AN ASSESSMENT OF THE CONTRIBUTION OF ROAD TRANSPORT SYSTEMS TO SMALLHOLDER AGRICULTURAL PRODUCTION IN BUBI DISTRICT

Wisdom Moyo Faculty of Applied Social Sciences, Department of development Studies, Zimbabwe Open University

Aaron Machiri Faculty of Applied Social Sciences, Department of development Studies, Zimbabwe Open University

Abstract

Road transport plays an important role in agricultural development. It is the major means of transporting agricultural produce from the farms to the markets as well as to various urban communities. The study examines the impact of road transport on agricultural development in Bubi district. The research design used in the study was descriptive and survey design. The findings revealed that the bad condition of the road affects cost of transportation of agricultural produce which in turn affect the rural farmers' income. The authority responsible for the maintenance of the roads is highly incapacitated due to lack of funding and human resources. The study recommends that an improvement on road transport system will lead to increased production by farmers. It is also recommended that government include in its fiscal budget the funds for rehabilitation of the roads in the district so that it can improve the living condition of the people in the community hence brings development to the district. Bubi Rural District Council (RDC) should encourage community participation in the construction and rehabilitation of the roads in the district.

Key words: Agriculture, development, road, transport, farm, market,

1.Introduction

Agriculture in general and small-scale agriculture in particular is the basis upon which rural communities survive. The overall development of agriculture depends on various supportive

factors both at the policy and implementation levels. This study underlines the essentiality of the role and contribution of the road transport systems in supporting efficient rural agricultural activities, especially the productivity of small-scale producers within the Bubi District in Zimbabwe. The development of rural communities in Zimbabwe is hinged upon the adoption and implementation of a good rural road transport policy.

The land redistribution program sponsored by the government in 2000 calls for efficient road transport systems that allow small-scale rural farmers access to the urban centres where they buy inputs and also sell their produce. There is need for small-scale farmers to have exposure to good roads in order for them to carry their crops and livestock to the market directly (eliminating the middle-buyer) and hence make more profits.

Agriculture is the mainstay of the Zimbabwean economy in general and the rural communities in particular. The agriculture sector in Zimbabwe employs most of the total rural labour force and provides a livelihood to all the people who are resident in rural areas. The rural folk depend on agricultural production for their survival, healthcare and to access educational facilities. Further, the majority of food production in Zimbabwe is produced by small-scale rural farmers. The small-scale farmers are involved in crop production and livestock rearing. They sell their crops and livestock to the urban consumers. The case under study (Bubi District) relies on cattle rearing and crop cultivation. The cattle are mostly sold to the urban market or to mobile buyers who move around the communities. This fact justifies the need for good road transport systems.

Inefficient road transport systems affect the livelihoods of the small-scale farmers. Poor road communication networks may impact the profitability of small-scale agricultural production. The lack of such may impede on the marketing of agricultural commodities, prevents farmers from selling their produce at reasonable prices, and leads to spoilage. Limited accessibility cuts small-scale farmers off from sources of inputs, equipment and new technology, and this keeps yields low. According to the Zimbabwe Census National Report (2012), more than 56% of the people in Zimbabwe live in the rural areas (these include the resettlement areas). The census report notes that 70% of rural inhabitants rely on small-scale agriculture for their sustenance.

It is within this background and context that this study situates road transport systems as an intrinsic component of the overall development and sustainability of rural small-scale agricultural activities. The need for efficient logistical support systems (road transport systems in particular), therefore, is great. In order for the communities to effectively participate in the economic system, they need to have efficient transport networks that link them with the greater community in terms of markets and also sources of inputs.

1.1 Statement of the problem

There is need for small-scale farmers to have exposure to good roads in order for them to carry their crops and livestock to the market directly (eliminating the middle-buyer) and hence make more profits. Poor road communication networks may impact the profitability of small-scale agricultural production. The lack of such may slow down the marketing of agricultural commodities, prevents farmers from selling their produce at reasonable prices, and leads to spoilage. Limited accessibility cuts small-scale farmers off from sources of inputs, equipment and new technology, and this keeps yields low.

