

Ghana Building a Stronger Transportation System

THREE SUCCESSIVE TRANSPORT PROJECTS IN GHANA contributed to the success of the country's economic recovery program, according to recent findings by the World Bank's Operations Evaluation Department (OED). Implemented between 1987 and 1998, the projects rehabilitated Ghana's economically important roads and instituted maintenance programs to arrest road deterioration. By removing physical transport constraints, the projects reduced transport costs, stimulated exports, and improved the mobility of passengers and goods. Because the rural population gained better access to markets and socioeconomic activities, agricultural production and marketing increased and became more diversified. An increase in commercial transport along improved feeder roads also made the rural population more mobile.

The projects led directly to strengthened institutions and policy reforms—the Ghana Highway Authority (GHA) and Department of Feeder Roads (DFR) now carry out most of their maintenance and rehabilitation work through private contractors and consultants, and the two agencies have improved their expenditure and work programs. There is now a thriving local construction and consultancy industry that uses labor-intensive methods, which has served to alleviate rural poverty by providing new income-generating opportunities. A reformed Road Fund, with an autonomous

board and secretariat, has greatly improved cost recovery and allocation of funds for maintenance. The projects' railway components, however, did not achieve their objectives. Nevertheless, the Bank's project management and policy dialogue with the client throughout the three projects were exemplary and represent "best practice" in the road subsector.

The Projects

Poor macroeconomic conditions and political instability in the 1970s and 1980s led many well-educated Ghanaians to flee the country. The wages of those who





A bridge in Ghana. Photo courtesy of World Bank Photo Library.

stayed did not cover their cost of living, and the highly politicized management system created widespread demoralization, high absenteeism, and low productivity. By the time the government began its economic recovery program (ERP) in 1983, import volumes had fallen by a third, real export earnings had fallen 52 percent, and domestic savings were almost insignificant. The transport sector had deteriorated badly. Sector institutions were deficient in organizational and incentive structures. Years of maintenance neglect and mismanagement had left the road network in such poor condition that it had become a liability to the national economy and hindered the effectiveness of the recovery program. Forty-six percent of the 14,134 kilometers of trunk roads had failed moderately or severely, and the majority of the 21,000 kilometers of feeder roads could not be used at all during the rainy season.

In 1985, the government and the Bank agreed on measures to develop a process for short- and medium-term repair of Ghana's transport sector facilities, as well as to design long-term management and financing solutions. The first of three projects was approved at the end of 1987. The objectives were highly relevant to the needs of the country, and the concepts embedded in the projects represent innovative thinking for the time. The projects were designed to promote the principles of the commercial management of roads, increase the capacity of the private domestic contracting industry, introduce labor-based construction methods, and promote intermediate means of rural transport.

First Transport Rehabilitation Project (TRP I)

TRP I was designed to help expand exports, farm production, and labor mobility through physical rehabilitation and maintenance of the transport infrastructure.

The project designers also planned to raise the transport sector's efficiency, promote low-cost technology to facilitate rural transport, and reduce transportation costs for both goods and passengers. The components were a program of road and railway rehabilitation and road maintenance, pilot programs for road and rural transport, and support for infrastructure planning and transport sector institutions. It was implemented in May 1988 and closed at the end of December 1993.

Second Transport Rehabilitation Project (TRP II)

TRP II, implemented in June 1991 and closed at the end of December 1997, was designed to remove physical barriers to export expansion, farm production, and labor mobility and to reduce transportation costs, but its design went beyond that of the first project. Rehabilitation and maintenance of road and railway infrastructure had the additional goal of facilitating private sector development. The designers planned to encourage new methods of infrastructure rehabilitation and maintenance through the use of appropriate technology, local resources, and community transportation. Planning to improve the efficiency of both public and private sector transport management, the designers intended to promote manpower training, market-oriented policies, and institutional development. They also included a design element to alleviate rural poverty and to improve self-development among rural women.

TRP II components included equipment, civil works, and institutional strengthening for roads; institutional development for the public and private transport sectors; and low-cost rural maintenance systems and infrastructure development that emphasized women's employment by providing civil works and institutional support for nongovernmental organizations (NGOs). Like the first project, TRP II had a railways component, which was designed to strengthen institutions and improve capacity by providing locomotives and wagons, equipment and tools, and civil works.

