with investigating road transport infrastructure alone and not any other form of transport. Furthermore, the study is limited to investigating only the economic aspects of integration and not any other form of integration. The bulk of the respondents in this study were from the Kenya Transport Association since it has many members offering road transport services. However for reliability purposes, the study drew opinions from key informants such as top policy makers from the line ministries such as Foreign Affairs, Immigration, Transport and Roads. Furthermore, the study also drew information from the officers who work at the immigration offices in three border offices i.e. Busia, Namanga and Sirare.

Due to time and financial constraints, the study faced the challenge of accessing all the relevant stakeholders in the transport industry so as to get a wide perspective on the topic of study as possible. For instance, it was impossible to visit all the border towns and establish the general opinion on the allegations of corruption and delays at the customs sections. However, to overcome this challenge, the researcher chose to take a minimal sample of the people and the regions targeted so to help in establishing a general opinion about the variables under investigation. For instance the study only targeted 80 respondents and only three border towns were selected.

Secondly, it was highly expected that some of the respondents especially immigration employees at the border towns might be reserved with information given the perceived sensitivity of some issues relating to the topic. The researcher however was prepared to

overcome this challenge by first assuring the respondents that their identity would not be disclosed beyond the interview session. Furthermore, the researcher tried to make the research instruments as easy and as appealing as possible in order to encourage the respondents to provide information within a very short time. This was done by presenting more closed ended questions which simply required the respondent to tick rather than write as if it were an examination.

1.9.1. Assumption of the study

The topic of research in this paper is “Impact of road transport infrastructure in enhancing regional integration: The case of Kenya’s road transport infrastructure”. This study is therefore going to only look at probing Kenya’s road transport infrastructure towards enhancing the East Africa regional integration.

The assumption of the study will therefore be;

- a. That the existing road transport infrastructure in Kenya would do little to enhance regional integration
- b. That Kenya’s road transport infrastructure has improved and;
- c. That Kenya’s road transport infrastructure can enhance regional integration despite the challenges being faced.

1.10. Literature review

1.10.1. Road transport infrastructure in regional integration

Kessides (2012) argues that Regional integration has been a crucial economic and political priority in Africa hence the reason why African leaders have in the recent past invested in regional integration as a way of solving Africa's development challenges.³

Worth observing however is that the realization of integration either at political or economic levels is dependent upon a variety of factors key among them being the existence of a sound transport infrastructure which will enhance easy connectivity between states. According to Cervero (2009), transport infrastructure is critical to the competitiveness of cities and regions in the global marketplace.⁴ Furthermore, Mukherjee *et al*, (2013) observe that an efficient road transport network acts as a positive economic pointer by opening up new market opportunities, moving goods and services from one point to another with speed and on time⁵ and efficiency and making them available to consumers across different parts of a country and even across the border at the best possible prices.⁶ It is in view of these politico-economic importance of road transport infrastructure that the Cambridge Economic Consultants observe that the value added by transport and storage accounts for 3 to 8 per cent of the GDP of countries in Asia and the Pacific.⁷

³ Kessides, I.N, Regionalizing Infrastructure for Deepening Market Integration, The Case of East Africa, "Policy Research Working Paper No. 6113," The World Bank Development Research Group Environment and Energy Team, 2012

⁴ Cervero, R., Transport Infrastructure and Global Competitiveness: Balancing Mobility and Livability, "The ANNALS of the American Academy of Political and Social Science" November 2009, pp. 626: 210-225.

⁵ Air Cargo Logistics in India. Ministry of Civil Aviation, Government of India. Working Group Report, May, 2012.

⁶ Mukherjee et al, Utilization of passenger transport subsidy in Kolkata: A case study of Calcutta State Transport Corporation, "Research in Transportation Economics," Volume 38, No. 1, February 2013, Pages 3–10

⁷ Cambridge Economic Consultants, "Case Studies of the Role of Infrastructure Projects in Local and Regional Economic Development", unpublished report, 2007.

1.10.2. Road transport infrastructure in Africa

Despite the importance of road transport infrastructure in enhancing connectivity and access between neighboring countries, one is saddened by the reality that the road network in Africa is still not adequate enough to serve the economic undertakings of countries that largely depend on roads for transportation of goods and people. Kessides (2012) captures this unfortunate scenario when he observes that Africa's road density is substantially lower than in other developing regions: 204 Kms of road per 1,000 square Kms with only one-quarter paved, compared to a global average of 944 Kms per 1,000 square Kms with more than one-half paved.⁸

Beuran (2013) and others indicate that in the Sub-Saharan Africa, road transport is the most used mode of transportation, carrying over 75% of passengers and freight yet more than 50% of these roads are in poor condition due to poor management of road maintenance.⁹ This situation has seriously jeopardized economic growth and poverty reduction in the sub Saharan Africa.

Being a region in the Sub-Saharan Africa, East Africa's cross border transport has had several deficiencies which have meaningfully impacted negatively on the region's economic integration.

1.10.3. Road transport infrastructure in East Africa

According to Kessides (2012), regional connectivity in East Africa has been dealt a blow by a variety of factors key among them being regional roads whose large portions have gravel surface and whose condition suffers from inadequate maintenance, overloading and inefficient

⁸ Kessides, I.N, Regionalizing Infrastructure for Deepening Market Integration, The Case of East Africa, "Policy Research Working Paper No. 6113," The World Bank Development Research Group Environment and Energy Team, 2012

⁹ Beuran, M. et al, Are There Myths on Road Impact and Transport in Sub-Saharan Africa? CES Working Papers, 2013

management.¹⁰ The transport corridors have been characterized by delays occasioned by numerous non-computerized checkpoints, some of which have created opportunities for corruption by the police, transit authorities and even local communities. Consequently, cross border transport by road in East Africa has been characterized by congestion and delays which have increased the cost of doing business across the border because of high costs occasioned by such delays. Kessides (2012) further observes that Freight costs per km are estimated to be 60 to 70 per cent higher than in the United States and Europe and 30 per cent higher than in southern Africa.¹¹ The poor road infrastructure in the East African region has devastated business in perishable goods since time after time such goods get spoiled on the way as the drivers strive to cope with the numerous bottlenecks and bureaucratic procedures “trucks, lorries buses pickups and small cars used in transportation of goods and cargo from the port to the market by road travel at an estimated speed of 8 km per hour throughout East Africa, compared to 12 Kph in Southern Africa and 6 Kph in West Africa.¹²

Hummels (2001) found that, any delay in transportation of goods and cargo by road for whatever reason even for one single day affected trade by almost 1%.¹³ On the other hand, Djankov *et al.* (2006) argued that reducing delay by one day was equivalent to a country reducing the distance to its trading partners by about 70 kilometers.¹⁴ This scenario implies that lengthy export processes pose the risk of making developing countries less likely to enter markets for goods that are sensitive to delays, such as perishable products for example

¹⁰ Kessides, I.N, Regionalizing Infrastructure for Deepening Market Integration, The Case of East Africa, “Policy Research Working Paper No. 6113,” The World Bank Development Research Group Environment and Energy Team, 2012

¹¹ Ibid

¹² Beuran, M. et al, Are There Myths on Road Impact and Transport in Sub-Saharan Africa? CES Working Papers, 2013

¹³ Hummels, D., “Time as a Trade Barrier” Purdue University Press, 2001

¹⁴ Djankov, S. *et al.*, “Trading on Time” World Bank Working Paper No. 3909, (2006).

agricultural produce, products produced in global supply chains for example electronics, and products where demand changes rapidly for example women's fashion clothing.

This presents the need for East African countries to take keen interest in revamping the road transport infrastructure so that the connectivity between these countries can be improved and the desired economic growth in the respective countries realized. This justifies the intent of this study to explore the correlation between road transport infrastructure and regional economic integration in the East African region.

1.11. Theoretical framework

This study was guided by the theory of hegemonic stability. According to Gilpin (2000) the basic assumption of the theory of hegemonic stability is that a hegemony is central to maintaining adherence to moderate international economic countries, and by extension peace and stability, through minimizing the costs of maintaining this economies for example by providing access to its own market rather than through coercion.¹⁵ Hegemonic Stability Theory is based on wide research that indicates that the international system is more likely to remain stable when a single nation-state is the monopoly.¹⁶

Thus, when an existing monopoly collapses or the state of no superpower diminishes, then the stability of international system is greatly affected. When a monopoly exercises its powers over other regimes by whichever methods or means then the monopoly is seen to be actually exercising its super powers. This is called hegemony, which refers to a state's ability to single-handedly dominate the rules and arrangements of international political and economic relations.¹⁷

¹⁵ Gilpin, R. *The Challenge of Global Capitalism: The World Economy in the 21st Century*, Princeton: Princeton University Press, 2000

¹⁶ Ibid

¹⁷ <http://www.oxforddictionaries.com/definition/english/hegemony>. Last seen on July, 2014 at 4.00pm

1.12. Methodology of the research

This section sets out various stages and phases that were followed in completing the study. It presents an outline detailing how data collection, measurement and analysis were conducted. This chapter basically presents how the research was executed and how respondents were engaged, when, where and how the research was conducted and data obtained. Specifically the chapter presents the research design, target group, the sample design used, data collection apparatus, data collection techniques and finally data analysis.

1.12.1. Research design

Research design refers to the way the study is designed, that is, the procedure used to carry out a research. This study was guided by a case study descriptive design. Bryman (2008) describes case study design as the collection of data on one case at a particular point in time in order to collect a body of quantitative and qualitative data in connection with two or more variables which are then examined to detect patterns of association.¹⁸ A case study design aims at giving a descriptive presentation of details regarding variables which have been chosen for the study.

Case study design was found fitting for this study because it aims at collecting both qualitative and quantitative data. Though this study is largely quantitative, some qualitative data was used in order to gain a better understanding and possibly enable a better and more insightful interpretation of the results from the quantitative study. Therefore case study design was chosen because it blended both qualitative and quantitative data.

¹⁸ Bryman, A., Social Research Methods, New York: Oxford University Press, 2008

1.12.2. Target population

This study targeted a variety of people. The major population was however the members of the Kenya Transport Association. The study focused on the sections and particularly on the transport operative staffs who are directly dealing with the day-to-day management of the supply chain since they are the ones conversant with the organizations' importation activities. Mugenda and Mugenda (2003), explains that the target population should have some observable characteristics, to which the researcher intends to generalize the results of the study.¹⁹ The assumption of the definition is that the population is not homogeneous.²⁰

1.12.3 Sample size and sampling procedures

According to Mugenda & Mugenda (2003), a good research should have a formulated procedure of selecting the subject or cases that should be included in the sample thus the importance of a sampling frame which forms the unit of observation in a study.²¹ The researcher sampled a total of 80 respondents. These were drawn from a section of members working with Kenya Transport Association. However for objectivity purposes, the study also targeted respondents who were drawn from the immigration offices at the borders and key informants from key ministries such as Foreign Affairs, Transport, Roads and Immigration. Academicians who are well conversant with regional integration issues were also a resource.

The researcher adopted a combination of simple random sampling and purposive sampling techniques. Simple random sampling was adopted in the selection of 10 respondents from the head office at Kenya Transport Association in Nairobi. The initial task was to obtain a sample frame, which was list of the management team from the human resources department.

¹⁹ Mugenda, A., & Mugenda, O., *Research Methods Qualitative and Quantitative Approaches*, Nairobi: Act Press, 2003

²⁰ Ibid

²¹ Ibid

Being that the sample frame consisted of a maximum of 20 eligible respondents, the following random number sample was used by the researcher to identify 10 respondents who were eligible to participate in the study from among the management team of Kenya Transport Association.

