

Social Impact of Improved Rural Roads: A Case Study From Tanzania

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Abstract: This paper evaluates the social impact of the improved rural roads. Data is taken from a social impact assessment study carried out in the year 2001 along the improved (upgraded from earth to engineered gravel) Msata-Bagamoyo road in Coast Region, Tanzania. Data collection techniques employed were rapid rural appraisal of social services; in-depth interviews with a sample of households and secondary data. Results of the assessment reveal that the improvement of the road increased agricultural production, commercialisation of agriculture and improved the timely availability of agricultural inputs to farmers. It has led to greater accessibility of markets, reduced transportation costs and enhanced food security. Other benefits are the growth in retail businesses and entrepreneurial spirit in the area, increased and efficient mobility, improved access to medical and health services and road safety. The challenges brought about by the improvement are increased rate of social stratification among individuals and between villages. Other challenges are increases in sexually transmitted diseases including HIV infections. The major conclusion drawn is that peasant farmers are rational economic beings and that rural roads play a significant role in the transformation of the agricultural sector in Tanzania.

INTRODUCTION

Transport occupies a central position in the fight against rural poverty in most developing countries like Tanzania. In such countries efficient transport networks create an enabling environment for the transformation of agriculture from subsistence (dominated by low levels of technology) to a commercialised level. Rural roads are a critical infrastructure component in agricultural production as they link farming areas to trunk roads and railways. Watungulu (1991) reported a total road network of 81,895 kilometres in Tanzania. Out of those 10,456 kilometres are trunk roads, 12,954 kilometres are regional roads, 34,340 kilometres are district roads and 24,140 kilometres are non-classified roads. Studies ((Hoefmeir, 1973; Kilangwa, 1996; Watungulu, 1991) have noted in general an under funding of rural roads in Tanzania. Only about four percent (3,000 kilometres) are bitumen. According to Watungulu (1991) over sixty percent of all Tanzanian paved road networks was classified as poor. However since 1990 a major rehabilitation program of rural roads have been going on as part and parcel of an economic recovery program that started in the late 1980s.

This paper outlines the social impact that has been brought about by the improvement of one rural road in Tanzania. Although the social impacts are more qualitative than quantitative, their consequences on the livelihoods of the local people are no less significant. These include increased access to various social services such as health and educational facilities, increased mobility and developing the spirit of entrepreneurship as reflected in the increase of street peddlers popularly known as the "machingas" (literally translated as the marching guys). Others are; induced agricultural production, reduction in transport costs, improved access to marketing centres, diffusion of innovations and timesaving. Among the negative social impacts of road improvements are increased social differentiation and spread of the contagious diseases.

Data for the paper is from the social impact assessment study carried out along the improved Msata-Bagamoyo road in Coast Region, Tanzania. This road was upgraded from an earth to an engineered gravel road. The study was undertaken in the year 2001. Before the improvement works began in early 1999, a

baseline study was carried out in 1998. A combination of data collection techniques were employed in getting the data for social impact assessment. Techniques used were face-to-face interviews, secondary data (including the baseline study report), and rapid rural appraisal. Rapid Rural Appraisal involved interviews with key informants (mainly village leaders and government officials at the local levels) in all the six villages of Makurunge, Kidomole, Fukayosi, Kiwangwa, Masuguru and Msata along the improved road. In-depth interviews were conducted with a sample of twenty households in two (Fukayosi and Kiwangwa) of the six villages.

The baseline study (LOMO, 1998) indicated that the economy of the study area is dependent on cash and subsistence agriculture. Farming is on a small-scale and non-mechanised. The handhoe is the only farm equipment used. The major cash crops grown include cashewnuts, and a variety of tropical fruits such as pineapples, oranges and bananas. Major food crops, which are also grown as cash crops, are maize and rice.

