



A REVIEW OF THE CHALLENGES OF RURAL ROAD NETWORK DEVELOPMENT

JUSTUS N. AGUMBA

*Dept of Construction Management and Quantity Surveying, University of Johannesburg,
Johannesburg, South Africa*

It is a proven fact that development and maintenance of road infrastructure are prerequisites for rapid economic growth and poverty reduction. This paper aims to provide a review of challenges faced on rural road network development, the effects of poor rural road network, and the interventions proposed to improve the state of the rural road network. 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. It is recommended that governments could intervene by; 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 on rural road network improvement that will lead to the achievement of some of the Sustainable Development Goals 2030. The author views the SDGs as catalyst to correct the ills faced by the majority of the populace currently.

Keywords: Constraints, Developing, Effect, Infrastructure, Literature, Road.

1 INTRODUCTION

It is expected that rural road construction, matching those of the United States and China, will occur in Sub-Saharan Africa well before 2050. South Sudan, alone need some 20,000 to 30,000 km of new roads (Faiz 2012). Rural-road upgrading is required in all provinces in China; hence a panacea to improve access to markets and employment (Duncan 2007). The continued need in rural roads is predicated by many factors, the foremost being the food requirements of 9-billion global population by 2050 (Faiz 2012). According to the Africa Development Bank Group, (ADB 2014), road networks provide the necessary linkages for promoting national and international trade, economic growth, poverty reduction and wealth creation.

In Kenya the transport and telecommunication infrastructure subsector contributed the highest GDP at 9.3% in 2012 (Kenya Institute for Public Policy Research and Analysis 2013). Road transport accounts for over 90% of Kenya's total passenger and freight transportation (ADB 2014).

In spite of the stated importance of the road sector stated and the need for rapid expansion, Gbadamosi and Olorunfemi (2016) indicated that poor rural road conditions stifled the required farming achievement of the dwellers in the rural area. In Kenya, the paved rural roads are

insignificant in relation to the total length of rural roads network (Kenya Rural Roads Authority 2012-2013). In Sri Lanka 69,000 kilometres of roads used by rural people are ‘unclassified’; therefore have minimal maintenance budgets (Practical Action 2008). According to Africa Development Bank (AFDB 2010), rural Africa has only 34% of road access covered as compared to 90% in the rest of the world.

In-line with the aforementioned discussions, the purpose of this paper is to establish the challenges that governments are facing in developing rural road network, the effect of rural road network and the intervention strategies implemented or proposed. Hence, the following research questions were proposed:

- To identify the challenges faced by governments on its rural road network development;
- To determine the effects/impacts of rural road network; and
- To identify the interventions instituted by the governments to improve the development of rural road networks.

2 LITERATURE REVIEW

2.1 Challenges of Rural Road Network Development

According to Kasuku and Macharia (2003) opined that 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. Funding estimates were far higher than available and allocations from government resulting in inadequate maintenance and rehabilitation of roads. Development support monitor, (2012) inferred that the huge backlog of rural infrastructure in Africa which includes roads is stifled by, decades of under investment, lack of maintenance, and destruction and dilapidation due to conflict. The quality of infrastructure is generally poor and infrastructure service costs are relatively high. This lack of access to infrastructure services constrains the region’s agricultural growth and limits its market access.

Odero and Njenga (2005) suggested that there is no maintenance policy for Kenyan roads despite apportioning specific road classes to particular agencies. 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. These challenges are further exacerbated by limited finance to implement the road polices effectively.

Briceño-Garmendia and Shkaratan (2010) indicated road investments have been characterized by low rates of budget execution, 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 (2011) indicated: non implementation of the drafted Integrated National Transport Policy, 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.

The Kenya Rural Roads Authority report (2012-2013) inferred 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. Some of these factors are supported by Faiz (2012).

2.2 Effects/Impact of Road Network

The Ministry of State for Planning (2008) 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. This is supported by Faiz (2012). However, according to Terefe (2012) good rural roads are imperative for poverty reduction and consumption growth in rural areas, therefore, a positive impact/effect. Adedeji *et al.* (2014), indicated that poor condition of roads have negative effects on agricultural activities which is the major source of income of residents, thereby increasing the poverty rate. Abur *et al.* (2015) suggested that rural road infrastructure has positive influence on productivity and income of farmers which translate into creation of employment opportunities and better welfare for the rural populace.

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. However, Llanto (2012) indicated that rural roads provide connectivity with growing markets adjacent to rural areas; they also lessen input costs and transaction costs of rural producers and consumers. Kiprono and Matsumoto (2014), results indicate that land allocated to hybrid maize, inorganic fertilizer intensification, maize yield and milk market participation increase more in areas with better road access improvement.

2.3 Government of Response to Rural Road Network Challenges

The Ministry of Roads (MoR 2011) report, indicated that Road Maintenance Levy Fund and the establishment of Kenya Roads Board (KRB), are initiatives to fund and manage the road sector respectively. 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. Adedeji *et al.* (2014) suggests that in order for the existing roads to be kept in good condition, there is need to set up maintenance units at local government level who would be responsible for rural road maintenance. Abur *et al.* (2015) indicated that construction of more rural roads is very essential to farmer's productivity. This will facilitate access to inputs and product market by the rural farmers.

