

# A REVIEW OF THE CHALLENGES OF RURAL ROAD NETWORK DEVELOPMENT IN KENYA

**JUSTUS N AGUMBA**

Justus N Agumba, Senior lecturer, Department of construction management and quantity surveying, University of Johannesburg, Johannesburg, South Africa

## **Abstract**

It is a proven fact that development and maintenance of road infrastructure are prerequisites for rapid economic growth and poverty reduction. Despite Kenya being considered an economic powerhouse in the Eastern and parts of Central African Economic block, the size of the rural roads network, has suffered from inadequate maintenance, repair and rehabilitation (MR&R). This paper aims to provide a review of challenges the Kenyan government has faced on its rural road network development, the effects of rural road network on productivity and growth, and the interventions proposed. This research is based on literature review. The current challenges stifling the rural roads development are: technically inexperienced constituency roads committee, increased overhead costs, large conflict of interest due to bigger groups involvement, inadequate supervision capacity, transition into the devolved government structures and challenges of road classifications into national and county roads. The negative effects on the rural road network on growth and productivity are delays, and loss of sending farm produce to the market. The Kenyan government interventions are; consideration of increasing fuel levy to create an enabling environment for the private sector participation under private public partnership (PPP) arrangements but to name a few. This study advocates for practical policies that will lead the country to achieve Vision 2030, which the authors view as a catalyst to correct the ills of the past 50 years of its independence.

*Keywords:* Constraints, Developing, Infrastructure, Literature, Maintenance.

## **Introduction**

The transport and telecommunication infrastructure subsector in Kenya contributed the highest gross domestic product (GDP) in the economy for three consecutive years, from 2008-2011. In 2012 it also contributed the highest GDP at 9.3% (Kenya Institute for Public Policy Research and Analysis, 2013). It also provides the necessary linkages for promoting national and international trade, economic growth, poverty reduction and wealth creation. Road transport accounts for over 90% of Kenya's total passenger and freight transportation (Africa Development Bank Group, ADBG, 2014). Kenya experienced rapid expansion of road infrastructure in the late 1960's and 1970's, largely as a result of high levels of development assistance from bilateral and multilateral agencies (Kasuku and Macharia, 2003).

In spite of the stated importance of the road sector and the previous rapid expansion, there was a drastic reduction in support, and absence of alternative funds for routine maintenance, which led to considerable deterioration of roads, both classified and unclassified, since the 1980's. This has been cited as the reason for the decline of Kenya in regional competitiveness in trade, industry and commerce (Kasuku and Macharia, 2003). While there is heavy reliance on road transport in Kenya, of the 160,886-km network classified and unclassified only 7% is paved. This is not economically sustainable as it carries 90% of freight and passengers. The total length of paved roads per 10,000 inhabitants in Kenya is 2.19km, which is less than the East Africa Community member countries average of 2.53km (Africa Development Bank Group, 2014). Recent surveys also suggested that about 50% of the road network in Kenya is in good condition while the balance requires rehabilitation Ministry of Transport (2010) furthermore, 30% of Kenya's population live within two kilometres of an all-weather road well above the benchmark for low-income countries, but only half the level found in middle-income countries (Briceño-Garmendia and Shkaratan, 2010). The rural roads are classified as D, E and others totalling slightly over 136,000 Kms as indicated in the Table 1. However, the paved rural roads are insignificant in relation to the total length of rural roads network (Kenya Rural Roads Authority, 2012-2013).

