

IMPACT OF RURAL TRANSPORT ON AGRICULTURAL DEVELOPMENT: CASE STUDY JALANGI BLOCK, MURSHIDABAD, WEST BENGAL

¹ABDULLA AL MAMUN, ²SUBRATA KUMAR PAUL

^{1,2}Indian Institute of Engineering Science and Technology, Shibpur, West Bengal,
E-mail: ¹ mamunbesu@gmail.com, ² skpaul2412@gmail.com

Abstract - Rural transportation 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. This study examines the impact of rural road transport on agricultural development in Jalangi Block, Murshidabad district west Bengal, India. Primary and secondary data has been used for the study. Two hundred copies of questionnaire were distributed systematically to the farmers in the study area. Group discussion was also used to obtain information on the impact of road transport on rural development as a whole for the study area. Descriptive and analytical statistical methods were employed to analyze the data. However, the bad conditions of the road affect cost of transportation of agricultural produce which in turn affect the rural farmers' income. This study concludes by suggesting that an improvement in road transport system will lead to increased production by farmers. Community participation in road transport development should also be encouraged in the study area.

Index terms - Rural transportation, Food production, Agricultural development

I. INTRODUCTION

Transport is regarded as a key factor in improving agricultural development all over the world. It is the only means by which food produced at farm site is moved to different homes as well as markets. Transport creates market for agricultural produce, enhances interaction among geographical and economic regions and opens up new areas to economic focus and agriculture is the most fundamental human activities including not only the cultivation of crops, but also the domestication of annual. According to Johnson, V.A. (1999), "all the occupation by which gain is secured none is better than agriculture, none more profitable, none more delightful, none more becoming to a free man" Agriculture has always played a leading role in people's lives all over the world especially, in India about 65% of the total population engaged in agriculture. However, Ogunsanya (1981) observed that there are three types of routes in the rural areas viz; bush paths, unsurfaced rural roads and surfaced rural roads. However, the bush path is very common but the least developed of all the routes. Bush paths link villages with farmsteads and they are usually narrow, winding and sometimes overgrown by weeds especially during the rainy season. In a study carried by Filani (1993) in rural areas of Nigeria, it was discovered that where motorable roads exist they are mostly of unpaved surface, narrow width, circuitous alignment and with low quality bridges. In most cases, they are either clad with potholes or characterised by depressions and sagging. Such unsurfaced roads are hardly passable during the monsoon season when vehicles get stuck in mud or when the improvised bridges of cut-free trunks get swept away by flood. In another study carried out by Ogunsanya (1988) on relationship between

transportation, underdevelopment and rurality, he observed that the greater the degree of rurality, the lower the level of transport development. Aderamo and Magaji (2010) noted that transportation constitutes the main path through which different parts of the society are linked together. Jegede (1992) cited by Ajiboye and Afolayan (2009) noted that road transport is the most common and complex network. It covers a wide range, physically convenient, highly flexible and usually the most operationally suitable and readily available means of movement of goods and passenger traffic over short, medium and long distances. An efficient transport system offering cost, time and reliability advantage permits goods to be transported quickly (Rodrigue, 2006; Tunde & Adeniyi, 2012).

II. OBJECTIVES

1. Examine the effects of transportation in rural area of produce by roads on farmers' farm income.
2. Determine farmers' agricultural productivity level in relation to transportation of produce.
3. Identify different modes of transportation of agricultural produce in the study area.

III. STUDY AREA

Jalangi (community development block) is an administrative division in Dumkal subdivision of Murshidabad district of West Bengal state in India. It is served by the Jalangi police station with its Headquarter at Sahebrampur. The block comprises of ten Gram Panchayats, namely, Choapara, Debipur, Faridpur, Ghoshpara, Jalangi, Katabari, Khairamari, Sadikhan's Dearh, Sagarpara and Saheb Nagar) gram panchayat area.