Table 1: Random number sample

18	15	8	3	1
11	19	14	7	6
5	10	20	13	12
2	4	9	17	16

N/B: The random number sample might change depending on the number of eligible respondents identified at Kenya Transport Association.

The random number sample above was used as follows:

- The table shows that the number of eligible respondents is 20. This number was designated as A ($A = 20$)
- To identify who was to chosen out of the 20, the researcher moved horizontally from the first box containing no. 18 and selected the number that was less than or equal to 20. This number was designated as B ($B = 18$)
- Then the researcher went back to the sample frame and selected the person who was number 18 in the sample frame. This was the first respondent.
- Number 18 was then removed from the sample frame as well as the random number sample and this meant that the remaining eligible respondents was still number 20 only that the option of choosing 18th person in the sample frame was eliminated. Hence to select the subsequent respondents until the 10th, the same procedure above was repeated while considering

number A to be 20 and B to be the number that is less or equal to 20 in the random number sample.

The above stated procedure provided an equal opportunity to all members of the management team at Kenya Transport Association to participate in the study.

Having chosen 10 respondents from Kenya Transport Association, the researcher used a combination of snowball sampling and event sampling to identify and access 40 beneficiaries of the services of Kenya Transport Association across the general public. This consisted of 20 truck and bus drivers and 20 passengers. This was done by asking Kenya Transport Association to direct the researcher to members of the communities that usually benefit from their services in the transport sector. For instance this method was used to identify the truck drivers and bus drivers who often plied the cross border routes.

The researcher went to the head offices of transport companies that often did cross border transport for instance the bus companies like the Coast Bus Company that ferries passengers to different countries in the region and companies that own trucks like the Bayusuf trucks that ferry goods to different countries in the East African region. Event sampling was used at the booking offices of buses so as to get the opinion of passengers who traveled across the border on a regular basis and were aware of the state of the roads in the regions that they traveled to.

Having chosen 50 respondents from Kenya Transport Association and its beneficiaries, a further 15 respondents was selected from the customs section at three border towns i.e. Busia, Namanga and Sirare. This consisted of five officers from each border town. The remaining 15 respondents were selected from among key informants such as academicians and policy makers who are well versed on issues of road infrastructure, economic growth and regional integration.

The key informants consisted of five academicians while the remaining 10 were distributed across the key government ministries.

1.12.4. Research instruments and data collection procedure

The study used both primary and secondary data. Primary data was sampled using semi-structured questions while secondary data was collected from published books, journals and other relevant written material. The questionnaires were used because they allowed the respondents to give their responses in a free environment and help the researcher gather information that would not have been given out had interviews been used. The questionnaires contained both closed-ended and also a few open ended questions. Closed ended questions were prioritized because they had fixed answers and they helped the researcher to shape the responses so that they respondents could not give information that was not going to be relevant to the study. However, open ended questions were used to give room to the respondents to express themselves as much as they deemed appropriate especially on selected aspects of the study.

Concerning the administration, the questionnaires were administered using drop and pick method as well as self-administration.

The interview guide was also used as data collection instrument. The open-ended questions enabled the researcher to collect qualitative data. This was employed to achieve a better understanding and possibly enable a better and more insightful interpretation on the impact of road transport infrastructure on regional economic integration.

1.12.5. Validity and Reliability of the Instrument

Validity is the degree by which the sample of test items represents the content the test is designed to cover. Content validity which was utilized by this study was a measure of the degree to which data collected using a particular instrument represents a specific domain or content of a

particular concept. The usual procedure in assessing the content validity of a measure was to use a professional or expert in a particular field.

To establish the validity of the research instrument the researcher sought opinions of experts in the field of study especially the researcher's supervising lecturer. This necessitated revision and modification of the research instrument thereby enhancing validity. Reliability refers to the consistency of measurement and was frequently assessed using the test-retest method. Reliability was enhanced by inclusion of many comparable items on a measure, by testing different individuals and by using uniform testing procedures.

Reliability of the research instrument was enhanced through a pilot study that was done among truck drivers and customs officers at Migori town between 1st July 2013 and 7th July 2013. The data from the pilot study was not included in the current study. The pilot study allowed for pre-analysis of the research instrument. The choice of the research items to the respondents was established so as to enhance the instrument's validity and reliability.

The initial study enabled the researcher to be familiar with the possibilities of success of the study and its administration procedure as well as identifying items that would require modification. The results helped the researcher to correct inconsistencies that arose from the instruments so as to ensure that they measured only what was intended.

1.12.6. Data analysis and presentation of findings

The collected data was examined and checked for completeness and its comprehensiveness. Summarization, coding and tabulation were then done. Data was presented through the use of charts, graphs and frequency tables. The presented data was then analyzed using descriptive statistics which include frequency and percentages.

For qualitative data, this was mainly gathered from open ended questions and interviews. The checklist was clustered along main themes of the research to ease consolidation of information and interpretation and it was analyzed through content analysis which is the process of critically and carefully analyzing verbal and written communications in a planned and systematic way to measure variables qualitatively.

1.12.7. Ethical considerations

The researcher upheld all ethical considerations as to the conduct, design, analysis and dissemination in the entire study. The participants were well informed of the purpose of the study and their consent sought prior to their participation in the study. Respondents were also informed that the study was voluntary and adequate measures were taken to protect confidentiality. Accuracy was adhered to in data collection analysis, interpretation and report findings. The research maintained ethics in academic writing and publishing.

1.13. Chapter outline

This study has been divided into five chapters.

Chapter one lays down the background to the study, and identifies the research problem. The chapter goes further to identify the objectives of the research and also identify the research questions that the study seeks to answer. Other details in the chapter are the significance and scope of this study, the limitations and the delimitations of the study, the operational definition of terms commonly used in the study and the structure in which the study has been presented. The literature review relevant to this study is also looked into in this chapter including the method and procedure of data collection.

Chapter two gives an overview of road transport infrastructure in the African region. The chapter gives a general presentation on the road transport infrastructure in Africa while looking

at the East African transport corridors, the challenges facing the road transport infrastructure in the region in enhancing regional integration and also the effects of the challenges facing the road transport infrastructure.

Chapter three presents the impact of road transport infrastructure in regional economic integration in East Africa while looking at the benefits of the road transport infrastructure and the factors affecting the use of the road transport infrastructure.

Chapter four presents the impact of road transport infrastructure in Kenya in enhancing regional integration in East Africa.

Finally, chapter five presents the conclusions and recommendations that have been drawn from the study.

CHAPTER TWO

AN OVERVIEW OF ROAD TRANSPORT INFRASTRUCTURE IN THE AFRICAN REGION

2.0. Introduction

Road transport infrastructure is very significant in achieving regional integration and economic growth in any region in the world.

2.1. Road transport infrastructure in Africa

Road transport is the most dominant mode of transport and the most important in attaining economic growth and enhancing regional integration²². In Africa, the road transport carries 80%-90% of passengers and freight²³. The rural parts of Africa are easily accessible with proper and well managed main or classified roads. Furthermore, in Africa, the conditions of the roads in regions are not up to the international standards compared to other regions like Europe. It is however noteworthy that in the past fifteen years, the road transport infrastructure has improved tremendously.

The classified road network in Africa which basically includes the main roads and secondary roads is approximately 1,052,000km long²⁴. The unclassified road network is about 492,000km while the urban road network is estimated to be 193,000km²⁵.

Due to poor management and maintenance of roads, the road transport infrastructure in Africa has worsened over the years with big parts of the road being unpaved and those that are paved going through destruction and degradation as shown in the figure below.

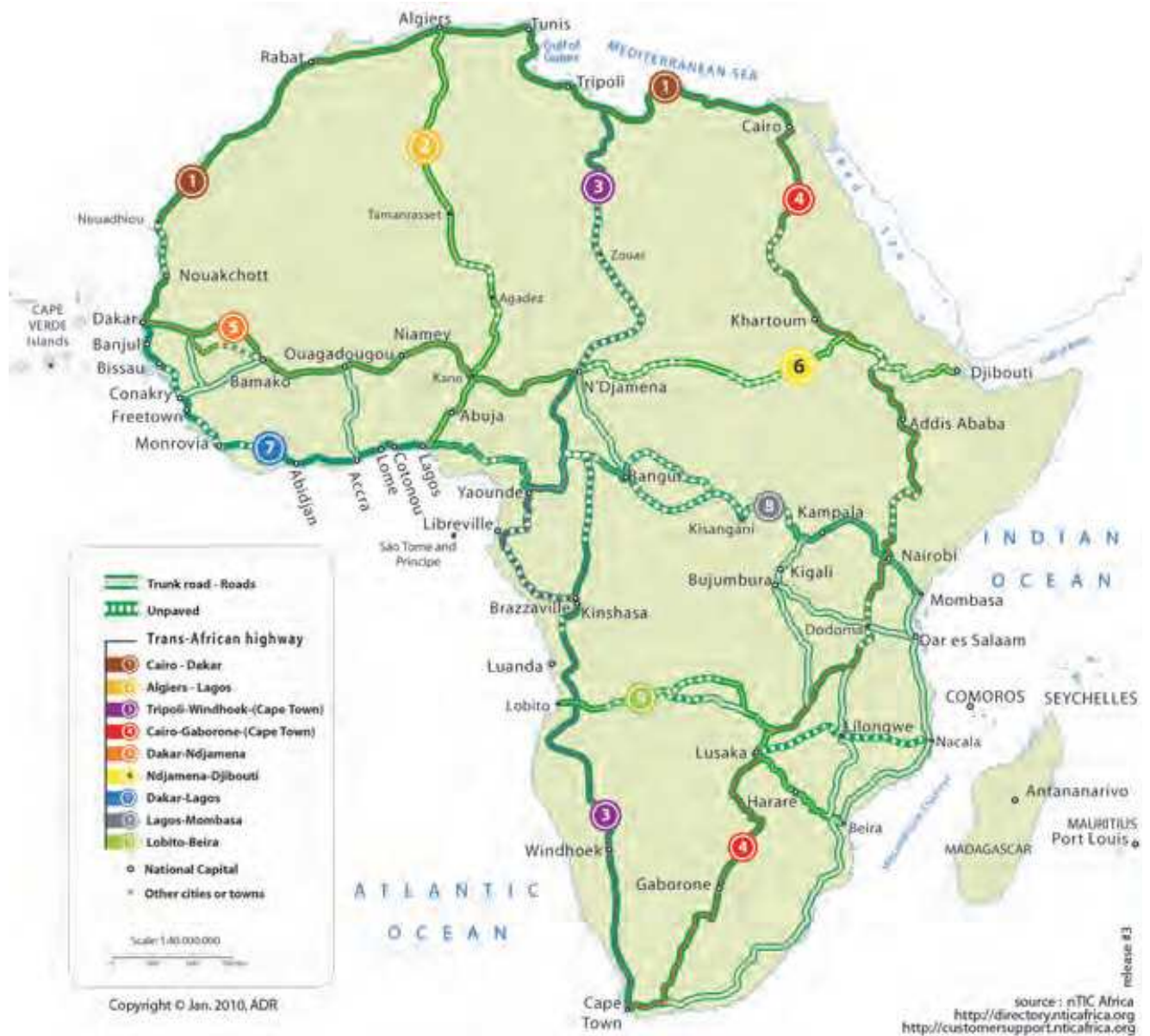
²² Ward, N. and Barreto, E., Technical Report: Road Freight Transport Services Diagnostic Study for USAID Southern African Trade Hub, 2011

²³ Ibid.

²⁴ SSATP Annual Report. <http://www-wds.worldbank.org/external> Accessed on 14th August, 2014 at 4:00pm.

²⁵ Ibid.

