Highway Improvements in Chile

Three projects in Chile are outstanding examples of "best practices" in road sector management and lending, notes a recent OED audit.* The projects virtually eliminated the backlog of roads maintenance. They created a strong partnership between the public and private sector for building and maintaining roads, and they helped to rationalize road sector management. Strong commitment to the projects by the government, sector institutions, and beneficiaries was a key factor in their success. Other factors were good project design, effective borrower-Bank relationships, and favorable macroeconomic conditions during implementation.

Roads carry more than 90 percent of Chile's inter-urban passenger traffic and two thirds of its freight traffic. The Bank has supported the roads sector through seven projects over three decades, and an eighth is being prepared. Total approved lending is about $580 million.

Early projects were undertaken against a backdrop of political unrest in the 1970s, which delayed needed road maintenance. By the late 1970s, roads had deteriorated alarmingly.

The three projects audited—Highway Reconstruction I and II, and Road Sector Project I—were approved in 1980-85. They were implemented by Vialidad, the Roads Directorate in the Ministry of Public Works. Vialidad is responsible for planning, building, and maintaining the basic roads network, and shares responsibility with local communities for maintaining local roads.

The projects sought to arrest the premature deterioration of roads, expand capacities for maintenance, transform Vialidad into an effective and efficient organization, and reinvigorate road management in general. Their design was typical of the Bank's road lending, except that the third was a sector project—a lending instrument reserved for mature borrowers.

Outcomes

Road conditions

About 55 percent of the paved roads are in good condition, and another 35 percent are in fair condition. Maintenance programmed for the next few years, combined with gradual improvements in road design standards, is expected to enhance conditions further. Sector Project II, now in progress, is providing part of the financing. Vialidad's experience shows that investments in maintenance (including rehabilitation) are highly attractive economically, with returns of 34-50 percent.

Maintenance capacities

Chile's maintenance backlog—even on secondary local roads—has been almost eliminated. Works were of high quality and exceeded quantitative targets. The projects, in combination with the current lending operation, have helped create strong capacities for maintenance.

Chile is well ahead of most Bank borrowing countries in enlisting private sector assistance for maintenance. Contractors carry out all periodic maintenance and rehabilitation, and part of routine maintenance. Engineering consultants assist in preparing and controlling works. Communities make minor contributions to maintaining local roads.

Vialidad manages maintenance efficiently; the agency's total administrative expenditures are only 7.5 percent of its total expenditures, despite the high volume of maintenance contracts.

Budgets for maintenance doubled in real terms between 1982 and 1989. Meanwhile, the share of maintenance in total road spending rose from 30 to 59 percent; it is currently about 53 percent.

 Sector management

The projects helped Chile rationalize road sector management, reinforce good management practices, and provide new impulses for institutional growth. Their influence extended beyond their formal goals, as part of a broad borrower-Bank dialogue on a wide range of sector issues.

Performance Audit Report, Chile: Highway Reconstruction Project, Second Highway Reconstruction Project, and Road Sector Project." Report No. 12983. April 1994. OED reports are available to Bank Executive Directors and staff from the Internal Documents Unit and from Regional Information Services Centers.
Putting efficiency first

Vialidad scored a major achievement in putting economic efficiency first in managing road infrastructure. Two advances that increased efficiency:

- Private sector concessions for financing and operating roads. To ease constraints on financing road network extensions and improvements, Vialidad identified several potential road concessions and analyzed conditions under which private capital could be attracted. Under a concession contract, the operator has the right to charge user fees in the term of tolls.
- A highly successful axle load control system. Under Reconstruction I, Vialidad created a system—currently comprising 11 stationary and 23 portable scales—at strategic points throughout the road network. The scales are properly manned, operated, and maintained, and load regulations are stringently enforced. They provide information that is used to plan investments and maintenance.

Efficiency: A major goal, successfully met, was to establish economic efficiency as the overriding criterion in road infrastructure management. Vialidad spurred the move toward efficiency by:

- Creating a planning and programming model for system-wide analysis of road maintenance and investments. Vialidad staff adapted the Bank’s Highway Design and Maintenance Model to permit the identification of sector programs that best suit Chile’s needs and resources. Calculations are done on personal computers. Vialidad uses the model routinely to decide on spending priorities and strategic alternatives.
- Developing a comprehensive, up-to-date, and reliable road information system.

Relations with the private sector: The projects reoriented Vialidad toward increased reliance on private contractors. Associating the public and private sectors in the execution of works was designed to keep direct government employment in check and infuse government business with private sector expertise and efficiency.

Reconstruction I, for example, required international competitive bidding (ICB) for civil works. Reconstruction II also specified that most works, including periodic maintenance and bridge repair, go to ICB, with the remainder reserved for local competitive bidding.

Training: Attention to staff training was strong. Fresh university graduates were keen to work in Vialidad to benefit from the formal and on-the-job training offered, even though the agency’s pay scales were lower than the private sector’s. Many seasoned engineers have opted for long-term careers in Vialidad because of opportunities for professional enrichment.

Determinants of project success

- Strong commitment by government, sector institutions, and beneficiaries: Often in Bank highway lending, only the physical aspects of projects receive full borrower backing. In Chile, the borrower was strongly committed to all the types of changes supported throughout the project cycle. Vialidad staff brought discipline, dedication, and a sense of purpose to the Bank-borrower relationship, which was good throughout.

Support was, and remains, solid among beneficiaries—townships and other communities, transport enterprises, other road users, construction and consulting companies, producers and consumers, exporters and importers, and other groups.

- Coherent project design: The projects were relevant to actual needs, relatively simple in their goals, and focused on infrastructure management, especially maintenance. Becoming progressively more ambitious, they were adapted to demonstrated implementation capacities and borrower commitment. Reconstruction I was small, and its goals modest, but it tested government capacity and commitment to turn the sector around. Reconstruction II was somewhat larger and had much broader goals. Sector Project I, by virtue of its sector format, increased size and goals to the maximum extent.
- Effective borrower-Bank relationship: Frequent consultations covered the full range of technical and policy issues in the sector. The government saw the Bank as a partner in shaping sector policies and opening a window on transport development in other countries. Increasingly, the Bank became a sounding board for sector policy ideas and a conduit for the flow of technical information. The continuity of capable Bank staff benefited the projects greatly.
- Favorable macroeconomic conditions during implementation: Chile undertook a successful structural adjustment program in the 1980s; terms of trade improved, and by the late 1980s real GDP was growing at 6-11 percent a year. Fiscal conditions permitted the large increase in spending for road maintenance and the start of a large-scale conversion from maintenance by force account to maintenance by contract. Successful macroeconomic restructuring also established a policy climate conducive to new ideas in road infrastructure management.

Conclusions

The experience shows that a roads sector in crisis can be turned around if:

- the borrower is motivated, and determined to shift course in critical policy areas;
- projects are well prepared, with appropriate borrower participation; and
- borrower-Bank relations are cultivated in a spirit of mutual respect and trust.

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