National Feeder Roads Rehabilitation and Maintenance Project (NFRMP)

Implemented in July 1992 and closed in June 1997, the NFRMP was designed to do three things: (1) increase food and cash crop production by improving access to feeder roads that are used to move agricultural inputs and produce to and from farms, villages, and nearby markets;

Table 1: Improvement in Road Conditions (percent)

Road condition	Trunk roads		Feeder roads		
	1989	1997	1989	Maintainable only, 1997	All feeder roads, 1997
Good	13	18	16	51	21
Fair	20	24	24	36	15
Poor	67	58	61	13	64

Note: The 1997 figures for feeder roads are divided by the maintainable network (9,805 kilometers), and the entire feeder road network (23,605 km), which includes the non-maintainable network (13,800 km).

Source: World Bank data. The numbers may not be comparable over the different years because the surveys were done using different standards.

(2) improve mobility and economic opportunity for the rural poor; and (3) build the institutional capacity of the DFR to ensure the maintenance of the rehabilitated road network and to sustain the feeder road network over time.

This project had several physical and structural components. Five thousand culverts were constructed and spot improvements made to 720 kilometers of roads to provide minimum access, 2,850 kilometers of rehabilitated and maintained roads were regravelled, and 2,500 kilometers of roads in 16 areas with high-to-medium agricultural potential were fully rehabilitated. The project included the purchase of road maintenance and workshop equipment, tools, and spare parts. It also provided consultant services for engineering design, contract supervision, an organization and management study and a socioeconomic impact study, and a maintenance-performance budgeting system. It also trained DFR staff and labor-based contractors and supported a labor-based training school; provided DFR with management, maintenance, and operations assistance; and helped DFR with decentralization to foster involvement of local communities in developing and testing a routine, district-based feeder road maintenance system. It supported the local contracting industry in equipment and performance assessment and assisted NGOs and women in improving rural mobility and the environment.

Project Outcomes

By the projects' end, the danger of trunk road failure was largely averted, although 58 percent of the road network remained in poor condition in 1997. The

Bank is providing support to the government to bring the network to 70 percent good condition and 20 percent fair condition by 2005. Only 13 percent of the maintainable feeder road network was in poor condition by 1997, although 64 percent of the roads were still in poor condition because they were not maintainable (table 1).

All three projects were highly satisfactory in their support of Ghana's ERP: they removed transport bottlenecks, promoted market-oriented reforms, and improved public sector management and resource allocation.

When villagers were asked how the projects had affected their lives, they said that the arrival of more vehicles in their villages had made for better movement of their produce and cheaper passenger services. They noted that they could now get better prices for their products because they could sell them directly rather than through intermediaries. Shopkeepers, too, said that the costs of bringing in goods had dropped, while sales had risen. And it was now easier and cheaper to use emergency vehicles when people became ill (table 2).

Through technical assistance and training, reduction in the unskilled labor force, and contracting with the private sector to carry out civil works, institutional capacity was substantially enhanced. Ghana now has a vibrant and well-organized domestic construction and consultancy industry. The GHA and the DFR can now manage projects better, plan and prioritize road maintenance programs, and rationalize their expenditure and work programs. Moreover, OED rated the Bank's performance as satisfactory in

Table 2: Impact of Improved Feeder Roads on Transport Cost

Transport cost (cedis)	Characteristics of feeder roads			
	A	B	C	D
Freight, 100 kg maize	2,000	2,000	3,000	3,000
Shared taxi	1,200	1,200	1,500	1,500
Minibus	1,000	1,000	1,000	1,200
Emergency taxi	15,000–20,000	20,000–25,000	25,000–30,000	25,000–30,000

Source: Village interviews.

Key: A, rehabilitated under NFRMP; B, rehabilitated using labor-based methods, and funded by another donor; C, received some spot improvement through DFR's own fund; D, not improved at all, and passable only with great difficulty.

the first two projects, and highly satisfactory for the feeder roads project in responding to Ghana's economic recovery program and its long-term needs. The borrower's roads agencies excelled in project implementation, took strong ownership, and performed satisfactorily overall, although the government was slow to meet the counterpart funding requirements (see table 3 for project summary data).

Challenges Ahead

The Bank has made significant contributions in improving Ghana's transport sector. But four challenges remain outstanding: contract management, decentralization, the Road Fund, and the failure of the first two projects to achieve their objectives in the railway subsector.

Railway transport

In retrospect, it is clear that a separate railway project would have focused attention more effectively on the problems facing Ghana's railways, which still suffer from poor physical condition and a deficient organizational framework. Although the two projects financed the rehabilitation of some tracks, rolling stock, and equipment, their effect on the condition and the efficiency of the railway system was negligible.