Table 1. Rural road network

No.	Road class/description	Paved roads (kms)	Unpaved roads (kms)	Total (kms)
1	Class D Roads	1233.28	9485.38	10718.67
2	Class E Roads	590.58	26133.52	26724.11
3	Special purpose Roads	100.10	10405.92	10506.03
4	Unclassified Roads	700.52	87725.61	88426.14
<b>Total</b>		<b>2624.50 (1.9%)</b>	<b>133750.44 (98.1%)</b>	136374.94

Source: Kenya Rural Roads Authority, 2012-2013

Furthermore, the road network and density and conditions vary across the country, which should be addressed (Kenya Institute for Public Policy Research and Analysis, 2013). These road networks are overlaid on major settlements. They are concentrated in the highlands of south western Kenya. These are the agricultural heartland and areas of highest population density. The highways, primary, secondary and feeder roads are in the southwest, near Lake Victoria (Briceño-Garmendia and Shkaratan, 2010; de Sherbinin, Adamo, and Sydor, 2013). The dryer northern areas of Kenya are far more sparsely populated and the road networks are less dense. Although some roads are coded as highways, these are in reality mostly two-lane paved roads. Tertiary roads are generally little more than dirt roads or tracks. Furthermore, the World Health Organization indicated that Kenya was ranked 25<sup>th</sup> highest in the world for the total number of road traffic deaths in 2010 and 45<sup>th</sup> in road death rate, deaths per 100,000 population (de Sherbinin, Adamo, and Sydor, 2013).

In-line with the aforementioned discussions of the importance and shortcomings of the road network in Kenya, the purpose of this paper is to establish the challenges that the Kenyan government has faced in relation to rural road network development, their effect on growth and productivity and the intervention strategies implemented or proposed. Hence, the following research questions were proposed:

- What are challenges the Kenyan government faces on its rural road network development?
- What are the effects/impacts of rural road network on productivity and growth? and
- What are the interventions to improve the rural road network?

## Literature Review

### Challenges of Kenya Rural Road Network Development

Various transport policy statements are contained in various documents including the National Development Plan (2000-2008), the Poverty Reduction Strategy Paper (PRSP), the Kenya Economic Recovery Strategy, the National Alliance Rainbow Coalition (NARC), Orange Democratic Movement manifesto and vision 2030 blue print. According to Kasuku and Macharia, (2003) commitment to a strategic and broad-based approach to transport planning is gauged by the extent to which a country's roads policies are based on the following fundamental criteria:

- Integration—ensuring that all roads decisions are taken in the context of a coherent, integrated transport policy covering all modes;
- Accessibility—making it easy to reach destinations;
- Safety—making travelling safer;
- Economy—getting good value for money and supporting sustainable economic activity in appropriate locations;
- Environmental impact—both positive and negative, on both the built and the natural environments, and at the global, regional and local levels; and
- Tackling road congestion.

Against these criteria, the issues that have affected road transport sector in Kenya as cited by Kasuku and Macharia, (2003) is lack of coordination i.e. it is difficult to coordinate the activities of the various road agencies, to determine their financial requirements, and to address the problems of the road sector in a synchronized manner. The general high value of roads compared with railways and air travel provides a *raison-d'être* for ensuring coordinated management with access to adequate funds to ensure the large investments in roads yield value-for-money operations. Funding estimates were far higher than available and allocations from government resulting in inadequate maintenance and rehabilitation of roads. This has led to most roads, both paved and unpaved roads to deteriorate significantly through a lack of maintenance, repair and rehabilitation. The main paved network, are being overloaded by vehicles and traffic growth has resulted in a substantial network of

unpaved roads carrying traffic levels that would justify paving the roads: about 2,500 km of unpaved roads carry over 200 vehicles per day.

Finally Kasuku and Macharia, (2003) indicated that lack of a comprehensive/integrated transport policy framework does not consider the impact on land use, the natural environment and local public finance. Sustainable development demands that the country must develop a road policy strategy that accounts for other transport sectors and the overall development concerns of efficiency, equity and environmental sensitivity.

Odero and Njenga, report (2005) indicated that there is no maintenance policy for Kenyan roads despite apportioning specific road classes to particular agencies. Furthermore, revenue for road maintenance remains a challenge due to the level of resources in the constituency development funds which was insufficient for rural roads and other transport infrastructure and should be increased. They further suggested that lack of adequate quality control in road execution, misuse of road facilities; and lack of adequate research in roads. There is also no delivery system for comprehensive routine maintenance of Kenya's roads. These challenges are further exacerbated by limited finance to implement the road policies effectively.