Commerce, which includes trading in manufactured goods and agricultural produce, is an important part of the economy of the road impact area. Agricultural produce is marketed within and beyond it. Private traders dominate marketing of crops except for cashewnuts that is bought to primary societies.

FINDINGS

The social impact of the improved road was observed at local and in all areas along the improved road.

Agricultural Production

Overall, the improvement of Bagamoyo-Msata road had a positive impact on agricultural production in the area. Thirty five percent of respondents interviewed indicated that they increased farm sizes and areas under crop cultivation after the road improvement. In

addition, 65% of the respondents reported that the road's improvement led to an increase in the amount of agricultural produce sold. This is one indicator of an increase in the rate of commercialisation of agriculture. The largest increase of crops sold was in pineapples and other fruits. In both Kiwangwa and Fukayosi respondents mentioned that produce were no longer rotting in the farms as was the case during the pre-improvement period.

Furthermore, the improved road has led to the timely availability of agricultural inputs such as fertilisers and seeds. This is especially true of farmers at Fukayosi. Generally, it was observed that prior to the road improvement it was only the progressive farmers who had access to these inputs because they could afford to go to Bagamoyo and Dar es Salaam to purchase inputs. Now these inputs are available in the village.

It is important to note however, that the agricultural benefits accruing from road improvement are not equally distributed. Progressive farmers are benefiting more than the poor farmers. This has further widened the income and knowledge gap between classes of farmers. For example, rich farmers can now purchase agricultural inputs such as fertilisers at a lower rate than before the road improvement, thus increasing productivity and profit margins. On the other hand, because of their inability to purchase agricultural inputs at whatever cost, poor farmers cannot take advantage of this opportunity brought about by the improvement of the road. The net impact is increased social differentiation among farmers.

Agricultural Markets

The improvement of Bagamoyo-Msata road has made markets more accessible, and has led to an increase in the number of traders and vehicles. This has stabilized the cost of transportation, increased competition and consequently increased the profit margin for farmers and traders. For example, farmers from Msata can efficiently sell

their maize at Bagamoyo markets while buying fish from Bagamoyo to sell in the local markets. Farmers from Masuguru sell most of their produce at the Msata market. At Kiwangwa the local market expanded since the road improvement and farmers sell their pineapples to other markets with minimal difficulties.

All respondents from Fukayosi and Kiwangwa reported an increase in the amount of marketed crops and in the better prices being offered for most crops. The improvement of the road meant that more traders are now coming to the villages to buy crops on farm site. Thus access to outside markets such as Dar es Salaam and Bagamoyo has improved with upgrading of the road. Since its improvement more vehicles serve the area. This implies that it is now cheaper to hire vehicles if farmers want to take crops to markets in Dar es Salaam or Bagamoyo. It was reported by one of the farmers that prior to the road improvement they were forced to go to Dar es Salaam to hire vehicles to take their agricultural produce to markets outside the study area. In addition, traders used to buy crops from farmers on "credit." This meant farmers were paid after crops have been sold. The improvement of the road has increased competition among vehicle owners looking for produce to take to Bagamoyo, Dar es Salaam and Arusha markets etc. Furthermore, with the improvement of the road, transportation costs have gone down and stabilised.

The efficiency of marketing agricultural produce brought about by the improvement of Bagamoyo-Msata road has positively affected all the segments of the social classes in the zone of influence. However, the distribution of the benefits is not equal. Progressive farmers, traders and vehicle owners have benefited more than others.

Food Security

The improvement of the road has also led to greater food security and quality in the area. Seventy five percent of the respondents noted that food security and quality in the households

have improved because of road's improvement. Reasons advanced for this situation includes the increased availability of food at village levels, lower food item prices, lower transportation cost and fares. Individuals can now afford to travel to towns like Bagamoyo or Chalinze to buy food items if necessary.

