Developing Successful Labor-Based Contractor Programs: Lessons from Ghana

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The use of labor-based methods for road works has been an important aspect of the strategy to improve rural transport infrastructure in Africa for the past 25 years. These methods not only produce gravel roads of equal quality to equipment-based methods, but can be used to generate rural employment in a cost-effective manner. The benefits of labor-based methods will not be realized unless programs are designed to make the working environment favorable to their use, recognizing that contractors base financial comparisons between labor- and equipment-based methods on a variety of factors. A recent case study on the Ghanaian experience attempts to identify these factors and provide program designers with lessons for developing successful labor-based programs.

BACKGROUND

Since the 1970s donors and international organizations have promoted labor-based methods for road rehabilitation as one means of mitigating rural unemployment in developing countries. These methods not only produce gravel roads of equal quality to equipment-based methods, but can be used to generate rural employment, save on foreign exchange, inject cash into the local economy, transfer knowledge of road works to the local community—a knowledge that will be useful for later maintenance—and reduce damage to the environment. In addition, unlike some other employment-generating programs, labor-based road rehabilitation programs can be justified on financial grounds and, therefore, appear to combine the employment-generating benefits of public works with the efficiency benefits of private sector delivery.

THE PROJECT

In 1986 Ghana became the first Sub-Saharan African country to launch a program introducing labor-based methods in the local road contracting industry. The program was initiated as a component of the World Bank’s Fourth Highway project funded by IDA and the United Nations Development Program; the International Labour Organization (ILO) provided technical assistance. Later the program was funded by the Ghanaian government, USAID and DANIDA as part of the World Bank’s National Feeder Roads Rehabilitation and Maintenance Project (NFRRMP). Since the program’s inception, The Ghanaian wage has remained at a level of approximately US$1 a day. The main elements of the program include:

- contractor training (at subsidized rates for the contractors),
- the introduction of a task-rate system for paying labor,
- the protection of labor-based contractors by creating a special registration category in which only they can compete, and
- the provision of bank loans of up to US$160,000 for the purchase of the necessary light equipment.

The program has been successful: between 1986 and 1994 the program created about 2.6 million person-days of employment, paid US$1.4 million in wages, and rehabilitated 1,190 km of gravel roads. In addition—and most importantly—during the pilot phase, labor-based methods were shown to cost approximately US$12,035/km with an average rate of completion of 1.4 km/month per contractor while equipment-based methods cost approximately US$19,463/km with an average rate of completion of 2.1 km/month. Although evidence from the pilot appears to prove the competitiveness of labor-based compared with equipment-based methods in terms of both...
cost and quality, this evidence fails to capture other factors contractors consider when making financial comparisons between these methods. A recent case study of the Ghanaian experience attempts to identify and understand these factors.

THE FIELD WORK
The study’s findings are based on two months of fieldwork during the summer of 1994 and two missions in 1995. The work included interviews with labor-based contractors, supervisors, and laborers in five regions of Ghana where labor-based firms were equipped with light equipment. Firms obtained equipment through local bank loans at commercial interest rates. In addition, two unequipped labor-based road contractors and one prominent building contractor were interviewed as were Department of Feeder Road (DFR) officials, an opinion leader at the district level, and inhabitants in three villages where gravel roads had been rehabilitated using labor-based methods.

THE FINDINGS
This study demonstrates that when firms make financial comparisons between labor- and equipment-based methods, they do not use unit rates alone (the standard engineering costs for undertaking specific work items), as governments and donors do. Instead firms consider:

The stock of second-hand equipment in the sector.
A large quantity of second-hand equipment can enable firms using equipment-based methods to underbid those using labor-based methods because it provides suitable equipment at a lower cost. Although sometimes unreliable, the rental fee for such equipment often includes the provision of a mechanic on site to fix any problems that might develop. This secondary equipment market is often overlooked by project designers.

The size and specialization of the firm.
Small-scale contractors find labor-based methods more competitive than medium- and large-scale contractors who already own heavy equipment. For small-scale contractors, labor-based methods avoid the costs of renting equipment or repairing their own old or poorly maintained equipment. Large equipment-based firms, in contrast, have higher fixed costs and lower variable costs. They would sooner underbid a labor-based firm and keep their equipment employed, than switch to labor-based methods and leave their equipment idle. Although large-scale firms would only be able to underbid labor-based firms for a short time (or they would be unable to replace their equipment), this ability to do so gives them little incentive to learn how to use labor-based methods.