Figure 1: Africa's main road corridors



Source: ICA, 2009. (Infrastructure Consortium for Africa) 2009. Africa's Maps. Available at

http://www.icafrica.org/fileadmin/documents/ICA_meeting/2009_meetings/2009%20Africa's%20Maps%20by%20ICA_09.03.09.pdf.

In the road transport infrastructure, some of the challenges mentioned above have caused the high cost of production and delivery of goods within the region and to the international market.

2.2. Road transport infrastructure in West Africa region

Road transport infrastructure is very important in the achievement of economic development and regional integration in West Africa region. It is also very vital in linking the region to other regional and international market as it competes for a presence in the global market. The Economic Community of West African States has eight member states that have a population of less than 10 million people and another 11 member states that have a Gross Domestic Product of less than \$5 billion. Three member states of the Economic Community of West Africa States are landlocked and rely on the neighbouring countries around them for their road transport infrastructure in accessing and connecting to regional markets.

There are two key road network corridors in the West African region and one being the coastal corridor while the other is the Sahelian corridor and which have been and still are very significant in the West African regional integration. A larger part of the two corridors combined is paved to a great extent while the remaining part is unpaved but in good and usable condition.

In the West African region, road transport is considered the most expensive when compared to other regions in the world and the rest of Africa. Some of the reasons why road transport is considered very expensive in West African region despite having better and improved roads compared to East Africa is mostly because of the cartels that have come up to run the affairs of the road. These cartels are illegally established and create the large gaps between costs and prices in that industry. Furthermore, corruption becomes the order of the day in running the affairs of road transport in West African region because of these cartels. Another

reason is that of very strict road transport regulations and administrative procedures that restrict those in the road transport industry. Also, road transport is considered very slow in the West African region compared to the East African region and this attributed to frequent delays by the several administrative procedures one has to undergo in this sector.

There is however challenges facing the road transport infrastructure in the West African region and especially on the corridors that lie on the rural parts of the sea corridors in the coastal countries.

2.3. An overview of road transport infrastructure in East Africa region

Road transport infrastructure in the region was mainly constructed with the aim of transporting food products from one point to another for exportation or sale in other towns, countries and even regions. East African region being seen as one with potential to enhance economic growth in Africa, it is still seen as a region with widespread poverty and food shortages and therefore transport is a main factor for the survival economies in the region.²⁶

The regional transport industry in East Africa mainly focused on the ports at Mombasa and Dar-es-Salaam and which later evolved to what is now known as the Northern Corridor and Central Corridor. The Northern Corridor thus runs from Mombasa through Malaba and Busia to Kampala. The Northern Corridor also comprises the road running along the Kampala/Kasese railway and the road network from Kampala to Mbarara and Kabale and reaching Rwanda through Kigali and Butare and proceeds to Bujumbura. For the Central Corridor, it runs from Dar-es-Salaam through Dodoma, Singida, Nzega to Lushaunga into Rwanda and Burundi.²⁷

Burundi, Rwanda and Uganda are landlocked and depend on the road transport especially from Kenyan road transporters to get their goods delivered to their countries. The Northern

²⁶Pirie, G.H., Transport, food insecurity, and food aid in sub-Saharan Africa, "Journal of Transport Geography", Vol. 1 (1993), pp. 12–19

²⁷ Ibid

corridor being the most significant trading corridor within the East African Community, serves the landlocked countries in the region being that the regional road corridors are on average paved and in reasonable state as at 2008.²⁸

2.4. East African Community Transport Corridors

In the East African Community, most goods are transported on one of two main travel routes, the Northern or the Central Corridors.

2.4.1. Northern Corridor

In 2009, it was estimated that the Northern Corridor carried 75 percent of the East Africa Community's trade volume which comprises Kenya, Uganda, Tanzania, Rwanda, and Burundi in the East African Community, but also carries goods bound for Ethiopia, South Sudan, and the Eastern Democratic Republic of the Congo.

A 2010 inventory of the East African Northern Corridor's roads conducted by the engineering firm Aurecon rated about half of them as delivering at least an "acceptable" level of service that is, moderate average speeds and ability to overtake slower traffic.²⁹ Nearly the entire corridor stretching from Mombasa to Bujumbura is paved. Logistics efficiency on road segments from Mombasa to Nairobi, Kampala, and Kigali was rated as "good" that is, time, cost, and reliability is efficient and competitive according to global standards, while the final segment to Bujumbura is rated as only "fair." The prevalence of weighbridges and roadblocks increases overall transport time and costs.³⁰

²⁸ African Development Bank "State of Infrastructure in East Africa" Statistics Department Africa Infrastructure, Knowledge Program, 2013.

²⁹ Irving, A.W, et al. Trade Facilitation in the East African Community: Recent Developments and Potential Benefits, Washington: US *international Trade Commission*, 2012

³⁰ Mbuli, E.V. "Improving Transit Transport in East Africa: Challenges and Opportunities." United Nations Conference on Trade and Development. Mid-term Review of the Almaty Programme of Action. 2007

The Northern Corridor Transit Agreement was established to ease road transport and to harmonize the different procedures in the East African region for fast movement of goods in transit. The Northern Corridor Transit Agreement was drawn to establish the Transit Transport Coordination Authority whose responsibility was to achieve the aims of Northern Corridor Transit Agreement. The Transit Transport Coordination Authority was set up in 1988 and has performed exemplarily in its duties in enabling the North Corridor in sustaining its role as the main route to the landlocked countries.

The Northern Corridor main roads is estimated at approximately 7,000km of which only about 60 percent is paved as shown in the table below.

Table 2: Northern Corridor road network distribution (Main Axis)

Country	Paved	Unpaved	Total
Burundi	320	36	356
Congo D. R	721	1920	2641
Kenya	1196	0	1196
Rwanda	814	0	814
Uganda	1042	657	1669
Total	4093	2613	6706
%	61%	39%	100%

Source: A paper prepared by the TTCA secretariat for presentation at COMESA business summit, Kampala, Uganda.

Northern Corridor Transit Agreement has obviously had challenges since its inception and which include its failure to succeed in curbing delays that are caused by cumbersome transit procedures or the hefty charges along the Northern Corridor. Since the signing of the Northern Corridor Transit Agreement, Kenya has taken the step to enhance surveillance of transit cargo through the custom and police authorities.³¹ Another challenge on the role of Transit Transport Coordination Authority was also experienced when the border between Uganda and Rwanda was closed down since the 1990 and which made it difficult for road transport users to enter Rwanda or Burundi. This move posed a challenge to regional integration and the desire for economic growth because it limited accessibility and connectivity.

2.4.2. Central Corridors

The Central Corridor originates at the Port of Dar es Salaam, Tanzania. This port handles only about half as much cargo as Mombasa, but like Mombasa is capable of handling all degree of cargo. It is used increasingly for transit cargo (cargo with a final destination other than Tanzania) along both the Central Corridor and the Southern Corridor, which runs through south western Tanzania to Malawi and Zambia.³² Like Mombasa, combined cargo and container traffic exceed the port's capacity; container traffic at Dar es Salaam has reached 140% of capacity.³³ Improvements are underway to increase the port's capacity, particularly given growing import

³¹Kessides, I.N, Regionalizing Infrastructure for Deepening Market Integration, The Case of East Africa, "Policy Research Working Paper No. 6113," The World Bank Development Research Group Environment and Energy Team, 2012

³²Mbuli, E.V. "Improving Transit Transport in East Africa: Challenges and Opportunities." United Nations Conference on Trade and Development. Mid-term Review of the Almaty Programme of Action. 2007

³³Shkaratan, Maria. "Tanzania's Infrastructure: A Continental Perspective." World Bank Policy Research Working Paper 5962, 2012

demand from dependent landlocked economies. Plans for a new terminal are being finalized and which will be financed by China's Exim Bank.³⁴

In the last decade, around 500 kms of the Central Corridor's total 3,026 kms of roads were rehabilitated and more than 500 additional kms were paved; as a result, 86 percent of Central Corridor roads are now paved overall. Nearly the entire corridor through Tanzania was rated by Aurecon Engineering as "sound" (acceptable riding quality based on pavement roughness) in 2010, but portions of the route through Rwanda and Burundi need to be either paved or thoroughly rehabilitated, particularly the road segment through Burundi to Bujumbura, which was rated "poor" that is, time, cost, and reliability is inefficient and uncompetitive according to global standards.³⁵

2.5. Challenges facing the road transport infrastructure use in East Africa

Road transport infrastructure is very important in the economic development of a country and even a region like the East Africa. However, a poor road transport infrastructure within a region can greatly hamper the economic development of that region. If most roads within the region are not accessible, then economic growth cannot be achieved as fast as the countries in the region may wish to.

Farm produce are known to go bad due to lack of proper roads and transportation linkages that are not profitable.³⁶ Lack of proper road infrastructure makes easy accessibility to the market impossible and therefore the food that gets to reach the consumer becomes very expensive and unaffordable to the population of a certain area with poor road transport

³⁴ Giersing, B. "Corridor Diagnostic Study (CDS), Northern and Central Corridors of East Africa: Railway Revitalization Strategy." Presentation for 2nd Stakeholders Workshop Review of Draft Action Plan, Dar es Salaam, 2011

³⁵ Ibid

³⁶ Rugamba, A., Wainaina S., Transit Transport Systems in East and Central Africa: Issues, Actions and Constraints, An unpublished Report prepared for United Nations Conferences on Trade and Development, 1994

infrastructure.³⁷ As a result, the government has to come in to assist the market by subsidizing and bringing in price control on the commodities.

It is evident that in Kenya, there are people who go hungry in areas where there is shortage of food crop and this is mainly experienced in the northern and eastern parts of Kenya which are arid and semi-arid. The roads in those areas are not well managed or maintained. The same cannot be said of the western parts of the country farm produce exists in excess. The reality is similar in areas such as Karamoja in north eastern Uganda. This region lacks food during certain seasons of the year at a time when there is excess food supply in Mbarara region. In Tanzania, the scenario is similar with areas like Bukoba and Mount Kilimanjaro being very productive in way that proceeds from this area can feed large parts of the Tanzanian country.

Regional integration can also be achieved by cost effective road transport connections. Increasingly interdependent infrastructure systems are a means toward ensuring the delivery of goods and services that promote economic prosperity and growth, and contribute to quality of life.³⁸ Road transport infrastructure is not an end in itself but a means for ensuring the delivery of goods and services that promote prosperity and growth and contribute to quality of life, including the social well-being, poverty reduction, health and safety of citizens, and the quality of their environments.³⁹

If the infrastructure is poor, business people have to put up with high transport costs which these poor countries have to bear with. This is because imports of goods from these international markets have to pass through one country maybe because of the distance involved

³⁷ Tavernier J. et al., World Food Security and Agriculture in a Globalizing World: challenges and Ethics. Ethical perspectives: Journal of the European Ethics Network 13, no. 1, 2006: 93-117

³⁸ Kempe, R.H, *The Political Economy of Development in Kenya*, New York: Continuum International Publishing Group, 2012

³⁹ Organization for Economic Co-operation and Development (OECD). "The Costs and Benefits of Trade Facilitation." OECD Policy Brief, 2005

and therefore additional costs are incurred. In the East African region, goods to landlocked countries like Rwanda, Burundi and Uganda have to pass through Kenya and Tanzania.

Other challenges that face the road transport infrastructure in enhancing regional integration within the East African Community is inadequate transport facilities, inefficient transport management, lack of reliable communication between the ports and the landlocked countries.