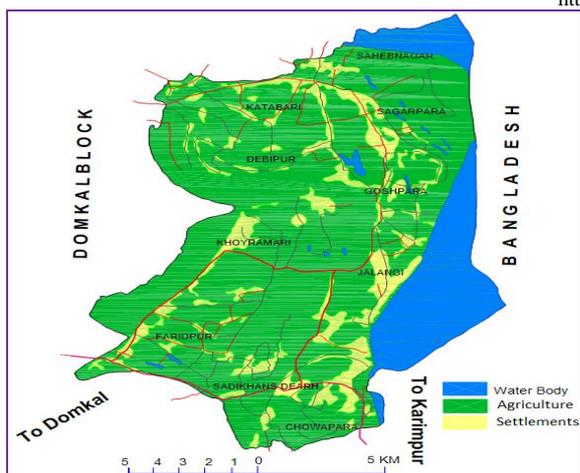


Figure 1. Jalangi Block Map

Geography: Jalangi is located at [WikiMiniAtlas](#) 24°08'N 88°43'E / 24.13°N 88.71°E / 24.13; 88.71. Jalangi community development block has an area of 122.00 km². The soil type of this region is a fertile, low-lying alluvial tract, locally known as Bagri, part of the Gangetic Delta. The block is drained by the Padma river and their tributaries. Most of the land is arable, and used as agricultural land. Commonly seen trees are Neem, Mango, and Jackfruit.

Climate: The annual mean temperature is approximately 27 °C; monthly mean temperatures range from 17 °C to 35 °C (approximate figures). Summers are hot and humid with temperatures in the low 30's and during dry spells the maximum temperatures often exceed 40 °C during May and June. Winter tends to last for only about two and a half months, with seasonal lows dipping to 9 °C – 11 °C between December and January. Rains brought by the Bay of Bengal branch of South-West monsoon lash the city between June and September and supplies the district with most of its annual rainfall of approx 1,600 mm (62 in).

Economy and Agriculture: Most of the people depend on agriculture for their livelihood. There are some Brick farms and some weaving machines, but they are losing out fast against the modern industries. Jalangi is famous for the high quality jute. Trade and business are conducted primarily with Asansol, Burdwan and Kolkata.

Demographics: As per 2001 census, Jalangi block had a total population of 2, 15,538, out of which 1, 11,267 were males and 1, 04,271 were females. Jalangi block registered a population growth of 24.55 per cent during the 1991-2001 decade which is compared to over all West Bengal was 17.84 per cent.

Transportation: Road is the only way of transportation. SH-11 is the only state highway passes through the block, including several major district road and village road, till date most of the village road are remain as nonmetal. Buses are the most common form of transport, and they are easily available, and run to a wide range of destinations within and without the block. For the short distance

the people use the engine van or van rickshaw for their movement. Milk and dairy product are transported by bicycle. Trucks carry majority of goods transported in the district.

IV. RESEARCH METHODS

Primary and secondary sources of data such as questionnaires, focus group discussion, texts, journals as well as internet browsing were utilized for the study. Two hundred respondents were selected from 10 settlements in the local government area using a systematic sampling method. In each settlement, a total of 20 copies of questionnaire were administered to the farm families. The questionnaire sought information on the socio-economic characteristics of the respondents, farm income, cost of transportation, the type and output of agricultural production and frequency of modes of transportation used and the effects of transport on agricultural production. Interview and discussions were conducted with the transporters and farmers respectively in order to find out their own opinion about the conditions of the roads to each settlement sampled. Descriptive statistics such as tables of frequencies and percentages were used to analyze the data

V. RESULTS AND DISCUSSION

5.1 Types of Crops Grown: Respondents were asked about the major crops grown in the study area. Their responses revealed that they grow crops such as paddy, wheat, jute, oil seed, maize and some vegetable plants. They indicated that 41% grow grains such as paddy, wheat, millet e.t.c. About 36% of the farmers produce leguminous crops such as others. It was further revealed that 25% of soya beans, cowpeas and beans. Also, 30% of the farmers indicated that they grow root crops also as yam, cassava, cocoyam among the farmers produce vegetables. Only 11% of the farmers grow tree crops, this is as a result of the long gestational period of grow.