The promptness of government payments.
Late government payments bias firms toward using equipment-based methods. When government payments are prompt, labor-based methods can be cheaper per km and can be more profitable for a firm than equipment-based methods. When government payments are delayed, however, labor-based contractors must pay their laborers late (since they often have no access to bridging finance), and this often results in strikes. These strikes, which not only delay work but often result in damaged property or life threatening situations, discourage contractors from using labor-based methods. Even in cases where small contractors can access bridging capital to pay laborers, late government payments increase the cost of labor-based methods more than they increase the cost of equipment-based methods primarily because equipment-based contractors face lower wage bills.

LESSONS
The study suggests four lessons that can be applied when designing labor-based programs in other countries:

Before initiating a program, assess the second-hand equipment stock and the competitiveness of the sector.
If there is a large supply of second-hand equipment in the sector, labor-based methods may be less attractive than equipment-based methods. To assess this, program designers must determine whether this secondary market is temporary or likely to provide a permanent flow of suitable equipment for road works. The competitiveness of the market will also affect the differential cost between labor- and (secondary) equipment-based methods. Even if there is not a significant secondary equipment market and the sector is highly competitive, medium-scale equipment-based contractors will likely underbid labor-based contractors by lowering their bid prices to their variable (marginal) costs, at least in the short term. In either of these cases, the road agency can decide to protect labor-based contractors from competition with equipment-based firms.

In Ghana, contractors were protected during the initial years of the program (i.e., during the Fourth Highway project) with the justification that the program was in a pilot stage. By 1991, however, when the Fourth Highway project closed, the Bank felt such protection corresponded to reserved procurement which was not allowed under Bank procurement rules. Thus, it was agreed during the NFRMRP appraisal mission that USAID and DANIDA would fund labor-based works as co-financiers. These donors periodically reviewed the relative costs and quality of labor- and equipment-based methods and demonstrated that protection was achieved without making sacrifices to either.
Ensure timely payments to contractors.
The first criteria for guaranteeing timely payments to contractors is ensuring timely funding to the labor-based program. In the case of Ghana, the first few years of the program (the pilot stage) was funded by IDA and contractors payments were timely. When this project closed in 1991, the Government of Ghana became the sole financier of works completed, and government payment to contractors became erratic. During this time, contractors found labor-based methods less profitable and many considered leaving the program. In 1993/94, USAID and DANIDA began funding works and payments became timely once again. Thus, programs that rely on government funding to finance labor-based works must be sure to set up mechanisms to ensure timely payments. A well-functioning road fund, for example, can provide a sustainable non-donor driven solution.

In addition, financing for road works must be provided to the department administering the contracts before works are tendered, and payment procedures for contractors must be streamlined. The study of the Ghana program found that contracts administered at the local level and paid out of a local account were paid more promptly. For example, when payments for work completed were administered by the DFR’s regional offices and audited ex-post, contractors’ invoices required vetting by only two levels before they were paid, whereas at the central level, invoices had to be vetted and signed by at least twelve government officials. Another institutional arrangement for expediting payments to contractors in Africa is the AGETIP, a nonprofit agency that has a streamlined administration and a special account audited ex-post to ensure the timely flow of donor funds to local contractors.

Develop an enabling environment.
Program designers should develop an enabling environment in which small-scale contractors can operate; that is, win acceptance for reforming minimum wage legislation to reflect the market wage, reduce the bias against small-scale contractors by slicing works into many small contracts, and provide small-scale firms with access to working capital.

Equip contractors with care.
When light equipment cannot be hired locally, labor-based programs will have to include measures to equip contractors. How this is done is of great importance. The provision of large-size equipment loans can make it difficult to set up a competitive environment for tendering, which is crucial for efficiency.

For example, in Ghana, the bank administering the hire-purchase arrangement required an assurance from the government that labor-based contractors would be provided with four years of continuous work to permit them to repay their loans. To provide continuous work, the DFR needed to tender the same number of contracts as there were contractors in each region. This led to collusion among the participating firms when contracts were tendered in one region. After this experience, the DFR returned to its system of awarding contracts based on fixed rates instead of tendered bids. The DFR negotiated these fixed rates with the contractors’ association and awarded and continue to award contracts on a rolling basis as long as performance is satisfactory. Although both USAID and DANIDA, the present financiers of this component, support a shift to competition among the labor-based firms, they accept that, to allow firms to establish themselves and to prevent non-payment of loans, competitive bidding cannot yet be introduced. Therefore, in countries where light equipment cannot be rented locally, program designers should keep loans and guarantees as small as possible while still enabling contractors to produce quality results.

The bottom line: Labor-based methods are a technology to be reckoned with in the road sector. They not only rehabilitate roads in a cost-effective manner but they can be used to achieve poverty reduction benefits as well. Whether or not labor-based methods will be sustainable depends upon the conditions of the working environment in which they are introduced. Although the working environments in many developing countries are currently biased toward the use of equipment-based methods, these biases can be effectively removed through carefully designed programs.

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