



## Activity Sheet 36

# Assessing the cost of interrupted access

### Purpose

The purpose of this activity is to draw on the experiences of rickshaw operators in Bangladesh to explore ways of estimating true operating cost savings of Non-Motorised Transport (NMT).

### Group Work

1. Read the attached paper and discuss the following questions:
  - A. *Explain the rationale for road investment in black-topping (asphalt) even though the VPD is less than 50.*
  - B. *What are the true operating costs for rickshaw operators?*
  - C. *How are with- and without- project costs best estimated? Why?*
2. Prepare your findings on flipchart.
3. Elect a person from your group to present your findings to the plenary.



## Rickshaw Operating Costs in Bangladesh

Studies in Bangladesh indicate how to realistically assess (changes in) the cost of transport services by rickshaws and rickshaw-vans that are used as a major form of rural transport. The rickshaw-van is the most common NMT used for goods in rural Bangladesh, and it is driven (pedaled) by a van driver. It can carry about 400 kg weight per trip. Since the main cost of its operation is the time and food-energy used by its driver, its operating cost is difficult to estimate. For project analysis, therefore, charges actually made by the rickshaw-van operators on different types of road conditions were collected through surveys.

The vehicle operating cost savings used in the study are based on actual differentials in charges between existing poor roads and improved roads, as they substantially reflect the cost variations due to greater exertion, time and additional food for higher level of effort and energy needed for plying on rougher roads. Since NMT transporters operate in a highly competitive market where there are no significant externalities, these financial rate differences are taken to reflect economic cost differences. The surveys showed that the rate per ton-km on moving on a rough (earth) road was more than double the rate for a smooth asphalt road (about \$0.50 per ton-km for the rough road, compared to \$0.20 per ton-km on smooth roads).

An interesting aspect of the case in Bangladesh was the realisation that human-pulled vehicles need smooth surfaces even more than motor vehicles, and that road investments in black-topping could be justified when heavy NMT traffic exists, even though the number of motor vehicles in use is less than 50 per day.

It was also clear that the people generally had small parcel loads or a few bags at a time to transport over short distances, which was best suited for the efficient form of NMT in Bangladesh (the rickshaw-van). Indeed, with road improvements there was a fast increase in both motor vehicles and NMT traffic.

The Bangladesh studies also established that after road development there is dynamic growth in traffic and a change in vehicle composition: buses starting to appear for the first time, and overall traffic growth exceeded 100 % even in the first year after project completion.

The study also found that cost differences between the with- and without-project situations are best estimated through likely changes in the composition of vehicles (decline of bullock carts and head portage, and increase in both NMT and motor vehicles) and related unit costs.

*Source: (1) "Bangladesh, Rural Infrastructure Impact Study, with Special reference to RDP-7 and other projects", LGED; prepared by Socio-economic Monitoring and Environmental Research, Dhaka; September 1999". (2) Rural Infrastructure Strategy Study, 1996*