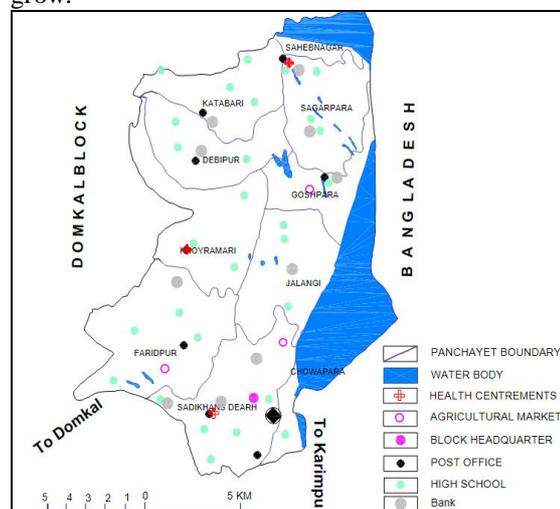


Figure.2 Panchayet Boundary and Major Public Facilities

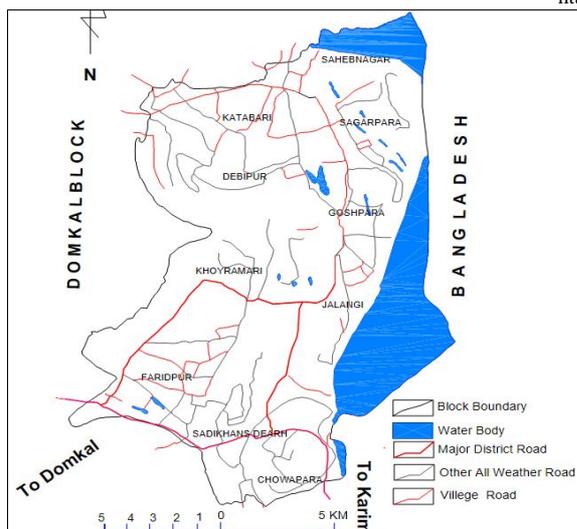


Figure. 3 Different types of road of the Study Area

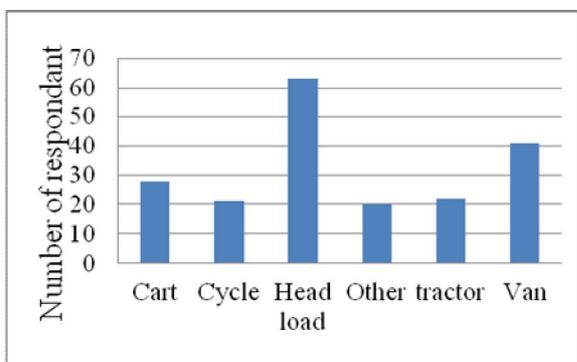


Figure.4 Transportation Mode use in the study areas

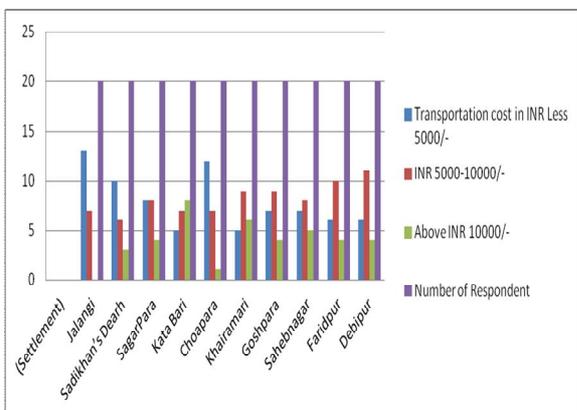


Figure.5 Transportation cost of the farmer in the different Settlement

VII. EFFECT OF TRANSPORTATION COST OF AGRICULTURAL PRODUCE ON FARMERS' INCOME

Cost of transportation of agricultural produce from the farm sites to the market has a great impact on production and income of farmers. This is because transport charges on agricultural produce vary with type of crops, the efficiency of the transport and distance travelled. From the primary survey data the table revealed that 39.5% spent less than INR 5,000/- annually in moving their produce to the market, 42%

spent between 5,000 and 10,000, and 19.5% of the farmer spent above INR 10,000/- annually to transport their farm produce to the various towns where demands are high. This means a significant proportion of the farmers' income had gone to transportation and this is as a result of bad roads in these areas. Farmers that spent less than 5000 annual are those engaged in vegetable production. High cost of transportation would translate to high selling price and if the price is too high when compared with other farmers from other areas, customers will not buy and this may result to selling at a loss.

Some factors are responsible for the quantity of crops produced by farmers in the study area and these vary from farm to farm and settlement to settlement. Such factors include availability of transport, markets, farm size and farm input. Most of them produce for subsistence and only sell the excess from their production. Transportation problems and other agricultural problems they encountered have really reduced their production capacities. Transportation cost especially has limited their production capacities hence they produce only little at a time.