Other challenges include complicated customs and documentation procedures, and other official and non-official costs imposed on transporters. The process of clearance across the borders can be marred with extreme challenges that might result from unnecessary delays. For instance, one of the biggest challenges that are faced in cross border transport in India is the poor skill levels of staff manning the check posts as well as inadequacy of the staff required.⁴⁰ Furthermore, the cashiers at toll booths lack the training and computer skills required for the job hence the reason why there are traffic jams and unnecessary delays.

Political relations between the East Africa Community member states can also affect the transportation costs not forgetting that security issues and development priorities of one country can be an obstacle to regional integration through road transport infrastructure.

Road conditions are also some of the challenges faced by the road transport infrastructure within the East African Community. According to East Africa Road Network Project, the ports of Mombasa and Dar-es-Salaam are connected to the rest of the region through road networks. Most of the road networks along the Northern Corridor are paved especially in Kenya and Uganda. However, these roads must constantly be maintained, rehabilitated and upgraded to keep them in a usable condition in order to enhance regional development and integration.

⁴⁰ Mukherjee *et al*, Utilization of passenger transport subsidy in Kolkata: A Case Study of Calcutta State Transport Corporation, "Research in Transportation Economics," Volume 38, No. 1, February 2013, Pages 3–10

All five countries in the East Africa Community have embarked on mechanisms, policies and resource allocations that have seen the upgrading of existing roads in terms of road expansion, dual carriage, road bypasses. Secondly, on rehabilitation of the roads there is the tarmacking and putting up road signs to ease up on road usage by the road users and lastly, on road maintenance by contracting firms to clean the roads in the respective East Africa Community member countries.

2.6. The Effect of Challenges Facing Road Transport Infrastructure

2.6.1. Transportation Regulations and Standards

The summit of the East African Community adopted rules and regulations that were explicitly intended to bring together procedures and standards to be applied in determining minimum and maximum axle mass loads, gross vehicle mass limits, tolerance factors for overloads, and a ban on quadrem axles 50 and harsh mechanism to punish those who flouted these laid down rules and procedures. Overloading is known to be the main cause of damages to the road transport infrastructure. Harmonizing transportation rules and standards firstly enhances safety and secondly it reduces wear and tear on the roads and thus facilitating the free flow of goods.⁴¹ Setting the minimum and maximum axle load is important because the bulk of goods move throughout the East Africa Community by truck, and differing weight standards lead to bottlenecks at border crossings and while in transit in the different member countries.⁴²

However, the legal maximum gross weights still differ extensively among member countries, with Kenya allowing a maximum vehicle weight of 48 metric tonnes, Burundi and Rwanda allowing a weight of 53 metric tonnes, and Tanzania and Uganda permitting loads of 56

⁴¹ Fujimura, M. "Cross-Border Transport Infrastructure, Regional Integration and Development" ADBI Discussion Paper No.16, 2004

⁴² Ibid.

metric tonnes.⁴³ In February 2012, the East African Communication Ministers endorsed a new vehicle load control bill that set a uniform, community-wide load limit of 56 tons per vehicle.⁴⁴ However, the legislation will not take effect until it is approved by the East African Legislative Assembly. Despite the passage of new load limit legislation, enforcement of these new rules may be problematic.⁴⁵

2.6.2. Roadblocks, Weighbridges, and Informal Fees

Weighbridges (truck scales) at certain points along the route from the port to the cargo's final destination are necessary to ensure that vehicle weights comply with laid down rules and procedures. However, in the East African Countries, the existences of roadblocks and weighbridges have increased in number over the years to a point that they have significantly slowed down the intra-East African Countries trade.⁴⁶

Moreover, their effectiveness at enforcing load limit regulations is questionable. Two separate issues with respect to trade facilitation can be identified: The overall high number of stops slows down goods transport and increases the uncertainty of delivery times. The reality of informal payments to speed inspections at weighbridges, whether or not a vehicle is overweight, provides a perverse incentive to not comply with weight regulations. In turn, overloaded vehicles wear down roads faster and increase the demand for road maintenance funds.⁴⁷

With respect to the first problem, weighbridges are numerous on the main East African Community roads. One 2011 report cited nine weigh stations in Tanzania, nine in Kenya, and four in Uganda, all of which were mandatory for all commercial vehicles regardless of their origin or destination. All of these stops add up to large delays in transit time. A trucker traveling

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Green. *Econometric Analysis* (Fifth Edition), New Jersey: Prentice Hall Publishers, 2003

⁴⁷ Ibid

west from Mombasa or Dar es Salaam could expect to encounter 19 roadblocks and 4.4 weigh stations per trip, resulting in an average 12-hour delay.⁴⁸ The East African Business Council approximates that roadblocks and weighbridges delays do cost businesses a total of 126,749 working days per year⁴⁹. Weighbridges also cost businesses a lot of money in the form of informal fees to speed vehicle inspections, even for compliant vehicles. In 2008, the East African Business Council estimated that businesses paid \$7.9 million in informal payments to officials in order to facilitate inspections⁵⁰. On the Northern Corridor through Kenya, informal border stops are estimated to raise transport costs by as much as \$900 per twenty-foot equivalent unit.⁵¹

Although East Africa Community member countries recognize the pervasiveness of informal payments along the main transport corridors, efforts to eliminate them are ongoing. Reducing informal payments may be hindered by opposition from stakeholders in the trucking industry to any sort of political action. These stakeholders have a vested interest in continuing to operate above the maximum legal load weight because it enables them to carry more cargo per shipment. This leads to higher profits per operator, but faster degradation of roads.⁵²

⁴⁸ Lee, H., Roland-Holst D., and Mensbrugge D. "China's Emergence in East Asia under Alternative Trading Arrangements." *Journal of Asian Economics* Vol 15, No. 4, 2004, pp 697-712

⁴⁹ Survey Conducted by The Steadman Group (now part of Synovate) on behalf of East African Business Council, 2008

⁵⁰ Ibid.

⁵¹ Green. *Econometric Analysis* (Fifth Edition), New Jersey: Prentice Hall Publishers, 2003

⁵² Lee, H., Roland-Holst D., and Mensbrugge D. "China's Emergence in East Asia under Alternative Trading Arrangements." *Journal of Asian Economics*. Vol 15, No. 4, 2004, pp 697-712

CHAPTER THREE

IMPACT OF ROAD TRANSPORT INFRASTRUCTURE IN REGIONAL INTEGRATION IN EAST AFRICA

3.0. Introduction

The road transport infrastructure has over the years overshadowed other modes of transport in the region and even internationally mainly because of its flexibility and speed. As regional trade increases, investors in each country and the respective governments have realized that there are high prospects in earning foreign exchange by engaging in transit transport. Because of this realization, transport authorities and parastatals were formed by governments to take care of the investors who decided to invest in these countries.

Transit Transport Coordination Authority notes that over the past several years, landlocked countries in the East African region have sought other new routes to reach the ports in Mombasa and Dar-es-Salaam so as to cut on costs and also to address issues of security.⁵³ After the closure of the Uganda/Rwanda border in the 1990, the result was that there was a high increase of road usage in Northern Tanzania through Mwanza and Isebania to connect again with the Northern corridor to Mombasa.⁵⁴ Furthermore, landlocked countries have implemented other facilities of their own to reduce on the usage of facilities of transit countries. In order to curb the rising cases of insecurity, there was the establishment of Transocean of Uganda, Organization

⁵³ Transit Transport Coordination Authority (2004), "Transit Transport Coordination Authority of the Northern Corridor, Investment Opportunities at the Northern Corridor with Emphasis on Transport Infrastructure." A paper prepared by the Transit Transport Coordination Authority Secretariat for presentation at the COMESA Business Summit Kampala, Uganda. (2004). 2004

⁵⁴ Rugamba, A., Wainaina S., Transit Transport Systems in East and Central Africa: Issues, Actions and Constraints, An unpublished Report prepared for United Nations Conference on Trade and Development, 1994

Transportes Regionaux Au Burundi (OTRABU) which is no longer functional and Societe des Transportes Internationaux due Rwanda (STIR) of Rwanda.⁵⁵

The expansion of the road transport infrastructure within Kenya and the East African Community will mean that goods can be transported at cheap costs from the stage of production to the stage of consumption. This is because the expansion of the road transport infrastructure will lead to the creation of larger markets with the view of improving economic growth and development in the region and also enhance regional integration. Looking at the East African region, the low cost in transport will ease regional and even international trade but with the high transport costs, this has been an obstacle to this achievement. However, lack of proper road infrastructure would lead to inefficient use of resources within the region.

Over the years, road transport infrastructure has improved and continues to do so due to the increase in food production for the huge domestic markets. Urban centers have come up from agricultural points of collection and becoming important in the livelihoods of the citizens of the countries within the East Africa Community. In Kenya, we have towns like Eldoret, Nyahururu, Nakuru, Kitale and Nanyuki while in Tanzania we have Moshi, Mbea, Songea, Iringa and Lushoto. In Uganda, we have towns such as mbale, Kabale, and Mbarara. Many of these towns are within the high agricultural productive areas in the respective countries. Most roads are made of murrum but most have now been tarmacked along the agriculturally productive areas meaning that the less productive areas have been left with no roads or properly constructed roads.

⁵⁵ Ibid

3.1. Benefits of Road Transport Infrastructure

The improvement of travel conditions resulting from road transport infrastructure investment has wider impacts on the road network by inducing and effecting demand on a cross-modal basis as well as improving reliability and quality of transports service.⁵⁶ Some of the benefits which have been realized as a result of the existing transport infrastructure are enhanced accessibility, employment, efficiency and social inclusion.

3.1.1. Accessibility

The primary and most important aspect of an economic activity is mobility. The reason is that it satisfies the vital need or desire of going from one place to the other. There is also the need for mobility that is shared by passengers, freight and information. Most regions in the world do not share the same level of mobility and this is because other regions are more developed than the others in regard to the different modes of transport in those regions. Economies that possess greater mobility are often those with better opportunities to develop than those with scarce mobility.⁵⁷

Where there is reduced mobility it is evident that development and enhancement of regional integration will be hindered while greater mobility is a catalyst for development and regional integration⁵⁸. In any given region, economic development and regional integration is indicated by the mobility levels in that region. To provide this sort of mobility to the different players in the economy in providing employment, offering services to customers, investing the capital and generating income, great emphasis has to be put in the road transport infrastructure.

⁵⁶ Organization for Economic Co-operation and Development (OECD). “The Costs and Benefits of Trade Facilitation.” OECD Policy Brief, 2005

⁵⁷ Chymera, A. “Motorway Investment and Regional Development Policy”, unpublished dissertation for postgraduate diploma in town planning, Leeds Polytechnic, 2006

⁵⁸ Bonhet, D. Rail-Volution, ‘Building Livable Communities with Transit’ Conference, Los Angeles, U.S.A. October, 2012.

Economic importance of the transportation industry can be assessed from a macroeconomic and microeconomic perspective.⁵⁹

In many cases, the objective of transport infrastructure investment is to improve the accessibility of a given region by reducing travel time or increasing the potential to travel. Accessibility can be measured as the quantity of economic or social activities that can be reached using the transport system. Improvement in accessibility will increase the market size for manufacturing, tourism and/or labour, leading to increased competition and/or centralization. On the other hand, the impact for the region concerned could be both positive and negative, depending on its initial level of competitiveness.⁶⁰

3.1.2. Employment

The additional value and employment effects of transport services usually go beyond employment and the additional value generated by that activity; indirect effects are significant. A case in point is where a transport company opts to acquire a part of their inputs from a local supplier.

The production of these inputs generates additional value, market and employment in the regional economy and the suppliers in turn purchase goods and services from other local companies in the region.⁶¹ Likewise, households that receive earnings from employment in the transport industry also use some of that income on goods and services produced locally. Because of this sort of spending, more local jobs are created for the youth and therefore growing the economy of the member countries which ultimately grow and enhance regional integration.

