



## Activity Sheet 8

# The Impact of Feeder Road Investment on Accessibility and Agricultural Development in Ghana

### Purpose

The purpose of this activity is to analyse the various options available for rural transport investment aimed at increasing agricultural development, by using a case study from Ghana. The following case study is an extract from a study carried out in the Ashanti Region of Ghana.

### Group Activity

1. Read the case study (pages 2 - 4).
2. Discuss the following questions:
  - A. *What transport investment would you recommend for the Ashanti Region of Ghana?*
  - B. *What are your reasons for these recommendations, and how will they contribute to agricultural development and returns for farmers?*
3. Note your points on a flipchart. You may also wish to add diagrams/maps to illustrate your recommendations.
4. Prepare to present your findings to the plenary.



# Ghana Case Study

## 1. INTRODUCTION

In order to help with road investment planning in a more typical environment a study of the impact of feeder roads was carried out in the Ashanti Region of Ghana by the Building and Road Research Institute (Kumasi) in co-operation with the Transport and Road Research Laboratory. The study was carried out in the period 1978-1982 for the Ghana Highway Authority as part of its Second Highway Project and was supported by the World Bank.

The purpose of the study was to determine how parameters of rural development (particularly agricultural practises, costs and prices) varied with accessibility within the region. From this it was hoped to infer how rural development would change if access were improved through road investment, and hence lead to better methods of planning rural roads in Ghana and elsewhere.

## 2. SURVEY BACKGROUND

### 2.1 The Road Network

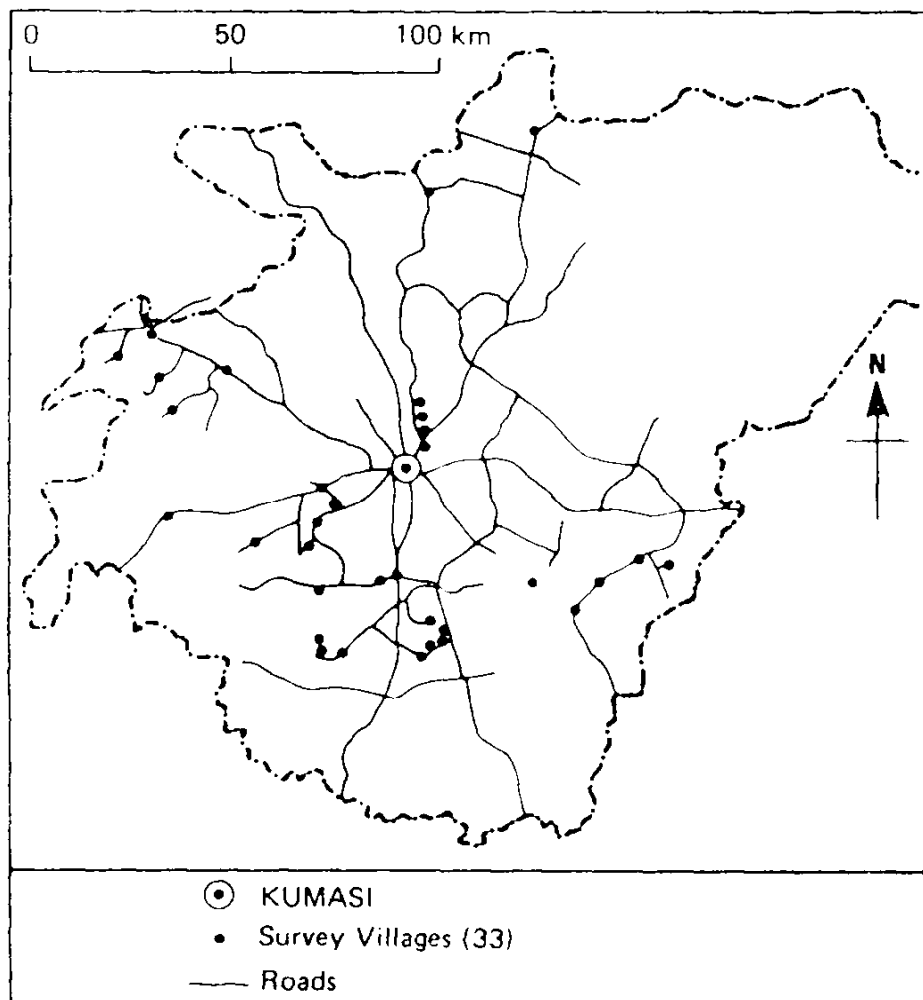
Kumasi is the major administrative centre and major market, transport and distribution centre of Central Southern Ghana and all major roads in the region radiate from there. Excluding Kumasi and the Afram plains, i.e. in 70% of the region, there are 4,400 km of gravel surfaced roads and motorable earth roads and tracks. Ninety-eight per cent of the rural population lives less than 2 km from a road or motorable track but only 0.3% lives more than 5 km from a road or track. Thirty-one per cent of the land area of the region lies more than 2 km from vehicle access but only 3.3 % lies further than 5 km from a motorable road or track.