The Kenya Rural Roads Authority report (2012-2013) indicated that the challenges experienced were; a number of technically inexperienced constituency roads committee members with little knowledge of procurement law and regulations, increased overhead costs, less cooperation from local authorities over road works, large conflict of interest due to bigger groups involvement, inadequate supervision capacity, the transition into the devolved government structures, and challenges of road classifications into national and county roads.

Briceño-Garmendia and Shkaratan (2010) indicated that Kenya faces a huge rehabilitation backlog that must be addressed before the trunk network can be considered to be in a maintainable condition. As of 2006, level of capital spending for the roads sector in Kenya was at around 1% of Gross Domestic Product. This was low by regional standards and fell substantially short of what would be needed to clear the rehabilitation backlog in a reasonable period of time. There is a need for a one-time push on road sector investment to remedy this situation. Systemic issues further affect the country's public investment system. These will need to be addressed to ensure that any major scale-up in capital expenditure is cost-effective. Road investments have been characterized by low rates of budget execution (about 60% of the 2006 budget was spent), cost overruns of as much as 80% over engineering estimates, and lengthy delays that tend to double the implementation period. Furthermore, inadequacies in the system for supervising construction contracts have cut quality and shortened the life of road networks.

The Ministry of Roads (2012) identified challenges gazetted in the road sub-sector policy document. These challenges included: non implementation of the drafted Integrated National Transport Policy which was prepared in 2009, hence led to the lack of integration of transport modes; lack of a national spatial plan resulted in haphazard development; the available funds currently for development and maintenance of roads are inadequate, therefore a substantial part of the road network is not sufficiently attended to, resulting in huge maintenance backlog. There are also concerns over sustainability of Road Maintenance Levy Fund given the emerging issues relating to consumption of petroleum products by non-road users. Road safety management is further fragmented across various institutions, therefore resulting in poor coordination which leads to high numbers of road accidents. Lack of effective road classification system is in existence, given the provisions of the Constitution. Further, challenges were capacity i.e. institutional and technical know-how, lack of axle road control, road reserve encroachment, cost of land acquisition is high, road construction plant and equipment are expensive to hire, the legal framework for private sector to participate is inadequate and finally volatility of foreign exchange to road network investment.

The African Development Bank Group (2014) suggested a number of challenges which continue to undermine the sustainability of investments in the transport sector in Kenya. Key among these are: funding shortfalls which has resulted in a maintenance backlog estimated at about 20-30%; overloading, notably on major highways; inadequate institutional capacity for road maintenance, especially for the newly established devolved agencies; and continued lack of road safety. Despite these challenges, some governance issues in the transport sector persist including: lack of clarity in division of responsibility amongst transport related institutions governed by KRB; weak accounting systems and record management coupled with lengthy procedures for payments; inadequate stakeholder participation in decision making, inappropriateness and ineffectiveness of the institutions in the sector; and absence of proper complaint mechanism. The road network with the neighbouring countries is under pressure, because of the poor road condition, furthermore, the devolve process which came into implementation in 2010 is underway but faces challenges. This is exacerbated by human capacity constraints and large budget deficit.