⁵⁹ Gwilliam, K.M., Judge, E.J., "The M62 and Trans-Pennine Movement, 1970- 77: Implications for Regional and Transport Planning, Regional Studies Association Conference: Transport and the Regions, London, 2008

⁶⁰ Ibid

⁶¹ Ibid

Thus, from a general perspective the economic impacts of transportation can be direct, indirect and related. Regional employment is an important government objective and goal and therefore, most countries in the region put a lot of emphasis with a view of achieving the employment goals in their countries. The impacts of roads transport infrastructure allows for increased employment which may be either direct or indirect and as a result positively impact on the development and enhancement of regional integration. Direct and indirect employment linked to the operation and maintenance of transport infrastructure is largely related to the level of traffic.⁶²

3.1.3. Efficiency

For any industry especially in the road transport infrastructure to be efficient in any given region, mobility from one point to another, time taken to access various points of production and cost savings arising from the transport infrastructure would allow productivity gains to be achieved by improving their production and distribution⁶³. The ability to access the market will create both new business opportunities and increased competition, leading to further increases in returns.⁶⁴ The market will be expanded to the advantage of those companies which are able to adjust to the increased market centers. In conclusion, the road transport infrastructure could be said to have an impact on investments and income on investments and hence improve economic growth and regional integration.⁶⁵

⁶² Thornton, P. "Roads: The Price of Development Issues", Occasional Paper No. 3, School of Science and Society, University of Bradford, 2008

⁶³ Gwilliam, K.M. and Judge, E.J. "The M62 and Trans-Pennine Movement, 1970-77: Implications for Regional and Transport Planning, Regional Studies Association Conference: Transport and the Regions, London, 2008

⁶⁴ Ibid.

⁶⁵ Organization for Economic Co-operation and Development (OECD). "The Costs and Benefits of Trade Facilitation." OECD Policy Brief, 2005

3.1.4 Growth of towns

With the improvement, rehabilitation and expansion of the road transport infrastructure in the region, towns are set to come up to accommodate the truck drivers who make stops along the roads either for rest or at a weighbridge. For example, Mlolongo town has a weighbridge where trucks from Tanzania or Mombasa make stops for the weighing of their axle loads and the same applies to the trucks going to those destinations.

Also where road infrastructure has been constructed or expanded, other than small towns coming up, high cost of living is experienced, the value of property also goes up and employment is created all of which are an impact of road transport infrastructure and enhances economic growth. This is as shown by the figure below on backward and forward linkages.

Figure 2: Backward and forward linkages



Source: Emerald Insight Images 2011

3.2. Factors affecting the use of Road Transport Infrastructure in East Africa

3.2.1. Insecurity

The safety of the transit roads is crucial because this could have effect on the viability of trade through these countries . During the 2007 and 2008 post-election violence, many traders lost their business through vandalism of their cargo through the northern corridor . Although the government agencies came in quickly to offer escort to the trucks it was not efficient enough for all the traders⁶⁶

Kenya has been requiring customs escorts by its Transit Monitoring Unit for various categories of “sensitive goods”, which comprise as much as half or more of containerized transit traffic. Many of the items deemed “sensitive” are listed only to protect Kenyan industries. Furthermore, the level of road carnage is alarming to more investors and they lose their goods through accidents.

3.2.2. Spread of HIV/AIDs

The transport industry is the most affected among other sectors in Kenya and East African sub-region, they are usually referred to as the Northern corridor. Transport workers are peculiarly the most vulnerable to HIV infection due to the nature and environment of their mobile workplace. This has resulted in the loss of qualified, experienced and trained manpower for this sector. In view this, the sector is also recognized as the prime mover of industry and trade in particular in the region.⁶⁷

Industrial goods are moved from one economy to another and within a given economy. The fact that this sector has suffered the brunt of the scourge, therefore, means that trade and economic development will be impacted negatively unless the trend is reversed. The loss of

⁶⁶ Ibid

⁶⁷ Limao, N., Venables A.J., (2001). “Infrastructure, Geographical Disadvantage, Transport Costs and Trade.” World Bank Economic Review Vol. 15, 2001, pp. 451-479

workers in the sector also means that the union membership in the transport industry is progressively declining due to loss of members through death. The work environment in the transport sector facilitates the increased exposure among the workers, especially long distance truck drivers and drivers in the tourism industry and their support staff who work long hours and away from home and family.⁶⁸

In light of this International Trade Finance, in conjunction with Central Organization of Trade Union (Kenya), and other development partners, has recognized the susceptibility of workers in the sector and the urgent need to put in place measures for the management of the pandemic among the workers who are already infected and affected as they are still employees of the sector. Programs for wellness management, through prevention and public sensitization to the citizens both infected and those affected on the measures of handling the spread of HIV/AIDS. The employers in this sector equally are involved in the prevention and management of HIV/AIDS in the workplace with support from the respective governments in the East African Community and other stakeholders. The union movement in the transport sector continues to collaborate with employers in the fight against the pandemic in this sector.⁶⁹

3.2.3. Traffic Congestion

Trade is one of the factors that influence economic growth and this is dependent on efficient and speedy movement of imports and exports from the point of entry to the final destination. Movement of goods involves clearance at the various points of entry for example at the various ports in Kenya and Tanzania then followed by transportation via road and finally clearance at border points thereby resulting in long queues hence causing a delay in the

⁶⁸ Soloaga, I., and A. Winters, "Regionalism in the Nineties: What Effect on Trade?" *North American Journal of Economics and Finance* Vol. 12, 2001, pp. 1-29.

⁶⁹ Ibid

distribution, delivery of goods. This will then ultimately increase the cost of production and cost of final products to all the players in the market. Though this may not directly be recognized, it slows down the rate at which business is conducted and eventually economic growth of the region.⁷⁰

It is estimated that Kshs. 100,000 (USD 1200) is lost per day per truck as a result of the delays occasioned by long queues at the weighbridge points. As a result of these delays, cost of production increases, costs of final product goes high and unfortunately, the consumer pays the ultimate price as the cost is passed on to the consumer. In worst case scenarios where companies experience such delays over a long period of time, most companies will choose to shut down due to the high cost of production. Carrying out any form of business within the region becomes impossible under such conditions because transporters who carry raw materials that make basic commodities delay in delivery causing manufacturers to cushion themselves by ordering higher stocks or increasing the unit costs of items to recover what was lost.⁷¹

The recent traffic snarl-ups on the Northern Corridor at the Mariakani and Mlolongo weighbridges located on the Northern Corridor have been caused by weighing disputes raised by truck owners and consumers of the goods. Despite efforts by the Kenyan government to regulate, improve efficiency in clearance of goods the vices of corruption and delay continue to thrive at these facilities. What the authorities concerned do not seem to realize is that such delays affect commodity prices to consumers and also cause massive waste of time and resources of tax payers.⁷² We also those transporters using the road transport infrastructure who do not adhere to the laid down rules and regulations on the required maximum axle load limit. These group

⁷⁰ Teravaninthorn, S., Gaël R., *Transport Prices and Costs in Africa: A Review of International Corridors*. Washington DC: World Bank, 2009

⁷¹ Ibid

⁷² Dollar & Kraay (2004). "Trade, Growth, and Poverty." *The Economic Journal*. Vol. 114, No. 493, pp. 22-49.

transporters are protected by corrupt officials who look the other side upon payment of a protection fee. This then implies that the problem requires a harmonized approach by all players.⁷³

⁷³Fujimura, M. "Cross-Border Transport Infrastructure, Regional Integration and Development" ADBI Discussion Paper No.16, 2004

CHAPTER FOUR

THE IMPACT OF ROAD TRANSPORT INFRASTRUCTURE IN KENYA IN ENHANCING ECONOMIC INTEGRATION IN EAST AFRICA

4.0. Introduction

The road transport infrastructure in Kenya over the years has been wanting in terms of enhancing regional integration in the region. However, combined efforts of the member countries of the East Africa Community have made it possible for changes to be made on the state of the road. Between the years of 2002 and 2010, there has been increased construction of new roads and rehabilitation of the existing roads. A lot of effort has been put in place in expanding, rehabilitating and managing the roads through government initiatives.

The Kenyan economy has seen an all high rise in terms of economic and development growth and because of this growth that is being experienced currently; the government has come up with well researched policies to keep up with the pace of growth.⁷⁴

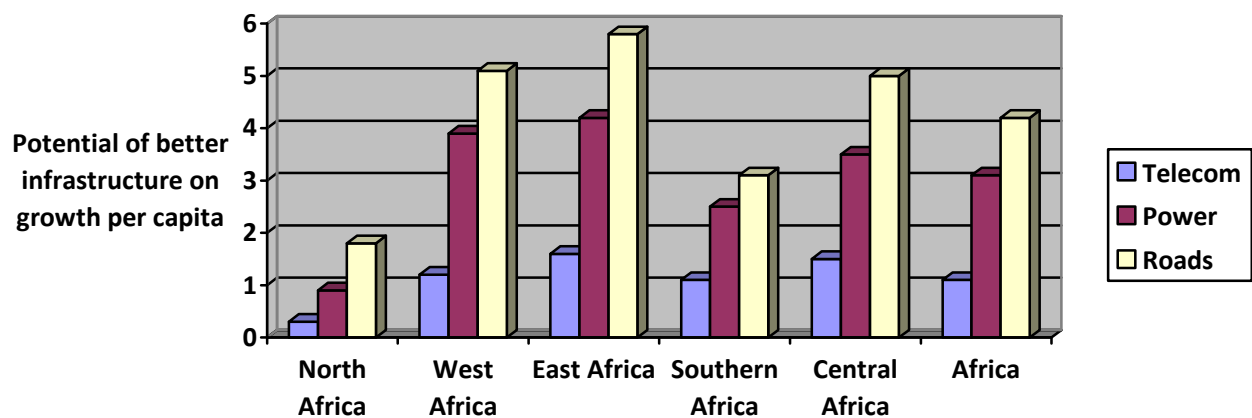
This chapter therefore brings out the various road transport projects that are being carried out in Kenya and that aim at increasing the accessibility by road users to other parts of the country and region, mobility from one point to another with ease and thus being able to connect as well with other parts of the country and region and finally, to interact with others in Kenya and other regional economies.

While this study examines how an improved road transport infrastructure in Kenya enhances regional integration in the East African region, this particular chapter brings out the different projects being carried out to accelerate economic and development growth while

⁷⁴ Arbache, J.S., & Page, J. Hunting for Leopards: Long-Run Country Economic Dynamics in Africa. *Unpublished paper, Office of the Chief Economist, Africa Region*, World Bank, Washington, D.C. (2008).

enhancing regional integration in East Africa.⁷⁵ Road transport infrastructure does contribute greatly to economic growth that it has in the past. Therefore, improvement and rehabilitation of the infrastructure has made a great input to per capita growth in East Africa than in other regions in Africa as shown in the figure below.

Figure 3: Infrastructure’s potential future contribution to economic growth (% GDP per Capita per year)



Source: Calderon, 2008

Road transport infrastructure being the highest contributor to economic growth, many economies have opted to allocate more funds and resources in rehabilitating, expanding and maintaining the existing roads while building new roads. The East Africa Community member states have come together to form a regional bloc having realized that regional integration is perhaps the only way to overcoming challenges in attaining economic growth and allowing the region to participate in international economy.

⁷⁵ Rosenstein-Rodan, P.N., Vol. 53, No. 210/211: Problems of Industrialization of Eastern and South-Eastern Europe. *The Economic Journal*, (UK, Blackwell Publishing for the Royal Economic Society, 1943).