1.2 Research Objectives

- To investigate the transportation constraints faced by small-scale farmers in Bubi District.
- To examine the benefits brought about by efficient road transport systems to small-scale farmers in the Bubi District.

- To assess the role of road transport systems in support and development of small-scale rural agriculture in Bubi District.

2. Literature Review

Oettle, Fakir, Wentel, Giddings, and Whiteside (1998), define small-holder farming as involving households producing agricultural yields on relatively small plots of land. It also involves direct operation by the farmer and makes use of family labour (manual and management), although they are sometimes supplemented by temporary employees. In addition, smallholder farming makes more use of labour (labour intensive) rather than capital, and results in production of small amounts when compared to large farms (Kirsten and van Zyl, 1998). Under smallholder farming, the family is dependent on the farm for a significant portion of their income. Smallholder farms are sometimes known as peasant farms, small-scale farms or family farms.

2.1 The Importance of transportation systems to small-holder farmers

Williams, Ayanwale, Idowu and Kassali (2003) argue that the marketing and transportation of farm produce efficiently, and timely provides maximum utility to the consumer and at the same time increasing the profit margins going to the farmer. Marketing is often defined as the creation of utilities, and a market is often defined in terms of geographic boundaries, but marketing depends upon transportation to deliver the desired goods in the first place.

Agricultural commodities such as wheat and cotton are produced in places that are far away from the consuming urban populations and the transport systems come in to provide the linkages that are needed in order to facilitate trade between the productive communities and the urban market (Williams et al 2003). Transportation of these commodities to the location where they are desired (and where customers will pay for them) generates place utility.

Williams et al (2003) postulate that good transport systems influence demand by increasing access to the market. They argue that if the market price determines the value of the product, the market price itself is also determined by the connection or relationship between demand and supply curves in the market place. Tracy-White (2005) lists benefits attached to improved transport as; that agricultural surplus reach collection centres and markets timely; a reduction of

time burden for family members and a reduction in transportation damages to perishable crops. Additionally, an improved transport reduces operating costs to vehicle users and provides more direct and cost effective access to public utilities. A more efficient transportation system (Williams et al, 2003) will lower consumer prices and make it increasingly attractive for consumers to purchase larger quantities. Further, when transportation availability and capacity provide access to new trade opportunities, many of these demand shifters can be affected. Access to new markets will increase the population of buyers available to purchase the produce. When transportation makes available higher quality products or products with new tastes and appeals, demand is increase

3.Research Methodology

The study adopted the mixed methods research approach. This method combines both the qualitative and quantitative approaches. However, it should be stated at this stage that the qualitative method was the most used due to the overall nature of the research that has a social setting and orientation. The research uses the case study of the Drummond land area under Bubi administrative district.

This study used the single case study approach in examining the role of road-transport systems to small-holder farmers in the Drummoland area. The single case study approach was utilised in this instance in order to get a detailed view of the contribution that road-transport systems have in the enhancement or otherwise of rural small-holder agricultural activities.

The researcher used open-ended interviews to solicit for responses from the research respondents.

The interview was thus utilised in this inquiry to obtain new information, from the small-holders farmers, rural development authorities and people at the markets where agricultural goods from Bubi district are sold.

The questions used during the interview were semi-structured. Interviewees were asked to identify areas of concern with regards to the transport systems in their community. small-holder farmers were interviewed to get information on the role of road-transport systems in their activities, officials from the District Development Fund responsible for Bubi district were

interviewed to get their views on the state of roads in the area, the transporters were also interviewed for two specific reasons: a) to get information on their pricing models when transporting goods in tarmac roads , and b) to get their view on determinants of transport availability and costs in rural areas especially, Bubi district. Questionnaires with open ended questions were included to solicit the opinion of respondents where it was felt that the range of possible responses could not be ascertained.

A total of 40 small-holders farmers participated in the research. All the research participants were chosen using the purposive judgemental sampling criterion. One had to be a small-holder farmer from the Drummoland area, a transporter operating in the Bubi district in general and the Drummoland area in particular; an official from the District Development Fund responsible for Bubi and also an official at the markets were products (both crops and livestock) from the Drummoland area are sold. The farmers that participated included 28 males, and 12 females. All the farmers who participated in the study produced both crops and livestock and sold their surplus to the nearby markets especially the Bulawayo Central Business District. A total of ten (10) transporters were interviewed. These included both the transport owners and the drivers. Managers at the markets were also interviewed.