Unlike the program for roads, the railway component lacked a comprehensive and strategic program for fundamental change in the physical condition and institutional configuration of the railway system. The railways experience suggests that support for organizational strengthening and improvement is more effective when the railway operates in a conducive institutional environment with appropriate incentive structures. It should also be noted for any future project that organizational and system improvements need to be accompanied—or preceded—by reforms in the incentive structure and the institutional environment governing railway operations.

Contract management

Private contractors currently carry out the majority of the road works in Ghana, which has led to the development of a thriving domestic construction and consultancy industry. But benefits of the public road agencies' contracting out with the private sector have not been fully realized; institutional weaknesses in the road agencies have interfered with the management of contracts and the reduction of the transaction costs involved in obtaining and supervising contracts. One such weakness is wage and incentive structures and compensation packages that are not sufficiently competitive to attract and retain the skilled labor force needed to improve institutional capacity to manage contracts. Many trained engineers and other skilled staff leave the public sector for positions in private industry, creating an imbalance in skills between the contracting agencies and private contractors. In addition, the road agencies need to develop an institutional mechanism to make sequential adaptations to changing circumstances and to resolve disputes.

To address these deficiencies, the institutional framework within which the contracting agencies are organized requires a fundamental reorganization. The road agencies need to be corporatized to allow them to develop incentive structures akin to that of the private sector, so that they can attract and retain qualified staff. Parliamentary legislation to give them autonomy is not enough. The procurement process needs to be strengthened; an institutional mechanism developed to ensure transparency and efficiency; and an arbitration mechanism for resolving disputes between the government and the private sector institutionalized.

Decentralization

Ghana's political and economic decentralization program is orchestrated by a powerful central government ministry, suffers from weak organizational capacity at the district level, and does not delegate accountability to local constituents. Roads management and financing are significantly more political at the district level than they are at the central level. The DFR is required to transfer its technical responsibilities to district governments, but the Ministry of Local Government controls district government administration and funding, effectively recentralizing them. The 110 districts that are supposed to assume responsibility for their own feeder roads have a severe shortage of skilled workers, lack the organizational capacity to improve and maintain the feeder roads efficiently and economically, are too small for economies of scale, and have too few qualified engineers to adequately plan and manage road improvement and maintenance. The most feasible of the proposed solutions would group district road areas in autonomous departments, governed by a board drawn from representatives of the private sector and users in the districts. This would minimize political and bureaucratic interference in the day-to-day management of feeder roads. It would also allow districts to exploit economies of scale and would encourage transparency and accountability to constituents.

Road Fund

Ghana's Road Fund was reformed in 1997, greatly improving cost recovery and road maintenance allocations. From 62 million cedis in 1996, Road Fund revenue is projected to rise to 219 billion cedis in 1999. The 1997 act that reformed the fund limited executive branch power by establishing an independent institutional mechanism, but this does not guarantee the fund's sustainability, because the government has the power to reverse the act. Sustainability depends on favorable public opinion, a healthy macroeconomic environment, and ad hoc measures to ensure road maintenance during macroeconomic shocks. Further, if Ghana is to have truly commercialized roads in a decentralized market economy, resource generation needs to be aligned with resource allocation.

Table 3: Summary Transport Project Data, 1987–98

<i>Project</i>	<i>Duration</i>	<i>Performance rating</i>	
		<i>Outcome</i>	<i>Sustainability</i>
TRP I	12/10/87 to 12/31/95	Satisfactory	Uncertain
TRP II	12/13/90 to 12/31/97	Satisfactory	Uncertain
NFRRMP	2/7/ 92 to 6/30/98	Highly satisfactory	Likely

Conclusions and Lessons Learned

Five main points emerge from a consideration of the experience with transport in Ghana:

- The transaction costs of contract management need to be adequately considered when moving to a private-sector-dominated institutional arrangement for the design and implementation of civil works. The benefits of contracting out with the private sector will be eroded if the public road agencies fail to develop adequate capacity to manage contracts and minimize the transaction costs embedded in project design and implementation.
- The corporatization of road agencies and the establishment of a dispute resolution mechanism should precede (or be done alongside) the institutional change to contract out with the private sector.
- A clear definition of ownership and classification should precede the decentralization of feeder road management to the district level, and devolving power and accountability for resource generation and allocation to the district level requires a coherent strategy.
- Road funds can be an important step in managing roads in a market economy. To complete the commercialization of roads, the fund should generally allocate support in proportion to a region's contribution to the fund, but should also have a mechanism to explicitly address regional disparities and inequities to correct past imbalances.
- Improvement in the railway system depends on the implementation of reforms to improve the incentive structure and the institutional environment. Privatization should be promoted in a timely manner.