### **Effects/Impact of Road Network on Growth and Productivity**

It is a proven fact that development and maintenance of physical infrastructure are prerequisites for rapid economic growth and poverty reduction, as they influence production costs, employment creation, access to markets, and investment. However, the Ministry of State for Planning (2008), supported by the Ministry of Industrialization (2010), indicated that the poor and dilapidated state of road transport infrastructure in Kenya has led to low productivity, high production and distribution costs and uncompetitive products and services. Further, the road networks in Kenya are concentrated in a few urban areas, with limited feeder roads in regions with resources endowments. This has resulted in the agglomeration of industries in areas with good road networks thus further creating disparities in regional industrial development. According to the Ministry of Industrialization the poor state of the road network causes delays, breakages and high maintenance cost for transport machinery leading to high costs of doing business. This has also resulted in the concentration of industries in areas with a good road network thus creating disparities in regional industrial development. The MoT, (2010) report indicated that transport policies have largely supported motorized transport at the expense of non-motorised transport and have denied the poor and disadvantaged benefits inherent in Non-Motorized Transport modes (NMIMTs) leading to marginalization of NMIMT users in both urban and rural areas. The African Development Bank Group (2014) indicated that family farming has been characterized by low productivity due to inadequate rural roads including other infrastructure components. Furthermore, police road blocks and multiple weighbridges continue to slow the traffic flow and create bribery and corruption opportunities.

### **Government of Kenya Response to Rural Road Network Challenges**

In an attempt to respond to the challenges faced by the road sector in Kenya. The Ministry of Roads (MoR, 2011) report, indicated the government introduced the Road Maintenance Levy Fund and then established the Kenya Roads Board (KRB), these initiatives were to fund and manage the road sector respectively. This was followed by the establishment of Kenya National Highways Authority (KeNHA), Kenya Rural Roads Authority (KeRRA) and Kenya Urban Roads Authority (KURA). These agencies were established in order to assist the KRB to manage the different classified roads in Kenya, with KeRRA responsible for rural roads. According to the Kenya Institute for Public Policy Research and Analysis report (KIPPRA, 2013) the roads sub-sector has been receiving increased budget resource allocation for construction of new roads, bridges, rehabilitation of roads and periodic maintenance as an intervention to improve the road network condition.

Kasuku and Macharia (2003) and supported by Odero and Njenga, (2005) indicated that the GoK in response to the challenges facing the road sector indicated the need to focus in reducing the unit costs of transportation through, infrastructure improvement by coordination of road development and maintenance to ensure that the road network is maintained rehabilitated/upgraded and expanded to rural areas. Furthermore, the use of labour based technology for employment creation and foreign exchange savings. For example the Rural Access Roads Programme (RARP), initiated in 1974 by the Government was in realisation of the need to place more emphasis on the developmental effects of road improvements. It was realised that low class roads can do a lot to accelerate growth and foster a more equitable distribution of income in the rural areas. The RARP therefore aimed to provide all-weather access between the farming areas and the market centres and at the same time create employment opportunities by employing labour intensive construction and maintenance techniques. By 1978, a total of 2,500 kilometres of rural access roads had been constructed. This strategy according to Odero and Njenga (2005) is the current Road 2000 strategy. Finally addressing the issue of financial viability and sustainability of fees, to increase funding and ensure adequate cost recovery for efficient and continued maintenance of the road network.

The ADBG, (2014) cited the different intervention the Government of Kenya (GoK) has instituted or proposed. For example in 1999 the GoK established through an Act of Parliament, the Kenya Roads Board (KRB), with a specific mandate to oversee the development and maintenance of the country's road network. The KRB's source of funding is fuel levy, which has grown fourfold since 2000 with annual collections reaching Ksh 22.5 billion (~USD 0.26 billion) in 2013. Furthermore, the GoK has also initiated other measures to improve the sustainability of road investments, notably the use of performance based contracting, whereby newly constructed or rehabilitated roads are placed under a long term maintenance scheme, and outsourced to a private contractor, with payments based on service delivery. The Kenyan construction industry has geared towards professionalism by instituting the National Construction Authority alongside other non-executive agencies and professional associations. A public private partnership (PPP) framework has also been adopted to lay ground for private sector participation in road development and maintenance. The banks report suggested that the GoK is considering a further increase in the fuel levy to generate additional revenue required to reduce the road maintenance backlog; and to create an enabling environment for the private sector participation under PPP arrangements. The KRB

and the National Treasury are planning to float an infrastructure bond to mobilize additional funding for road construction and maintenance.