4. RESULTS

4.1Transport systems and access to the market

The farmers noted that the road transport network has a vital role to play in enhancing and enlisting their agricultural activities. When asked what they used the transport for: the farmers noted that they need transport in order to carry their inputs to the farming areas and also to carry their produce to the markets. They noted Bulawayo as their main market for both the crop produce and livestock, hence the need for a road transport network that properly linked with the country's second largest city. The farmers also noted that they got all their farming inputs, vaccines and implements from Bulawayo. they also highlighted that it is better to sell their produce to Bulawayo due to better market prices as compared to those offered by mobile buyers who come to their communities. This fact strengthens the case of this study that: efficient road transport systems are central to the development and sustenance of small-holder agriculture in Bubi district.

Market transport is very important because it links the farmers to the consumers. The availability of reliable and dependable road-transport systems influences the timely delivery of produce to the markets and of inputs to the farming communities. This is unlike households who depend on unreliable transport systems, where transport can be unreliable, leading to delivery delays and sometimes failure to deliver products to the market. In addition, the type of transport that is used by the farmers to the market determines how fast and in what condition the produce reaches the market.

The study showed that all farmers require transport to carry their produce to market places. All the farmers that participated in the study do not own personal transport, a scenario that makes them reliant upon hired transport or the transport provided by the buyers. The farmers require trucks (open trucks) to transport their products to the market. These smaller trucks are useful in carrying small-grain crops in small quantities. However, more often than not, all the farmers require heavy duty trucks to carry their produce to the market. For those carrying their grain to the Grain Marketing Board (GMB) depots, they need to hire these trucks since the GMB does not offer transport and in most cases farmers supply one tonne and above, automatically quantities that require the use of heavy duty trucks.

All the respondents noted that they have problems with regards to transportation. All of the respondents lack their own transport. They all complained that transport was not reliable and was always expensive, and they end up getting little if any profits after selling their produce.
The above analysis presents a strong case for market transport problems among smallholder farmers in the Drummoland area. When asked the main problems that the farmers face in transporting their produce, it was noted that the most common problem was lack of own transport among the farmers. Other farmers cited small transport size, high transport costs and unreliable form of transport as the main problems they face in transporting their produce to the market.

The transportation system required by farmers who need to sell their cattle to the Bulawayo markets is more vital. The markets in the city offer much better prices than those offered by

cattle buyers who come to their communities. They offer almost half the price offered at city markets such as the Cattle Company Sales (CC Sales) and Agri-Auctions. This factor makes the need for transport by cattle farmers more urgent and necessary. However, the transport costs are high especially if one is selling a small number of cattle. The average cost per trip is estimated at US$400, which is equivalent to the price of one average beast.

4.2Market access and agricultural production

In assessing the implications of road transport systems on the development of small-holder agriculture in the Drummoland area under Bubi district, this study followed on Dorosh and Schmidt (2008) in adopting a conceptual framework in which transport systems affect both the supply and demand for crop and livestock production. On the supply side, the production of crops and livestock under small-holder farming systems in the Drummoland area depends on the agronomic potential of the activities considering locational variables such as transportation systems and market accessibility and availability. Market accessibility and availability are both dependent on the transportation systems available. It must be noted that, in this instance, where the road-transport systems become the central role player, the availability and efficiency of such systems become vital.

Demand for crops and livestock produced locally depends on the size of the local consumer market, that is, the local market surrounding the Drummoland area, which in turn is determined by the population size, net income, disposable income and the prevailing socio-economic regimes. In the absence of an absorbing local market, the need to sell the crops and livestock to other markets become necessary, and this in turn necessitates the need for efficient road transport systems that enable farmers to sell their produce to the Bulawayo markets. This study revealed that the local Drummoland market itself is limited as most people in the area are classified as rural-poor and live way below the poverty datum line. The market is very small and therefore cannot accommodate the produce from the local farmers. The prices offered by the locals are not competitive. Having made this analysis, it remains clear that efficient road transport is the vital cog needed to carry village produce to the markets in Bulawayo, where the products are on higher demand and fetch better prices.