### 3. SURVEY METHOD

#### 3.1 Definitions and Sampling Frame

Ministry of Agriculture enumerators collected cross-sectional socio-economic data for the study from 1,91 holders in 33 villages<sup>1</sup>. All but two of the villages in the sample had vehicle access and were between 8 and 102 km by road from Kumasi, lying in the cocoa growing forest zone (except for two villages in the savannah to the north of the region). Figure 1 shows the location of the survey villages.

**Figure 1: Ashanti region showing location of survey villages**



<sup>1</sup> The term 'holder' is used to denote an individual who manages a family farm holding. One holding may represent several dispersed fields or farms but in general totalling less than 20 acres (8 hectares). Data was collected on a holding basis.



## **4. THE RELATIONSHIP BETWEEN ACCESSIBILITY, TRANSPORT AND MARKETING**

### **4.1 The initial movement and location of sale of crops**

The distance between the average field and village was found to be 3.9 km; most of this consisted of footpaths. In over 90 per cent of the households surveyed the principal means of carrying goods from the field was by headload. Tractors were used occasionally in the savannah villages.

57% of holders sold the dominant proportion of their food produce at their house. A further 24% sold their food principally at the local village market. Cocoa was sold at the village buying posts of the Cocoa Marketing Board at a fixed price set for the whole country. Food is mainly sold to travelling wholesalers at the village who arrange for its transport and onward sale in urban markets. It is expensive for the farmer to arrange to sell his own produce in urban markets because not only must he pay his own return fare but transporters charge two to three times as much for individual loads (such as a bag of maize) than any would charge for movement of goods in wholesale quantities.

### **4.2 Social Mobility and Migration**

The level of trip making per holder was found to vary greatly with proximity to urban centres. As might be expected, the most accessible villages demonstrated much *higher* levels of mobility than the more inaccessible villages. For example one village very close to Kumasi reported a trip rate to Kumasi of 84 journeys per holder per year. By contrast the most inaccessible villages were found to have trip rates to Kumasi of only one journey per holder per year. The average trip rate of Kumasi for all villages was 19 journeys per holder per year.

### **4.3 The Impact of Accessibility on Farm Gate Prices**

The impact of accessibility on farm gate prices was estimated using Ministry of Agriculture data. Regression analysis confirmed that transport charges were closely related to travel distance. If it is assumed that one third of the Kumasi market price covers wholesale and retail margins and that all producers' prices are set in relation to the Kumasi market price, then it can be calculated that farmers located 100 km from Kumasi would receive 6.7 per cent less for their maize than those selling direct to wholesalers at Kumasi market. The calculated decline in farmers prices was little different for yam (6.5 per cent) or for plantain (5.2 per cent) at the same distance from Kumasi.