Kasuku *et al.* (2003) and Odero *et al.* (2005) indicated that reducing the unit cost 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. This is supported in the report of Faiz (2012).

The ADBG (2014) affirmed that 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 board is imperative for all governments. The initiation of the 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. It is imperative to professionalise the construction industry by instituting professional bodies/associations. A public private partnership (PPP) framework has

also been adopted to lay ground for private sector participation in road development and maintenance.

3 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. This non-experiential data was analyzed using thematic content analysis. The articles were read a number of times to obtain a sense of the content and the emerging themes were noted. The themes were further categorized into sub-themes. The review identified challenges of rural roads development, its effects/impact, finally on methods used or proposed to improve the state of the rural road network.

4 FINDINGS AND DISCUSSIONS

4.1 Challenges Faced by Governments on Rural Roads Network Development

Rural road sector challenges continue to undermine the sustainability of investments. 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 rural road network which leads to inaccessibility, lack of an efficient integrated road network locally. These challenges identified corroborates with the sentiments of Faiz (2012), Kasuku and Macharia (2003), Odero and Njenga (2005), and Briceño-Garmendia and Shkaratan (2010).

4.2 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. These findings are in line with the Ministry of State for Planning (2008). This is in line with Faiz report (2012). According to Terefe (2012) rural roads are imperative for poverty reduction and consumption growth in rural areas, therefore, a positive impact/effect.

4.3 Government Interventions on Rural Road Network Challenges

In recognition of the various challenges, the negative and positive effects of rural road network. It is suggested that governments consider having 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, floating an infrastructure bond to mobilize additional funding for road construction and maintenance is an important intervention. These proposals are supported by the ADBG (2014) to improve the rural roads.

5 CONCLUSION

In some countries road network accounts for over 90% of the total movement of passengers and freight. It is also the means of access to majority of rural communities. The importance of road infrastructure has been highlighted in the SDG 2030 blueprint. This blueprint, aims to transform the world into a newly industrialized, middle-income countries that provides a high quality of life

to all citizens by 2030. In relation to the SDG, 2030, this discourse had identified challenges that government experience in rural road developments, namely; 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 some governments to increase 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, governments floating an infrastructure bond to mobilize additional funding for road construction and maintenance. It is also vital that road boards and professional bodies are formed to ensure professionalism in designing and managing rural roads development globally.

References

- Abur, C. C., Ademoyewa, G. R., and Damkor, M., Impact of rural roads infrastructure on the income and productivity of households farmers in North Central Nigeria, *Research Journal of Agriculture and Environmental Management*, 4(10) 451-458, 2015.
- Adedeji, O. A., Olafiaji, E. M., Omole, F. K., Olanibi, J. A., and Lukman, Y., An assessment of the impact of road transport on rural development: A case study of Obokun local government area of Osun State, Nigeria, *British Journal of Environmental Sciences*, 2(1), 34-48, 2014.
- African Development Bank Group (ADB), 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 on the 20/03/2015.
- African Development Bank (AFDB), Infrastructure, 2010, retrieved from <http://www.afdb.org/en/topics-sectors/sectors/infrastructure/> on the 21/10/2016.
- 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 on the 20/03/2015.
- Development support monitor, Rural infrastructure in Africa, unlocking the African moment, paper series No. 1. 2012.
- Duncan, T., Findings from studies of poverty Impacts of road projects. A case study from the 2007, Sector Assistance Program Evaluation of Asian Development Bank, assistance for roads and railways in the People's Republic of China.
- Faiz, A., The Promise of Rural Roads, Review of the Role of Low-Volume Roads in Rural Connectivity, Poverty Reduction, Crisis Management, and Livability, transport research circular, Number E-C167, 2012.
- Gbadamosi, K. T. and Olorunfemi, S. O., Rural road infrastructural challenges: An impediment to health care service delivery in Kabba-Bunu local government area of Kogi State, Nigeria, *Academic Journal of Interdisciplinary Studies*, 5(2), 35-44, 2016.
- 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, Anual 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 on the 31/11/2014.

- Kiprono, P., and Matsumoto, T., Roads and farming: The effect of infrastructure improvement on agricultural input use, farm productivity and market participation in Kenya, Proceeding of CSAE Conference: Economic Development in Africa, The University of Oxford, 2014.
- Llanto, M. G., The impact of infrastructure on agricultural productivity, Philippine Institute for Development Studies, discussion paper, 2012.
- Ministry of Roads (MoR), Cost Estimation Manual for Road Maintenance Works, Republic of Kenya, 2011.
- 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 on the 15/05/2015.
- Odero, K., and Njenga, P., IFRTD Pro-poor transport policies: Experiences and lessons from four East and Southern African countries, a synthesis report, 2005.
- Practical Action, Village Roads in Sri Lanka, 2008, retrieved from http://practicalaction.org/transport/road_building on the 20/10/ 2016.
- Terefe, A. L., Impact of road on rural poverty: Evidence from fifteen rural villages in Ethiopia, (2012), unpublished Masters of Arts in Development Studies, Graduate School of Development Studies, The Hague, Netherlands.