This study revealed that better transport connectivity increases crop and livestock production, provides access to the markets and leads to the development of small-holder agricultural activities. The effects of better transportation are assumed to take place through faster transportation of inputs to the farming communities, faster transportation of crop and livestock produce to the market and reduction in transport costs of goods and services which raise producer prices of crops. The Drummoland farmers rarely get access to input markets for their crop fertilisers and animal vaccines. This situation makes them vulnerable to poor yields and poor livestock produce. The lack of access to input markets affect the productivity of the farmers greatly as they always lose when they sell their produce at the markets due to poor quality. This lack of access to the input markets is due to poverty and unsustainable transportation costs.

4.3 Market distance and road conditions

Lack of road connectivity can lead to delays in transferring produce to market areas, which can lead to quantitative and qualitative losses in farm produce. This is the case with farmers in the Drummoland area. Their problem is not actually the distance but accessibility. The state of the roads in the area make it difficult for vehicles to access the area especially during the rainy season as most roads will be slippery and impassable.

In this study, all the farmers have no access to good roads. Farmers explained that some of the roads are impassable during the rainy season, especially the feeder roads. It follows that marketing of produce outside the communities will be difficult because of poor roads. This situation forces farmers to sell their produce to the local nearby markets which offer prices that are below the value of the product. Cattle farmers end up selling their cattle to local butcheries and beef committees where the prices are hugely depressed. This is has been influenced by lack of accessible roads, and high transportation costs associated with longer distances. Lack of access to both input and output markets has been identified as a significant constraint on agricultural development in the Drummoland area.

The Bubi district transportation system has been a key competitive disadvantage for Drummoland small-holder farmers in urban markets. The importance of urban markets to small-

holder farmers cannot be over-emphasised. The urban markets consume nearly all their produce sales. The small-holder farmers are dependent upon the urban agricultural produce markets.

Farmers in Bubi district travel less to the produce and inputs market in Bulawayo and problem derives from the absence of reliable and easily affordable means of motorized public transport in the area. The absence of such services is a result of the poor state of the roads which render the area inaccessible and impassable, especially when there is bad weather. There is an overt dispersed spatial derivation of traffic which is conditioned by the state of the roads. There is also an imbalance in inflow and outflow demand for transport. This situation leaves the farmers with no option but to improvise and sell their products at very cheap prices to the local market and the mobile buyers who visit the areas.

The availability of transport in Bubi is dependent on cyclic market systems. The volume of traffic between the area and Bulawayo varies according to seasons and periodic times. There is little to no access to transport in the area during the rainy season and this is because of the slippery nature of the roads. Interviews with transporters revealed that it is risky for them to ply such routes during the rainy season as they can be involved in accidents in such an area. Transporters noted that going into the area during the rainy season is even more risky noting that even rescue vehicles cannot access the area as well. They would spend more days stuck in the area and hence lose business and accrue losses through breakdowns and food expenses.

The transporters stated that demand for transport is always high in the area but unfortunately they cannot service the routes all the time as they are guided by the condition of the road and the season. Asked why they charge higher prices in rural areas, transporters revealed that their pricing models are influenced by two factors which are interrelated. Firstly, they argued that they simply apply the general economic law of demand and supply. According to this law, the higher the demand the higher the price and in this case there is always less supply as most transporters are reluctant to risk their vehicles. Secondly, due to the bad condition of the roads, they charge much higher prices in anticipation of extra expenses in spare parts and break-downs as the roads are very dangerous.

Transporters noted that more often than not, they require carrying two spare wheels in anticipation of tyre burst and punctures. In noting all the challenges involved, it becomes evident that the costs of transportation increase as one approaches Bubi. The high costs involved in the transportation of inputs and produce by Bubi communities make them susceptible to poverty as they cannot achieve any meaningful agricultural development when they are so remote from the input and produce markets.