The AFDB (2014) further indicated the GoK continues to address transport sector governance issues by taking various actions that include: the outsourcing of weighbridge management and operations to private sector; setting up of independent tender committees within each road authorities to oversee procurement processes and to ensure that the process are consistent with best international practices; training of staff from all road authorities on procurement, financial management, and in contract management, so as to address fiduciary issues; separation of the role of engineer and employer in civil works contracts to avoid conflict of interests; and integrating Technical and Value for Money audit services as components in road projects to ensure value for money to the road users and the Government.

### **Research Methodology**

Desk top research was used for this study. This involved search of secondary literature in relevant websites to be able to obtain data and information for this study. In addition, the documents listed in the reference section were reviewed. The review based on the aforementioned sources of information identified challenges of rural roads development, its effects/impact on productivity and growth, finally on methods used or proposed to improve the state of the rural road network in Kenya. This study therefore delved into the following research objectives:

- To identify the challenges faced by the Kenyan government on its rural road network development;
- To determine the effects/impacts of rural road network on productivity and growth; and
- To identify the interventions instituted by the Kenyan government to improve the development of the Kenyan rural roads network.

### **Findings and Discussions**

#### **Challenges Faced by Kenyan Government on Rural Roads Network Development**

Rural road sector challenges continue to undermine the sustainability of investments in the Kenyan transport sector. The key challenges established were: funding shortfalls which has resulted in maintenance backlog estimated at about 20-30%; inadequate institutional capacity for road maintenance, established fragmented agencies; poor planning of the urban road network which leads to congestion, lack of an efficient integrated road network locally and continued lack of road safety.

#### **The Effects/Impact of Rural Road Network**

When the rural road network is in good condition there is bound to have agglomeration of industries in these areas, thus creating rural development. However, poor state of the road network causes delays, breakages and high maintenance cost for transport machinery leading to high costs of doing business. Furthermore, agricultural produce are spoilt and cost of farming escalates.

#### **Kenyan Government Interventions on Rural Road Network Challenges**

In recognition of the various challenges and the negative effects of rural road network, the Kenyan government is considering the increase of fuel levy to generate additional revenue required to reduce the road maintenance backlog; and to create an enabling environment for the private sector participation under private public partnership (PPP) arrangements. Furthermore, KRB and the National Treasury are planning to float an infrastructure bond to mobilize additional funding for road construction and maintenance. These proposals are supported by the ADBG (2014). The KRB have also instituted the KeRRA to manage rural roads.

### **Conclusions**

Road transportation is an essential component for the transportation of raw materials, industrial inputs, finished products and movement of human capital in urban and rural areas in Kenya. In Kenya road network accounts for over 90% of the total movement of passengers and freight, hence a key infrastructure component for Kenya productivity and growth. It is the only means of access to majority of rural communities in Kenya. Further, the importance of road infrastructure has been highlighted in the Vision 2030 blueprint. This long-term development blueprint, aims to transform the country into a newly industrialized, middle-income country that provides a high quality of life to all Kenyan citizens by 2030. However, this discourse had identified different challenges that the government of Kenya has experienced in rural road developments, for example technically inexperienced

constituency roads committee members with little knowledge of procurement law and regulations, increased overhead costs, large conflict of interest due to bigger groups involvement, inadequate supervision capacity, the transition into the devolved government structures, and challenges of road classifications into national and county roads. These challenges have led to negative effect on the rural road network usage i.e. delays due to poor roads, loss of sending farming produce to the market. The challenges and the negative effects of rural road network, has led the Kenyan government to consider increasing fuel levy to generate additional revenue required to reduce the road maintenance backlog; and to create an enabling environment for the private sector participation under private public partnership (PPP) arrangements. Furthermore, KRB and the National Treasury are planning to float an infrastructure bond to mobilize additional funding for road construction and maintenance. The KRB have also instituted the KeRRA to manage rural roads.