4.1. Impact of existing road network in enhancing the East African regional integration

Road infrastructure development in any economy or region encourage investments as the cost of doing business reduces substantially in the sense that goods and services are able to be transported from one point to another with ease. The net effect of such development leads to competitiveness in production of goods and services and the reduction of monopolies and eventually leading to a reduction of the prices of the finished consumer goods.

The Kenyan government in the past decade has mobilized and allocated resources to build and develop roads. A good example has been the development of the Northern and Southern By-Pass roads in Nairobi which have eased up traffic snall ups within the Central Business District. The upgrading of the Nairobi – Thika road to a superhighway will encourage investments and growth of existing industries in the region. This will ultimately see an increased production and supply of raw materials and goods and even an increase in employment opportunities within the East African region.⁷⁶

Lack of proper and well developed road transport infrastructures is an obstacle to economic development hence the need for the East Africa Community member states to invest heavily in this sector. The government has to come up with adequate capital to invest in basic industries and this will obviously lead to further industrialization. Governments should do resource mobilization both locally and foreign to develop this sector. These resources will see creation of new road networks, upgrading and expansion of the existing road networks and maintenance of the roads. This will encourage establishment of basic industries and foster regional and world trade.⁷⁷

⁷⁶ Rosenstein-Rodan, P.N., Vol. 53, No. 210/211: Problems of Industrialization of Eastern and South-Eastern Europe. *The Economic Journal*, (UK, Blackwell Publishing for the Royal Economic Society, 1943), Pp. 8

⁷⁷ International Development Loans, planning *Pamphlets*, *National Planning Association*, New York, (1942). No. 210, Vol. LIII. No. 15, P.14

Some respondent who took part in this study indicated that the poor state of the road impacted negatively in the economic growth of the region and hampered regional integration. While it was observed that roads leading to Tanzania especially through Namanga and Sirare are in good condition having been tarmacked, the same could not be said for the roads leading to Uganda through Malaba and Busia.

For instance as earlier indicated above, the condition and accessibility of the road infrastructure determines the speed with which goods and services reach their desired destination.⁷⁸ The table presented below demonstrates the extent to which the state of Kenyan roads impacts upon economic integration in the East African region.

Table 3: Cross tabulation of condition of roads by cost of transporting goods

		Cost of transporting Goods in EA			
Condition of the road		Relatively High	Relatively Low	Varies	Total
	Tarmac all through	0 (0%)	11 (13.3%)	8 (9.6%)	19 (22.9%)
	Partially tarmac	19 (22.9%)	13 (15.7%)	10 (12.0%)	42 (50.6%)
	Tarmac but with many potholes	16 (19.3%)	6 (7.2%)	0 (0%)	22 (26.5)

⁷⁸ Kessides, I.N, Regionalizing Infrastructure for Deepening Market Integration, The Case of East Africa, “Policy Research Working Paper No. 6113,” The World Bank Development Research Group Environment and Energy Team, 2012

	Total	35 (42.2%)	30 (36.1)	18 (21.7)	83 (100%)
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Chi-Square = 24.768

Significant at .000

Cramer's V = .386

Table 3 gives an indication how the state of the roads in Kenya has affected economic integration in the East African region by establishing a negative influence upon the cost of goods in the region. The value of the chi-square which is significant at .000 (less than .05) depicts a strong association between the condition of the road and the cost of goods according to the two way table 3 above.

The cost of transporting goods in East African region is relatively high and which is occasioned to a great extent by poor condition of large sections of the roads that link countries in the East African region.

The importance of transportation in guaranteeing the smooth functioning of social systems is very key to economic growth and regional integration.⁷⁹ The importance of a smooth functioning transport system agrees with the findings of this study which indicates that a smooth functioning road transport system will help in reducing the cost of goods. In the East African region, the cost of goods increases due to the challenges experienced with the long hours that trucks have to spend on the way before getting the goods to the market. These long hours are occasioned by the poor state of the roads as well as the long hours which the vehicles have to spend at the checkpoints.

One of the prerequisites of achieving regional economic integration is through ensuring that goods and services easily access markets in different parts of the region. As identified in this study, one of the barriers to the free and faster flow of goods across the region has been the poor state of the road infrastructure especially roads that link Kenya to its western neighbours. East

⁷⁹ Calderón, C. Servén L., 'Infrastructure and Economic Development in Sub-Saharan Africa', *Journal of African Economies*, 2008, Vol. 19, No. 1: pp. 13–87

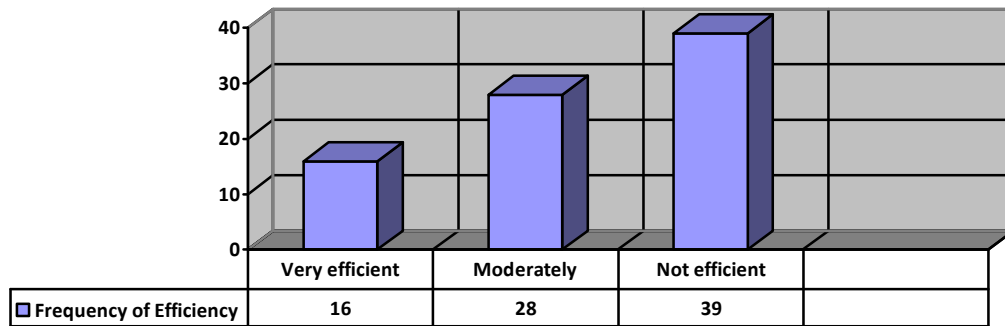
African regional economic integration has therefore suffered a blow because poor road infrastructure still acts as a barrier to trade which as indicated above has occasioned the higher cost of goods which would otherwise be accessed at a cheaper cost if the road network was improved. Furthermore, trading opportunities within the region are not exploited to the maximum because individuals pull out in response to a business environment that is not attractive to profitability.

4.2 Handling of traffic on Kenyan roads in enhancing regional integration

Apart from the poor state of the roads, the mechanisms that have been put in place to ensure smooth handling of traffic is yet another aspect of infrastructure that can determine the ease of economic connectivity between neighbouring countries. For instance, discriminative traffic rules put in place by one country may scare away transnational traders thus limit the attractiveness of a region to business activities. This study took note of this fact and set out to assess how the handling of transnational motorists in Kenyan roads has affected East African regional economic integration.

To establish the extent to which the handling of traffic has impacted on economic integration, the independent variable was measured by items such as the time for clearance at the border, experience of traffic jams and efficiency of handling traffic. Figure 4 below presents how the respondents viewed the efficiency of handling traffic on the Kenyan roads and at the border.

Figure 4: Efficiency of handling traffic



From this table, it is evident that the manner in which transnational traffic is handled in Kenya is not efficient. This opinion is further supported by respondents who participated in this study and who argue that traffic jams occur very frequently at the checkpoints in Kenya. The frequent occurrence of traffic jams at checkpoints might have been one of the reasons that prompted the respondents to express dissatisfaction with the manner in which traffic is handled at the checkpoints. The question that is yet to be answered by this study is whether this insufficiency in handling traffic has had any significant impact on East Africa's regional economic integration. The cost of goods in the region can be attributed to the frequent delays caused by traffic jams at the checkpoints.

For economic growth and development in the East African region, the governments have to come together to formulate policies and increase resources allocated for the road transport infrastructure. The major bottleneck in the growth of the East African economies has been the delays experienced in transportation of goods from their point of origin to industries. This has been caused by the poor and neglected infrastructures and governments lack of commitment.

However, with the recent efforts by governments in reviving the East Africa Community has seen them pull together resources to develop and upgrade major roads and this will boost

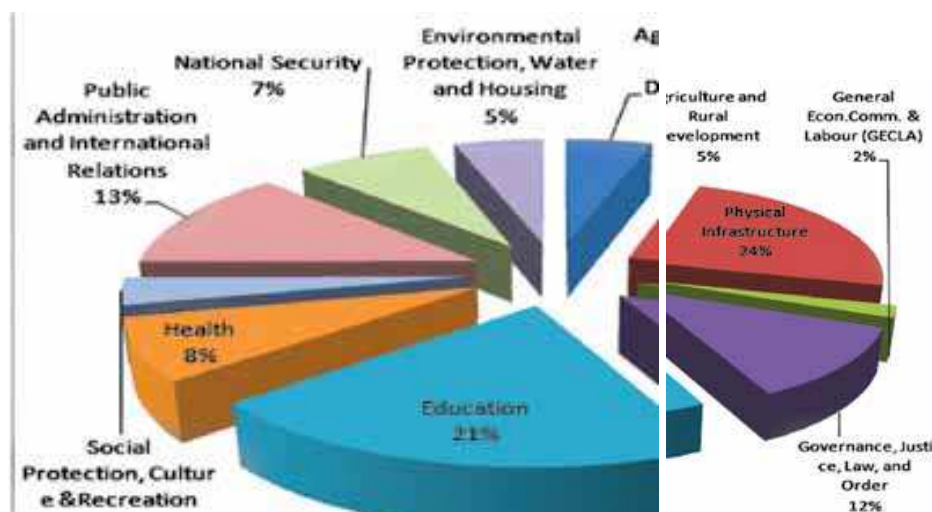
regional integration. A case in point is where the governments of Kenya, Uganda and Tanzania pulled resources in the rehabilitation of the Namanga road.

Transport infrastructure is identified as one of the key pillars in Kenya's economic development and an Integrated National Transport Policy has now been formulated to this end. The government seeks to develop a 10,000 kms road network by the end of the current government's tenure.

Resources by the Kenya's development partners in Europe, Asia and Africa have seen an increased upgrading of road networks and construction of new roads. Kenya's contribution towards developing the road transport infrastructure has been through the allocation of resources by the National Treasury in its annual budget which is channeled through the Constituency Development Fund. Another source of funds has been the Fuel Levy Fund.

Kenya allocated Kshs. 123.6 billion for the improvement and construction of roads in its 2012/13 budget. This is a significant fraction of the trillion budget by the government. The ultimate effect on this allocation is the commitment in ensuring that the road networks in Kenya are developed. A good illustration of the resource allocation compared to other sectors is as per the diagram below.

Figure 5: Spending by sector 2012/13



Source: Budget highlights 2012/13

Note: shares as a % of total ministerial expenditure allocation

During the 2013/14 financial year, the Kenyan government allocated a total of Ksh 91.9 for the development of roads.⁸⁰ This assisted in the completion of rehabilitation of existing road networks and maintenance of the newly developed roads. This commitment by the Kenyan government can be well illustrated by considering three key ministries and their budgetary allocations in the current financial year.

⁸⁰ Daily Nation, (Nairobi), June 14, 2013. 2013/14 financial year budgetary allocations, <http://www.nation.co.ke/oped>, accessed on 17/9/2013

Table 4: Summary of Estimates for three key ministries in Kenya (Ksh Million)

Vote	Details of vote	Recurrent		Development		Total		% change of total Expend. from 2012/13-2013-14	% share of Total Budget 2013/14
		Gross Expend 2012/13	Gross Estimates 2013/14	Gross Expend 2012/13	Gross Estimates 2013/14	Gross Expend 2012/13	Gross Estimates 2013/14		
106	Min. of Education	86,994.8	97,101.8	25,530.1	33,457.3	112,524.9	130,559.1	16.03	8.0
108	Min. of Health	53,527.4	19,811.2	31,501.5	14,936.5	85,028.9	34,747.7	(59.13)	2.1
109	Min. of Transport and Infrastructure	32,314.5	22,798.8	110,108.8	102,924.3	142,423.3	125,723.1	(11.73)	7.7

Source: Printed Estimates of Expenditure 2012/13 and 2013/14 and own calculations. The Institute of Economic Affairs (IEA -Kenya) 2013.