4.4 Assessment of road quality

Most of the feeder roads in Bubi are tarmac roads and some of them are gravelled. The roads are under the administration of the District Development Fund (DDF) which is under the Ministry of Transport. The roads are in poor state; they are characterised by massive potholes, have no drainage systems in place, some are narrow, single lane dust roads and are rarely re-surfaced. They have never been re-surfaced/re-gravelled ever since their construction. The farmers and transporters alike concurred that the roads are not passable during the rainy season as they are too slippery and too dangerous. This, they argued, is due to bad surface conditions and poor drainage systems along the roads.

4.5 Provision and maintenance of roads

Data gathered from the DDF staff revealed that maintenance of existing roads and construction of new ones has been difficult due to poor and obsolete equipment, lack of fund allocation from their parent ministry due to the prevailing harsh economic conditions where there are serious liquidity and financial challenges affecting the central government. The staff noted that they even lack enough manpower to carryout road maintenance tasks due to the current job freeze and austerity measures adopted by the government in 2010.

4.6 Transportation Problems

Respondents were asked to list the transportation problems encountered in the process of transporting their produce from the farm to their houses and markets. According to them these problems included: bad roads, high cost of transportation, irregularity of vehicles, insufficiency of vehicles, insufficient means of transportation and long distance from farm to their houses as well as markets.

Discussions were held with farmers and transporters in the sampled settlements, and from these discussions it was discovered that most of the roads linking these settlements to one another are

in bad condition. It was further gathered that road transport does not only have impact on the development of the agricultural production but also on the socio-economic development of the people in all these communities and rural development as a whole. Most of them indicated that they pay high fare in order to get their produce to where it is needed and this in turn affects their farm income. Invariably they do not realise enough money that can take good care of their households. The result of the interview with the transporters revealed that they prefer to be servicing settlements that are well connected with good roads than those that are not connected with good roads.

5. Conclusion

The study examined the contribution of road transport systems on the development of small-holder agricultural production in Drummoland village under the Bubi district in the Matabeleland North province. From the study, it was revealed that road transport has a significant impact on distribution of agricultural produce in the study area. The study also noted the innate transportation challenges faced by the farmers in the area. When asked what they used the transport for, the farmers noted that they need transport to carry their inputs to the farming areas and also to carry their produce to the markets. The farmers indicated that road transport network is fundamental to their business as the main market where their produce can fetch high prices is far from their farming areas. The farmers noted that it is better to sell their produce in the city due to better market prices offered as compared to those offered by mobile buyers who come to their communities. Market transport is very important because it links the farmers to the consumers. The availability of reliable and dependable road-transport systems influences the timely delivery of produce to the markets and of inputs to the farming communities.

It can therefore be concluded that road transport should be improved upon so as to improve agricultural production generally in the study area. This will in turn generate more income and improve the standard of living of the farmers as well as the inhabitants of the communities under study.

5.1 Recommendations

It is imperative for the government and the Bubi Rural District Council to work on improving the accessibility of the district in order for the farmers to enjoy the benefits brought about by efficient transportation systems. This will go a long way in improving the living conditions of the people in the community and hence bring development to the district.

To promote development in the area, there is need for adequate provision of rural transportation and other infrastructural facilities. To empower the grassroots government is of paramount importance owing to the fact that the construction and rehabilitation of most rural roads fall within the jurisdiction of the local government together with the DDF.

Maintenance culture is one of the major factors lacking in the study area. To ensure that existing roads are kept in good condition, there is need to set up maintenance units at local government level which will be responsible for rural road maintenance. Such maintenance should cover clearing of bush edges, provision of adequate drainage system and the maintenance of bridges and culverts to prevent blockage of such bridges and culverts among others. Public-private partnership program is another means of ensuring sustainable rural development. Considering the general state of the Zimbabwean economy, it is difficult for the government alone to rehabilitate roads in the country, hence the need for public-private partnerships to be adopted. To be able to do this and more effectively, there is need to encourage public participation in provision of basic facilities through various community self-help development programs. Similarly, Citizens' empowerment towards the development of their community to reduce the level of dependence on government is also recommended.

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