### **Recommendations**

In Kenya, like in most of sub-Saharan Africa, roads are managed by government departments. The Department of Infrastructure and Transport which is the department in Kenya that is responsible for roads network management should play a major role in order to ensure vision 2030 is achieved. In order for this to be achieved this paper proposes the following recommendations to be incorporated with the current road policy;

- The KeRRA should ensure the implementation of the rural roads projects and should be honest with the implementation;
- Employ qualified personnel in KeRRA road authorities not political cronies;
- Ensure proper design of rural road networks with a future forecast of population growth; and
- Ensure the devolution system, of managing road networks within the counties are properly implemented.

### **References**

- African Development Bank Group, Country Strategy Paper 2014-2018., 2014, retrived from [http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/2014-2018\\_-\\_Kenya\\_Country\\_Strategy\\_Paper.pdf](http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/2014-2018_-_Kenya_Country_Strategy_Paper.pdf) on the 20/03/2015.
- Briceño-Garmendia, C.M., and M. Shkaratan, Africa Infrastructure Country Diagnostic report, Kenya's Infrastructure: A Continental Perspective, Africa's Infrastructure, A time for transformation, 2010., retrived from [http://siteresources.worldbank.org/INTAFRICA/Resources/Kenya-Country\\_Report\\_03.2011.pdf](http://siteresources.worldbank.org/INTAFRICA/Resources/Kenya-Country_Report_03.2011.pdf) on the 20/03/2015.
- de Sherbinin, A., Adamo, S., and Sydor, E., Roads: An essential element of development, 2013, retrived from <http://blogs.ei.columbia.edu/2013/05/16/roads-an-essential-element-of-development/> on the 21/08/2014.
- Ministry of State for Planning, First Medium Term Plan, Kenya Vision 2030: A globally competitive and prosperous Kenya, 2008-2012., 2008, Retrived from [http://www.sida.se/contentassets/855677b831b74ea0b226ce2db4eb93a3/kenya\\_medium\\_term\\_plan\\_2008-2012.pdf](http://www.sida.se/contentassets/855677b831b74ea0b226ce2db4eb93a3/kenya_medium_term_plan_2008-2012.pdf) on the 15/05/2015.
- Kasuku, S., and Macharia, L., Links between Transport and Poverty: A Review of Transport Policies in Kenya and the Links with Poverty Reduction, 2003.
- Kenya Institute for Public Policy Research and Analysis report, Creating an Enabling Environment for Stimulating Investment for Competitive and Sustainable Counties: Kenya Economic Report, 2013, retrived from <http://www.kippra.org/downloads/Kenya%20Economic%20Report%202013.pdf> on the 21/04/2015.
- Kenya Rural Roads Authority, Annual report 2012-2013, retrived from [http://www.kerra.go.ke/index.php?option=com\\_phocadownload&view=category&download=107:kerra-annual-report-2013-board-input&id=17:annual-reports-2013](http://www.kerra.go.ke/index.php?option=com_phocadownload&view=category&download=107:kerra-annual-report-2013-board-input&id=17:annual-reports-2013) on the 31/11/2014.
- Ministry of Industrialization., Kenya National Industrialization Policy Framework: Draft Five, Drafting Review Committee, 2010.
- Ministry of Roads., Cost Estimation Manual for Road Maintenance Works, Republic of Kenya, 2011.
- Ministry of Roads., Policy on aligning the roads sub-sector with the constitution, 2012, retrived from <http://www.kenha.co.ke/pdfs/Roads%20Policy.pdf> on the 02/03/2015.
- Ministry of Transport., Sessional Paper On: Integrated National Transport Policy, Republic of Kenya, 2010, retrived from <http://s3.marsgroupkenya.org/media/documents/2011/02/2f1e42767eec830e0f86a84ed117962b.pdf> on the 01/02/2015.
- Odero, K., and Njenga, P., IFRTD Pro-poor transport policies: Experiences and lessons from four East and Southern African countries, a synthesis report, 2005.