Non-Farm Income Generating Activities

The retail business in the area has grown in size, diversity and quality since the improvement of the road. The baseline study reported a total of twenty retail shops in the six villages and that number had grown to twenty-seven by the time of impact assessment. In most of the villages retail businesses expanded in size. The number of kiosks selling clothes, food items etc also increased. The number of street vendors selling a variety of products is much higher now than when the baseline study was undertaken.

Village officials in all the six villages indicated that the availability of goods in the retail shops has increased dramatically since the improvement of the road. Furthermore, prices of goods in the retail shops have stabilised. This is unlike in the pre-improvement era when due to supplies not being guaranteed for lack of transport and high transportation charges, prices fluctuated and were always on the high side. For example at Kidomole, the village chairman observed that prior to road improvement the price of one kilogram of maize meal was 300 Tanzanian shillings. That price has gone down to 180 shillings. Furthermore, the improved mobility has also increased the chances of obtaining non-farm employment in towns such as Bagamoyo and even in Dar es Salaam.

Despite these positive impacts the improvement of the road also increased differentiation between and within villages along the road. For example, while villages such as Kiwangwa and Msata reaped substantial benefits from the project, others like Masuguru and Makurunge benefited marginally. At Kiwangwa, because of the road improvement

farmers sold their farm produce (mainly pineapples) at higher prices. This has led to improved livelihoods for most farmers in this village, increasing their purchasing power and positively influencing retail business in the village. In the case of Msata villagers can now sell maize efficiently to other villages along the road and attract villagers from Masuguru to do their shopping in Msata.

The young men who are involved in street vending businesses also indicated that with the improvement of the road it has been possible to earn more money as the transport costs have stabilised and several trips can be made to Chalinze or Bagamoyo per day. One does not have to stay overnight in these places, as was the case during the baseline study. This has reduced costs and increased profits. Mat-making women are another category of business people who have benefited from the improvement of the road. They now take their mats to Bagamoyo, a much larger market and make a reasonable profit.

Social Interaction

The impact of the improved Bagamoyo-Msata road on social interaction has on the whole been positive. Visits to Dar es Salaam, Bagamoyo, Chalinze and to villages along the road have increased. 90% of all respondents reported that visits to the city of Dar es salaam, Bagamoyo and Chalinze have increased dramatically with the improvement of the road. This is especially true of business and social visits and contacts. People living along the road have many close relatives living in Dar es Salaam and Bagamoyo. But whatever the nature (social or business-related) of the visits, the impact is an increased mobility and contact between people living along the road and beyond. The reason being that the travel time has been cut drastically from what it used to be prior to road improvement and also that the fares have gone down. Civil servants in the area who have to go to Bagamoyo to collect their salaries can return on the same day. The

increased visits to towns has also led to increased levels of newspaper readership than during the baseline study. The widening of contact opportunities has increased the flow of businesses, health and educational information in the area.

Although the improvement of this road has had a positive impact on a wide cross section of the social actors there is a possibility that this could lead to greater knowledge gaps among those who are extensively mobile and those with limited mobility because of their socio-economic statuses.

Access to Social Services

The impact of the road's improvement on access to social services varied. For example, while the improved Bagamoyo-Msata has had a positive impact on health care delivery in the area its impact on educational services was found to be negligible. Two new pharmacies have been established at Kiwangwa since the road improvement bringing to a total of six pharmacies (all privately owned) in the study area. One privately owned dispensary has been opened at Kiwangwa. Sixty percent of respondents from Fukayosi and Kiwangwa and all local leaders claimed that the improvement of the road had improved the availability of medicines at the government dispensaries in their villages. At least government dispensaries are assured of getting their monthly medical supplies in time. Prior to the road's improvement it was common for government dispensaries not to get their supplies for up to two months. However, all respondents agreed that the medical supplies were inadequate even after the improvement of this road. A number of respondents also raised the concern that not every one can afford private medical care and in fact most of them cannot afford any at all thus limiting access to this important service.