Panchayat (Settlement)	Transportation cost in INR Less 5000/- (Yearly)	INR 5000-10000/-	Above INR 10000/-	Number of Respondent
Jalangi	13	7	-	20
S. Dearh	10	6	3	20
SagarPara	8	8	4	20
Kata Bari	5	7	8	20
Choapara	12	7	1	20
Khairamari	5	9	6	20
Goshpara	7	9	4	20
Sahebnagar	7	8	5	20
Faridpur	6	10	4	20
Debipur	6	11	4	20
	Total (79)= 39.5%	Total (82)= 42%	Total (39)=19.5%	Total (200)=100%

Table No 1. Transportation cost in different settlements area

Transportation Problems

Respondents were asked to list their 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, insufficiency of vehicles, insufficient means of transportation and long distance from farm to their houses as well as markets. The chart shows that only 15% of the farmers trekked less than 1km from their houses to their farms. Others 39%, 26% and 18% trekked 2km, 2-5 km, respectively from their various houses to their farms. All these distances take a very long time for them to get produce from source to destinations. Discussions were held with farmers and transporters in the sampled settlements, from their discussions it was clear 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 their households. The result of the interview with the transporters revealed that they prefer well connected with good

roads than those that are not connected with good roads. Most of them indicated that they pay high fare in order to get their produce to where needed and this in turn affects their income.

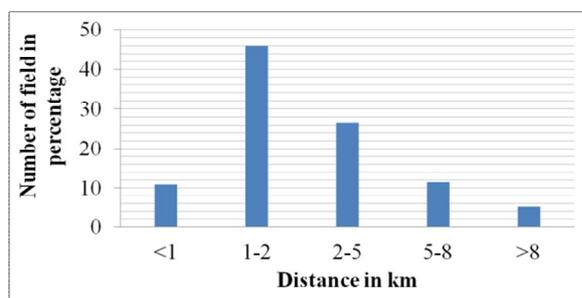


Figure.6 Distance between field and all Weather Road

As observed by PMGSY more than 70 percent of the beneficiaries mentioned that there has been an increased usage of fertilizers, pesticides and seeds. So use of fertilizer in the agricultural field is significant in the mordan era.

CONCLUSION AND RECOMMENDATIONS

The study had extensively examined the impact of road transport on agricultural production in Jalangi Block Murshidabad. From the study, it was revealed that road transport has a significant impact on distribution of agricultural produce in the study area. 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. Furthermore, community participation should be encouraged in the construction of roads.

REFERENCES

- [1] Aderamo, A.J and Magaji, S.A (2010) Rural Transportation and the Distribution of Public Facilities in Nigeria: A Case of Edu Local Government Area of Kwara State. *Journal of Human Ecology*, 29(3): 171-179. Kamla Raj Publishers.
- [2] Tunde, A. M., & Adeniyi, E. E. (2012). Impact of Road Transport on Agricultural Development: A Nigerian Example. *Ethiopian Journal of Environmental Studies and Management*, 5(3).
- [3] Ago-Iwoye. Ajiboye, A.O and Afolayan, O (2009) The Impact of transportation on agricultural production in a developing country: a case of kolanut production in Nigeria. *International Journal of Agricultural Economics & Rural Development* 2(2): 49-57.
- [4] Aloba O 1986. Rural Transportation In: I Falola, SA Olarewaju (Eds.): *Transport Systems in Nigeria*. Syracuse University, Maxwell School of Citizenship and Public Affairs. Series XLII: 125-138.
- [5] Filani MO 1993. Transport and Rural Development in Nigeria. *Journal of Transport Geography*, 1: 248-254.
- [6] Mabogunje, A. L. (1971), "Crisis in Rural Development Planning in Nigeria""Research for Development" NISER 1(1):1-10
- [7] Paul.D, Hyoung-Gun.W, Liang.Y, and Emily.S (2009) Crop Production and Road Connectivity in Sub-Saharan Africa: A Spatial Analysis. *Africa Infrastructure Country Diagnostic Working Paper 19*. A publication of the World Bank
- [8] Nwajiuba, C. (2012). Nigeria's agricultural agenda and food security challenges.
- [9] Ukaoha, K. (2012). 2012 Nigeria Agriculture Budget Appraisal. Nigeria: National Association of Nigerian Traders – NANTS.

★★★