4.3 Progress in East African region road networks

Kenya being an economic hub in the East African region, the road transport infrastructure has witnessed immense revolution. There has been an increase in the amount of resources allocated to this sector which has seen development and increased road networks. This will eventually lead to a developed region.

4.3.1. The Thika Super-highway

Huge projects have been undertaken a case in point is the current Thika superhighway. A six lane road that connects the Nairobi Central Business District and the industrial town of Thika has been completed. This has made it possible for raw materials and finished products to be transported from that part of the country to the rest of the region.

This road has linked Nairobi to Meru which has enabled the transportation of the perishable miraa commodity that reaches the market easily. This road has also linked Kenya to Ethiopian boarder the road was built at an estimated total cost of over Ksh 27 billion (US\$ 330,000,000).⁸¹ This was funded by the African Bank group and the government of China.

As it is the road has greatly impacted on regional trade and economic development as those who use the road have had the time spent on roads reduced due to a reduction in traffic jams. The same is experienced by truck drivers whom in the past would ordinarily spent weeks or months on the road. The newly developed road has now led to increased efficiency and convenience to road users.⁸²

4.3.2 The Eldoret-Juba Highway

The Eldoret-Juba road is another project that the Kenyan Government has embarked on. This aims increasing the cross border trade and investments between Kenya and the newly

⁸¹Thika highway upgrading 2011, <http://nairobiplanninginnovations.com/projects/thika-highway/>, accessed on 14/9/2013.

⁸²African Development Fund Appraisal Report 2007

created Nation of South Sudan. South Sudan will be able to transport its goods from the port of Mombasa. The other East African countries of Kenya, Uganda and Tanzania will be able to access this new country of South Sudan for raw materials and market for finished products.⁸³ This road is expected to handle 90% of the cargo on the northern corridor and accessibility of the port by Sudan which will foster economic growth and development in the East African region.⁸⁴

4.3.3 The Nairobi-Eldoret-Malaba-Kampala road

The Kenyan government has invested heavily in the rehabilitation of the once neglected road. This has seen the rehabilitation of the Nairobi-Eldoret road. The time spent by truck drivers ferrying commodities has reduced drastically.

Another milestone has been the establishment of specific lanes at all custom points and weighbridges to be used by the trucks. This has eased up the time spent at this custom points and the business community is not held up due to the traffic snall ups and has positively fostered integration in the East African region.

4.3.4. The Arusha-Holili-Voi road

This is a road that connects Kenya and Tanzania through the Voi boarder and covers a total of 240kms. This is a project that has been agreed upon by the two countries to be developed so as to foster economic growth. Its development and completion will spur growth in trade and especially tourism between Kenya and Tanzania and eventually accelerate integration.

⁸³ Imara Africa Securities team, Infrastructure developments aim to increase cross-border trade between Kenya and South Sudan, <http://www.howwemadeitinafrica.com/infrastructure-developments-aim-to-increase-cross-border-trade-between-kenya-and-south-sudan/23908/>, January 21, 2013, accessed on June 21, 2013.

⁸⁴ Business Review; Construction on Eldoret-Juba road to begin early 2014, February 1, 2013, <http://www.constructionkenya.com/2849/construction-on-eldoret-juba-road-to-begin-early-2014/>

4.3.5. The Malindi- Lunga Lunga- Bagamoyo road

This is also a road that connects the Kenya and Tanzania. It runs along the east African coastline and covers 400kms. The development of this road will see growth in tourism, increase in ferrying of raw materials to parts of the two countries and this will in the long run foster regional economic growth and development. It is believed that this road will provide a territorial link between Dar-salaam, Tanga and Mombasa.

4.3.6. The Nyamasaria – Kisumu – Kisian road

The Kenyan government has also worked and completed the Nyamasaria – Kisumu-Kisian road and has converted it to a dual carriageway. On the said road, an installation of a new bridge at Nyamasaria was done and on the Kisumu Southern bypass a single tarmac carriageway from Nyamasaria to Kondele was also completed with an overpass at Nyamasaria and Kondele.⁸⁵ The improvement on this road was intended to ease congestion and transportation costs for heavy commercial trucks plying the roads within the country and other regional countries.⁸⁶

4.4. State of security on roads and Economic Integration

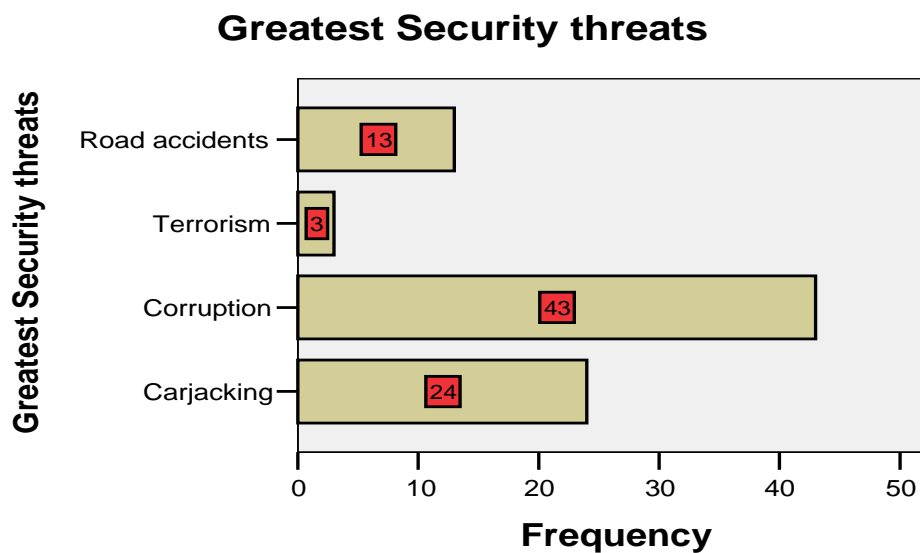
Having assessed the impact of road network and handling of traffic on regional economic integration, it is of great importance to assess how security situations on the transport facilities impact on regional economic integration. It is of necessity to assess the role of security because it forms part of the infrastructure which facilitates access to different places. It is assumed that if the highways are infested with cases of insecurity, transport will be affected and goods will not reach their market destinations since vehicle operators will shy away from the roads. This formed the basis of the investigation intended by the third research question.

⁸⁵ <http://softkenya.com/kenya/roads-in-kenya/> Last accessed on August 21, 2014

⁸⁶ Ibid

The state of security on the roads is a prerequisite for the integration between neighboring states since it is the roads that enhance the necessary connectivity between states.⁸⁷ However, the importance of security on the roads has been jeopardized by numerous security threats on Kenyan roads. As presented in figure 2 below, this study identified four most common security threats on roads in the East African region which also hamper the ease of integration between the regional states.

Figure 6: Common security threats on roads



According to figure 6, corruption on the roads emerged as the greatest security threat. Forms of corruption that were identified by respondents included bribery at police checks and even at the border checks. One common form of corruption which was mentioned mainly by the owners of the trucks who entrust them to drivers was the conspiracy to force an accident so that the crew can collude with some individuals on the way to loot the property on board. One owner

⁸⁷ Calderón, C. Servén L., 'Infrastructure and Economic Development in Sub-Saharan Africa', Journal of African Economies, 2008, Vol. 19, No. 1: pp. 13–87

of the petroleum trucks expressed dissatisfaction with the kind of accidents that oil trucks get into. He observed in an interview that some drivers cause artificial accidents so that they siphon the oil to go and sell after which they claim that it is the members of the public who exploited the opportunity and siphoned the oil. Other than oil, other goods also recorded a similar complain whereby the cargo never reaches the desired destinations when intact as they were packed.

Other than corruption, carjacking emerged the second security threat. Most road users especially those with heavy commercial vehicles do not travel with police for security. More often than not the drivers of this trucks will only travel with a turn boy while moving goods worth millions and because of the slow pace at which they are moving due to the poor state of the road, they are prone to being carjacked and their good diverted to other destinations by highway robbers.

Though terrorism has been a reality in some East African countries such as Kenya, Uganda and Tanzania, a large majority of the respondents did not consider it a significant security threat. A terrorism attack in Kenya and its neighbouring countries is not a daily occurrence and has mostly affected business premises’.

Worthy to consider however was the extent to which it could be statistically proven that the state of security impacted on regional economic integration. Table 5 below presents the quantitative values generated from the cross tabulation of the existing security threats by how easy it is for people and goods to access East Africa countries.

Table 5: Cross tabulation of security threats by clearance at the border

		Clearance at the border			
		Very difficult	Relatively easy	Very Easy	Total
Security Threats	Carjacking	11 (13.3%)	5 (6.0%)	8 (9.6%)	24 (28.9%)
	Corruption	21 (25.3%)	17 (20.5%)	5 (6.0%)	43 (51.8%)
	Terrorism	3 (3.6%)	0 (0%)	0 (0%)	3 (3.6%)
	Road accidents	0 (0%)	8 (9.6%)	5 (6.0%)	13 (15.7%)
	Total	35 (42.2%)	30 (36.1%)	18 (21.7%)	83 (100%)
	Chi-square = 19.333		Significant at .004 (P > .05)		Cramer's V = .341

The statistical values of table 5 indicate that the existing security threats on the roads have influenced accessibility of people and goods in and out of East African countries. The security threat that appears to pose the greatest hindrance to the accessibility of people and goods is corruption. Levels of bribery has gone too high at the border that some vehicles end up being held not necessarily because they have flouted any rule but because the officers want to be bribed in order to let the vehicle to pass.

This definitely impacts on the cost of goods because the vehicle operators who end up paying the bribe have to either forego the money and risk running at a loss or choose to recover the money by factoring the cost of bribing into the cost of the goods being taken for sale. This is

a reality which most of the private stakeholders claimed had made the East African region to be less competitive in attracting interest in transnational business.

An interesting observation during this study was however noted in that there are some respondents who said that corruption made the flow of goods and people easy. Though the foregoing analysis has indicated that corruption acted as a barrier to business, and there are people who exploited this opportunity to their advantage. Due to corruption, it has been easy for some criminals to pass through the border even without travel documents.

Noteworthy is that like corruption, carjacking has also made accessibility across borders to be difficult other than making it very difficult for business people to travel. Furthermore, carjacking made it impossible for commercial vehicles to travel beyond 6 pm for fear of being carjacked and property stolen. Because of these numerous stopovers to take precaution from security threats, the duration of travel to various destinations has greatly increased. For example the truck dealers said that it took an average of one week for a truck loaded with fuel to travel from Mombasa to Kampala. A combination of poor road networks and security on the roads was responsible for such delays.

In conclusion, it is possible to argue based on the findings of this study that corruption and carjacking bore the greatest responsibility on the difficulty that is experienced by people in accessing different parts of East Africa. In this manner therefore, security threats on the road is taking a great toll on the possibilities of realizing a fully economically integrated East Africa.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0. Introduction

This chapter presents a summary of the findings, discussion, conclusions and recommendations for practice and for further research on the issue being discussed. The chapter briefly summarizes the study with greater emphasis being given to the key findings of the research. A few recommendations have been suggested at the end of the chapter to inform policy and further research for those who have the intention of exploring this field further.

5.1. Summary of the Study

This study sought to investigate how road transport infrastructure impacts upon regional and economic integration in the East African region. The study aimed at establishing the extent to which road networks, handling of traffic and security situations impacted upon regional and economic integration. With the help of a case study descriptive research design, the researcher managed to collect a series of quantitative and qualitative data which have been analyzed largely using quantitative analytical techniques to establish the extent to which road transport infrastructure impacts upon regional integration in East Africa.