Most respondents reported that with the improved road, the fares are reasonable therefore individuals can go to other places like Bagamoyo where there is a government district hospital or

to Tumbi where the government regional hospital is located to get medical service.

The impact of the improvement of this road on the educational sector is limited. However, one positive impact as previously observed is that teachers can now visit the district offices in Bagamoyo with ease to get such services as banks or meet with their respective heads of departments without staying overnight. This is a slight motivating factor that could even entice some teachers to work in the area. The impact on other social services such as leisure services, sports are not significant. Indeed, in villages such as Kiwangwa, a number of respondents have argued that the quality of social services has lowered since the improvement of the road because of the influx of immigrants to the village. More people are sharing the already overstretched services.

The pattern of utilisation of services has changed. In the three government-owned dispensaries the number of patients has increased, partly because patients from neighbouring villages can now get services from the three dispensaries because of improved communication and fairly stable fares. More vehicles, including buses, move with greater frequency along this road. This is in sharp contrast to the pre-improvement era when people in the villages without dispensaries had to walk several kilometres to the nearest dispensary in some cases. Medical staff also reported that they are able to make more referrals to the district hospital at Bagamoyo after the improvement of the road.

The improvement of this road has positively affected all the social groups in the area in different ways but again the benefits are not equally distributed. For example, poor people, unlike the well to do may not afford private health and medical facilities even if these are easily available. Thus the government still has the responsibility of finding ways of helping the poor to get access to such social services.

Road Safety

Road safety has increased with the improvement of the road. The state of the road prior to the improvement in 1998 was so bad that it was risky to travel on this road by vehicles especially during the rain season. It was common (before the improvement) to spend hours getting stuck in the mud during the rain season with the danger of being attacked by wild animals.

Risky Behaviour

Although documented records were not available, most of the key informants, including medical staff and village officials admit that there is some indirect negative health consequences of the improved road. At Kiwangwa, which is the fastest growing trading centre in the area, it was reported that during the harvesting season, many traders and drivers from Dar es Salaam, Bagamoyo, Arusha and Moshi visit the village. Also a number of prostitutes from neighbouring villages frequent Kiwangwa during the same season. Potentially, therefore, there is a greater likelihood that the spread of sexually transmitted diseases has increased with the improvement of the Bagamoyo-Msata road. In addition, more residents from the study area now frequently visit Dar es Salaam, Bagamoyo and Chalinze because fares are low and time spent in these places is minimal, as transport has become more efficient. The increased visits also increase the possibility of contracting sexually transmitted and other contagious diseases. Additionally, some respondents fear that in future social problems associated with the use of illegal drugs like heroin could emerge. Drug trafficking in the area is on the increase with improved access to Bagamoyo and Dar es Salaam.

CONCLUSIONS

The social impact assessments of the improved road revealed that farmers in the area are not lazy as often assumed, but are rational economic

beings. They are motivated to work hard and invest when there are economic returns and gains to be made. The expansion of pineapple cultivation at Kiwangwa and maize at Msata after the improvement of the road supports this assumption.

The upgrading of this road from earth to engineered gravel has led to considerable positive social benefits. Projects of this nature play a central role in poverty reduction efforts in the rural areas. Such projects act as catalysts for rural change.

The assessment has also shown that improved roads have the potential to increase social stratification. The distribution of benefits is not equitable, with wealthy farmers, owners of vehicles, drivers and households located along the road benefiting more. It is common to see villagers walk long distances instead of using buses because they can't afford the fares. Additionally, an increased differentiation in access to social services such as medical and health was found as a result of improvement of the road.

Recommendations

Mechanisms need to be put in place to ensure that improved roads such as the Msata-Bagamoyo are properly maintained. Policy implications are that when resources are limited it makes sense to invest in areas where potential positive social and economic returns are greater such as in improving rural roads. Sex education and availability of facilities such as condoms are critical because mobility in- and-out of the area has increased several folds since the upgrading of the road.

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