

Economic Returns of High Investment in Asphalt Road Construction Compared to Low-cost Access Options in an Agrarian Community

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1. Background

Ethiopia is a country with a population of 85.2¹ million, eighty-three percent of which live in the rural areas². The annual population growth rate is estimated to be 3.2 percent. The agriculture sector accounts for more than 85 percent of the population and earns 60 percent of foreign exchange. In terms of road infrastructure, Ethiopia has the lowest length of road per capita in Africa. According to the World Bank (2005), more than 50 percent of the population is on average 10 km from a dry weather road and, 18 km from public transport services. A review of growth and poverty in Ethiopia in the 1990s indicates that improved road access has a significant impact on economic growth and poverty reduction in rural areas. To this effect, the Agriculture Development Led Industrialization (ADLI) strategy has been enacted.

To address the issue of restricted road network coverage and low standards, the Government formulated the Road Sector Development Programme (RSDP) in 1997. RSDP is now in the third phase of implementation focusing on (a) rehabilitation of main roads; (b) upgrading of main roads; (c) construction of new roads; and (d) effecting the necessary maintenance on the network. The programme has also considered major policy and institutional reforms. As a result, the length of asphalt roads in good condition has increased from 17 percent in 1997 to 70 percent in 2009³. The proportion of total road network in good condition also grew from 22 percent in 1997 to 54 percent in 2009. In spite of relative changes that have been observed since the launch of RSDP, much needs to be done to expand other low access options to facilitate the mobility of the rural population. As a result, there are controversies regarding the government's prioritization of road infrastructure investment for the majority of the population (rural) vis-à-vis construction of asphalt roads, which is limited mainly on highways.

2. Scope

¹ UN (2008)

² *ibid*

³ Ethiopian Roads Authority

This paper briefly reviews some of the points of contention between the government on the one hand and interest groups, political parties and professional public policy analysts on the other. In the course of presenting points of controversies, various published and unpublished sources of the government such as the Ethiopian Roads Authority (ERA), workshop proceedings and public opinions gathered during the nationwide election of May 2010 have been used.

3. Literature

It is widely recognised that there are circumstances under which socio-economic benefits are difficult to assess and/or their quantification is not possible, and hence there is a need for better specification and understanding of social benefits for low volume roads as well as methods for measuring them both quantitatively and qualitatively. Economic appraisal models base their prioritisation for investment on economic criteria, yet the governments of developing countries and donors are increasingly asking for guidance to incorporate social benefits in transport appraisal.

With a common framework for resource allocation and prioritisation of road maintenance and rehabilitation programmes for low volume roads, national road agencies, governments and donors throughout the developing world would be better able to allocate funds to rural communities on the basis of socio-economic measures that go beyond traffic density considerations.

It is assumed that taking account of the social benefits of rural roads can provide justification for investments in remote rural areas which otherwise would not be possible within the currently practiced investment appraisal framework that is based on cost savings of transport operations alone.

4. Road Investment Decision-making in Ethiopia

Responsibility for the road network is divided principally between (a) the Ethiopian Roads Authority (ERA), with an executive board oversight for federal roads and road sector policy implementation and coordination under the overall guidance of the Ministry of Infrastructure, and (b) Regional Roads Authorities for the regional rural roads within their boundaries.

The overall coordination of sub-sector plans of the transport sector is coordinated by the Ministry of Urban Works and Development (MUWD) to which all agencies in the transport sector, including those of road infrastructure, report. The Ethiopian Roads Authority (ERA) is responsible for overall planning, construction, maintenance and management of the federal road network, while giving technical assistance to Regional Road Authorities (RRAs) of the regional state governments. The administration and management of regional rural roads is the responsibility of the respective regional governments, while the municipalities are responsible for urban roads. The Ministry of Finance and Economic Development (MoFED) plays an important role coordinating transport strategies, providing guidelines for sectoral development plans and setting overall levels of investment for each of the sub-sector plans.