With the help of a total of 83 respondents drawn from different sectors, the study established that the existing road networks, the manner in which road officers handle traffic and the existing security threats were aspects of infrastructure that had varying effects on regional economic integration. The key identifiers of less integration in the economic spheres were the high cost of goods and the difficulty that was still experienced in an attempt to access various countries in the region. The indication however was that the places that had better such as those leading to Tanzania from Kenya had better access because the speed of movement was adequate.

However, the connectivity between Kenya's western neighbours emerged not to be so good because the connecting roads were not in a good state. Out of the three aspects of infrastructure that were under investigation, poor road network posed the greatest challenge to regional economic integration. This is because due to the bad roads, vehicles took longer times to travel and this led to higher prices of goods.

The state of the existing road networks however was not alone in impacting negatively on regional economic integration. The manner in which traffic was being handled along the road and at the borders also impacted negatively on economic integration though not to the same degree as poor road networks. Furthermore, security threats key among them being corruption and carjacking as well played significant roles in jeopardizing success in economically integrating the East African region

In conclusion, it is in order to present based on the findings of this study that various aspects of infrastructure intertwine in ensuring success in the realization of an economically integrated East African region. The underlying factor however is that infrastructure plays a key role in the quest to attain regional integration in any region in the world

5.2. Conclusion

From the study it is evident that achieving integration is an involving process that requires much input from members. It can be concluded that transport among stakeholders is an important element of the integration process. Transport has various modes and channels. To support effective integration in the East Africa Community, appropriate channels and modes must be chosen to ensure successful and facilitative road transport process. Member countries and potential member countries must review their infrastructural affiliations and priorities before adopting the process of integration.

Additionally, since there are different aspects of infrastructure involved, there is need for a multisectoral approach in ensuring that a holistic response is taken that would guarantee a more sustainable integration process.

5.3. Recommendations

5.3.1. Interstate and Institutional collaboration

Since the realization of regional connectivity stands to benefit all member states, member states of the East African Community need to domesticate the policies on infrastructural development so that barriers to transport are equally eliminated in all territories. It is also time for the various East African countries to undertake a common planning for infrastructural development so as to ensure that no country is left behind in this development.

Just like interstate collaboration is required, institutional collaboration is also mandatory to ensure that every sector plays its rightful role in ensuring that transport is made easy. As the governments take the initiative to lay down the proper infrastructure that would favor the various people, the road users have to be compliant to the laid down traffic rules and regulations.

Also, just like individual governments have a transport authority in their countries, the East Africa Community should consider establishing a regional transport authority to oversee the smooth running, management and maintenance of the regional road networks in an effort to enhance regional integration and boost economic growth of the region.

Furthermore, the East Africa member countries should also look into pulling resources as a region and come up with a scheme for joint financing to handle regional projects as a block. This will ensure speedy completion of regional projects due to the availability of sufficient funds. Therefore, as governments allocate funds to their national projects, they should also

allocate funds to a regional infrastructural fund to assist in realizing this goal of regional integration.

REFERENCES

- African Development Bank “State of Infrastructure in East Africa” Statistics Department Africa Infrastructure, Knowledge Program, 2013.
- Beuran, M. et al. Are There Myths on Road Impact and Transport in Sub-Saharan Africa? CES Working Paper, 2013.
- Bryman, A., Social Research Methods, New York: Oxford University Press, 2008
- Calderon, C. And Serven, L. I., Infrastructure and Economic Development in Sub-Saharan Africa. Journal of African Economies, Vol. 19, o. 1, pp. 13-87, 2010.
- Cambridge Economic Consultants, “Case Studies of the Role of Infrastructure Projects in Local and Regional Economic Development”, unpublished report, 2007.
- Cervero, R., Transport Infrastructure and Global Competitiveness: Balancing Mobility and Livability, “The ANNALS of the American Academy of Political and Social Science” November 2009, pp. 626: 210-225,
- Chymera, A., “Motorway Investment and Regional Development Policy”, unpublished dissertation for postgraduate diploma in town planning. Leeds Polytechnic. 2006
- Djankov, S. et al., “Trading on Time” World Bank Working Paper No. 3909, (2006).
- Dollar and Kraay, Trade , Growth and Poverty”. The Economic Journal. Vol 114, No. 493, pp. 22-49
- Fujimura, M. “Cross-Border Transport Infrastructure, Regional Integration and Development” ADBI Discussion Paper No.16, 2004
- Giersing, B., “Corridor diagnostic Study, Northern and Central Corridors of East Africa: Railway

- Revitalization Strategy”. Presentation for 2nd Stakeholders Workshop Review of Draft Action Plan, Dar es Salaam, 2011.
- Gilpin, R. *The Challenge of Global Capitalism: The World Economy in the 21st Century*, Princeton: Princeton University Press, 2000
- Green. *Econometric Analysis (Fifth Edition)*, New Jersey: Prentice Hall Publishers, 2003
- Gwilliam, K.M., Judge, E.J., “The M62 and Trans-Pennine Movement, 1970-77: Implications for Regional and Transport Planning, Regional Studies Association Conference: Transport and the Regions, London, 2008
- Hummels, D., “Time as a Trade Barrier” Purdue University Press, 2001
- Irving, A.W, et al. *Trade Facilitation in the East African Community: Recent Developments and Potential Benefits*, Washington: US international Trade Commission, 2012
- Kempe, R. H., *The Political Economy of Development in Kenya*, New York: Continuum International Publishing Group, 2012.
- Kessides, I. N., *Regionalizing Infrastructure for Deepening Market Integration: The Case of East Africa*. Policy Research Working Paper No. 6113. The World Bank Development Research Group Environment and Energy Team, 2012.
- Lee, H., Roland-Holst D., and Mensbrugge D. “China's Emergence in East Asia under Alternative Trading Arrangements.” *Journal of Asian Economics* Vol 15, No. 4, 2004, pp 697-712
- Limao, N., Venables A.J., (2001). “Infrastructure, Geographical Disadvantage, Transport Costs and Trade.” *World Bank Economic Review* Vol. 15, 2001, pp. 451-479
- Mbuli, E.V. “Improving Transit Transport in East Africa: Challenges and Opportunities.” United Nations Conference on Trade and Development. Mid-term Review of the Almaty

- Programme of Action. 2007
- Mugenda, A., & Mugenda, O., *Research Methods Qualitative and Quantitative Approaches*, Nairobi: Act Press, 2003
- Mukherjee et al, Utilization of passenger transport subsidy in Kolkata: A Case Study of Calcutta State Transport Corporation, "Research in Transportation Economics," Volume 38, No. 1, February 2013, Pages 3–10
- Organization for Economic Co-operation and Development (OECD). "The Costs and Benefits of Trade Facilitation." OECD Policy Brief, 2005
- Pirie, G.H., Transport, food insecurity, and food aid in sub-Saharan Africa, "Journal of Transport Geography ,Vol. 1 (1993), pp. 12–19
- Rugamba, A., Wainaina S., *Transit Transport Systems in East and Central Africa: Issues, Actions and Constraints*, An unpublished Report prepared for United Nations Conference on Trade and Development, 1994.
- Shkaratan, Maria. "Tanzania's Infrastructure: A Continental Perspective." World Bank Policy Research Working Paper 5962, 2012
- Soloaga, I., and A. Winters, "Regionalism in the Nineties: What Effect on Trade?" *North American Journal of Economics and Finance* Vol. 12, 2001, pp. 1-29
- Teravaninthorn, S., Gaël R., *Transport Prices and Costs in Africa: A Review of International Corridors*. Washington DC: World Bank, 2009
- Thornton, P. "Roads: The Price of Development Issues", Occasional Paper No. 3, School of Science and Society, University of Bradford, 2008

Transit Transport Coordination Authority (2004), “Transit Transport Coordination Authority of the Northern Corridor, Investment Opportunities at the Northern Corridor with Emphasis on Transport Infrastructure.” A paper prepared by the Transit Transport Coordination Authority Secretariat for presentation at the COMESA Business Summit Kampala, Uganda. 2004.

APPENDICES

APPENDIX II: QUESTIONNAIRE

Part A: Introduction

Dear Respondent,

My name is Omondi A. Sarah, a Master student at the University of Nairobi pursuing a Master of Arts Degree in International Studies. In order to partially fulfill the requirements for the award of a Master of Arts in International Studies, I am expected to carry out a study which will end up in the writing of a thesis. To accomplish this goal, I am in the field to collect data relating to the topic, *“The impact of Road Transport Infrastructure on Economic Integration between Countries in the East African Region: A Case Study of Kenyan Road Infrastructure”*

You have been chosen to take part in this study by providing any information you have regarding this topic. The information that you give will be treated with utmost confidentiality and will be used strictly for purposes of this study.

Part A: Background Information

1. Gender?

Male [] Female []

2. Nationality

Kenyan Uganda Tanzanian Rwandese

Any Other (Specify).....

3. Country (ies) often travelled to?

.....

4. Road used often

Busia [] Malaba [] Namanga []

Lunga Lunga [] Sirare []

Any other (Specify).....

Part C: Existing Road Network

1. How would you describe the condition of the roads that connect Kenya to its neighbouring countries?

Tarmac all the way to the border []

Partially tarmac []

Tarmac but with many potholes []

2. How many roads do link Kenya to each of its immediate neighbors?

Only 1 road in each case []

Two roads []

Three roads []

More than 3 roads []

3. How efficient are the cross border roads in handling the amount of traffic that they handle in a day?

Very efficient [] moderately efficient []

Not Efficient []

4. How frequent does the relevant authorities conduct routine maintenance on road link Kenya to its neighbors?

Frequently once in every month []

- Occasionally sometimes once in a year []
- Only when road users complain of the poor state of the road []
- Never []

Part D: Handling of Traffic

1. How often do road users in Kenya experience traffic jams especially while approaching the border?

- Very often on a daily basis []
- Less often mostly on a weekly to monthly basis []
- No traffic jams at all []

2. a) What is your comment on the duration of time that it takes currently to travel in Kenya to the various border towns?

- It is quick enough []
- It is slower than usual []

b) Briefly explain your answer in 2a above.....

3. How many vehicles are served at the border in a day?

.....

4. What is the approximate time it takes to clear one vehicle at the customs section in the various border points in Kenya?

.....

Part E: State of Security

1. What is the greatest security threat to cross border transport within Kenyan roads (**TICK**

ONLY ONE GREATEST THREAT)

Carjacking []

Corruption by security officers []

Terrorism []

Road accidents []

Any other (specify).....

2. Which road safety measures have been put in place in Kenya to regulate the conduct of transnational motorists?

There are police checks along the highway []

Ensuring that drivers of heavy commercials are best qualified []

Thorough checking at the border []

Any other (Specify).....

.....

3. What measures has the government of Kenya and private vehicle owners taken to ensure that cross border transport is safe

.....

.....

Part F: Economic Integration

1. What percentage does the following items transported across borders in the East African Region represent (**Rank in order as follows: 1. Constitutes more than 50% of items transported, 2: Forms less than 50% of items transported**)

a) Perishable goods []

b) Non perishable goods []

c) Passengers []

2. What is the **GREATEST** challenge faced in the transportation of goods, people and services across borders in the East African region? (**TICK ONE**)

Poor road network []

Slow pace of clearance at the customs and weighbridges []

Road insecurity []

Any other (specify).....

3. How is the cost of goods in Kenya compared to its neighbors?

The same []

High []

Lower []

Varies (It's never constant) []

4. What would help in harmonising the cost of doing business within the countries in the East African region? (**TICK ONLY ONE**)

Harmonising the currency []

Improving the state of the roads that link these countries []

Encouraging friendliness/co-existence between citizens of the countries []

Any other (Specify).....