5. Economic returns from spending more on asphalt roads construction vis-à-vis other low-cost options

Asphalt roads versus other low-cost options for the agrarian community

Over the past decades, there has been a growing belief in rural transport circles that rural roads have a vital role to play in poverty alleviation. Yet this role is short circuited by prevailing procedures for prioritising road investments, which ignore the benefits of other low-cost access options or rural roads. The basic argument has a number of widely accepted premises that nonetheless require further reflection in relation to rural road investment.

Issue 1: Ethiopia has an agriculture-based society with the majority of the population living in rural areas. Expenditures on major trunk roads often dwarf that of rural roads or low access options. The poorest of the poor are found in rural areas. Hence, road infrastructure investments should address the majority of the population living in rural areas.

Issue 2: The poor are concentrated in the rural areas and development efforts should therefore be focused there. Roads connect the rural poor to economic and social services that are essential to the improvements of their standard of living. Rural per capita income is lowest in the country's remote areas where roads are lacking.

Central Argument (related to issues 1 and 2): Poverty is highest in rural areas whereas investments mainly focus on the urban infrastructures and/or on major highways connecting major towns. Providing more roads in rural areas with the construction of highways addresses the needs of the poor. Roads provide easier access to basic social services like health and education and enable the rural poor to have greater mobility to pursue a wider range of economic opportunities. Incorporating other low-cost options of rural poverty alleviation into road investment helps to eliminate the current bias towards investment in already economically and infrastructurally favoured areas. Therefore, poverty alleviation needs investment in the rural feeder road. Such roads should gain in significance to other road investments, particularly that of expensive trunk road projects.

Government emphasizes that urban growth rates have escalated due to high rural-urban migration and even an agrarian country like Ethiopia is projected to be primarily urban in a few decades. Urban poverty is widely prevalent, especially in the unplanned squatter settlements of cities like Addis Ababa. The government should address the spatially differentiated rural and urban areas as well. Because of resource constraints, infrastructure development prioritization primarily addresses major strategic towns and cities.

Issue 3: Ethiopia has a registered vehicle fleet of about 134,000. This amounts to vehicle ownership of a little over two vehicles per 1000 people. Most of the vehicles imported into the country are used vehicles. Due to old age and long service life of the vehicles, there is a high incidence of breakdowns, relatively low operational availability and high vehicle operation costs. The participation of local consulting and contracting industry is still marginal. During the RSDP of 1997-2009, the share of foreign contractors was 58 percent of the cost of projects awarded. Quality of asphalt roads is still questionable. Every year the construction costs of asphalt roads is increasing, taking more than 27 percent of the overall budget of the country.

Central Argument (related to issue 3): Although government encourages market competition and provide tax privileges for mass transport vehicles, it has resulted only in a slight increase in the fleet. It is deployed primarily in urban areas and hardly affects rural transport. Many question who can possibly make use of the asphalt roads. Investment on asphalt roads is significant with little or no transport improvements. Expenditures on major trunk roads often dwarf that of the rural roads and therefore efforts need to facilitate rural road budgetary allocations. Research and investment into intermediate modes of transport, rather than just road infrastructure, should not be overlooked. The quality of road construction is questionable in spite of the substantial cost allocated for consultants who are supposed to monitor quality across the project cycle. Road safety education needs to be addressed both for urban and rural communities.

Conclusion

In Ethiopia, rural road network expansion is critical to the geographical extension of the country's rural service infrastructure. Ethiopia is a vast country with difficult terrain that makes the costs of expanding the rural road network considerably high. To make such investment more 'benefit absorptive' it would be advisable for the government to try to deepen rural households' modal choice. It is very important for the government to take measures that support rather than undermine rural households' animal assets, particularly donkeys, which have served the rural areas so well. In addition, the popularisation of other low-cost access options and intermediate means of transport services would help optimise rural households' use of rural roads. The extensive food-for-work programmes in Ethiopia directed at road-building could incorporate savings schemes and training programmes to help people acquire and use more wheeled intermediate transport. As the extreme 'remoteness' of Ethiopia's countryside is alleviated by rural road expansion, the mobility enhancement of roads will gradually supersede accessibility enhancement.