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PERFORMANCE AUDIT REPORT

BOLIVIA

**EXPORT CORRIDORS PROJECT
(CREDIT 2012-BO)**

June 23, 1999

*Sector and Thematic Evaluations Group
Operations Evaluation Department*

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Currency Equivalents (annual averages)

Currency Unit = **Boliviano**

(at Appraisal Year 1984)

B1.0 = US\$0.06

US\$ 1.0 = B

(At Completion Year, 300 Annual Average)

B. 1.0 = US\$

US\$ 1.0 = B.

Abbreviations and Acronyms

ADL	Administrative Decentralization Law
ENFE	National Railways Company (Empresa Nacional de Ferrocarriles)
ESF	Emergency Social Fund (Fondo Social de Emergencia)
FCA	Andean Railways (Ferrocarril Andino)
FCO	Oriental Railways (Ferrocarril Oriental)
ICR	Implementation Completion Report
IDA	International Development Association
INPEX	National Institute for Export Promotion (Instituto Nacional de Promocion de Exportaciones)
MTC	Ministry of Transport and Communications (until August 1993)
OED	Operations Evaluation Department
PAR	Performance Audit Report
PCR	Project Completion Report
PCU	Project Coordination Unit
SAE	Equipment management System (Sistema de Administracion de Equipos)
SAM	Maintenance Management System (Sistema de Administration de Mantenimiento)
SAR	Staff Appraisal Report
SDC	Regional Roads Administration (Servicio Departamental de Caminos)
SIRESE	Sectoral Regulatory System (Sistema de Regulacion Sectorial)
SNC	National Road Administration (Servicio Nacional de Caminos)
SNTCAC	National Secretariat of Transport, Communications, and Civil Aviation
TA	Technical assistance

Fiscal Year

Government: July 1 – June 30

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June 23, 1999

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

**SUBJECT: Bolivia: Performance Audit Report
Export Corridors Project (Credit 2012-BO).**

The Bolivia Export Corridors Project, supported by Credit 2012-BO for SDR 37.0 million equivalent, was approved in FY89. The credit was closed in FY96, one year behind schedule and was fully disbursed. The Implementation Completion Report (ICR) was prepared by the Latin America and the Caribbean Region.

The project, the first in the transport sector after a hiatus of about ten years without Bank operations in the sector, had two main objectives: (i) to upgrade key links in the transport network, particularly on the export corridors toward the Pacific and the Atlantic oceans and (ii) to strengthen transport sector institutions with a view to making the National Railway Company (ENFE) more market-oriented and improving the maintenance capability of the National Road Agency (SNC). The project included the following physical components: **on the Andean (Pacific) routes**, (a) maintenance of the La Paz - Oruro highway, the project's main physical component representing about half of the project costs and (b) improvements to the track and freight terminal on the La Paz - Arica (Chile) railway line; **on the Eastern (Atlantic) routes**, (c) rehabilitation of the rail line Santa Cruz - Quijarro, (d) construction of a freight terminal in Santa Cruz, and (e) conversion of rail boxcars to multiple use on ENFE's Eastern network; **systemwide**, (f) maintenance works on the main road and rail export routes, (g) purchase of telecommunications equipment for both rail networks. The technical assistance component was intended to: (h) improve transport planning capabilities, (i) improve road maintenance management (j) improve ENFE's marketing and management capabilities, (k) facilitate the use of containers and airfreight and (l) carry out road investment studies.

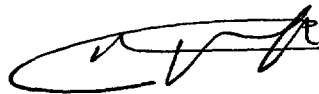
The project objectives were achieved. The major road investments were carried out and expanded beyond their original scope. These investments reduced transport costs from the Bolivian highlands to the port of Arica on the Pacific. The system-wide road and rail maintenance works were achieved as 28 out of 29 planned works were done. Due to privatization the railway investments on the two corridors were limited to the reballasting of the Santa Cruz- Puerto Quijarro line and improvements in telecommunications equipment. Institutionally, the project was successful in putting in place road maintenance and equipment management systems. These systems were widely used by the district offices of the SNC at project completion. The Administrative Decentralization Law passed in 1995 by the new administration decentralized the SNC and created difficulties with road sector management. These difficulties continue but are being addressed by the Bank under a subsequent road maintenance credit. The objective to improve the railway's market orientation was exceeded: with the arrival of a new administration in 1993, the railway's technical assistance component was restructured to assist the government in privatizing the railway company. This process proceeded swiftly and privatization of the

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railway was completed in March 1996. The fact that some of the railway investments included in the project were not carried out did not appear to hinder the privatization process.

OED rates the project outcome as satisfactory, its institutional development impact as substantial, its sustainability as likely, and Bank performance as satisfactory. These ratings are in line with those of the ICR. The reestimated economic rate of return for the main road components is 19 percent, which is satisfactory, though lower than the appraisal estimate of 56 percent due to higher investments costs and lower-than-forecast traffic.

The project offers two generic lessons. (1) Changing a parastatal organization into a market-oriented organization operating under commercial principles may be an impossible task. A satisfactory outcome for commercializing a parastatal (railways) comes through privatization—concessioning its operation and physical plant to a private entity—not from efforts to transform it without privatization. (2) Restructuring and decentralizing the road sector requires a managed and incremental process. Decentralization must be compatible with the administrative structure of the government, and be accompanied with a stable and predictable financing and fair allocation mechanisms of the road budget between areas, road classes, and programs for construction, maintenance, and operations.

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke at the end.

Attachment

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<p>This report was prepared by Antti Talvitie (Task Manager), who audited the project in July 1998. Mr. William Hurlbut edited the report. Ms. Romyne Pereira provided administrative support.</p>
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Principal Ratings

	ICR	OED	PAR
Outcome	Satisfactory	Satisfactory	Satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development	Substantial	Substantial	Substantial
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

Key Staff Responsible

	Task Manager	Division Chief	Country Director
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Preface

This is a Performance Audit Report (PAR) on the Bolivia Export Corridors Project (Cr. 2012-BO) for which a credit of SDR28.3 million (US\$40.15 million) was approved in 1989. The project closed one year later than planned in June 1996, at which time an undisbursed balance of SDR1.9 million was canceled.

The Operations Evaluation Department (OED) prepared this report based on a review of the President's Report, Staff Appraisal Report, Implementation Completion Report (Report No. 16606, published May 15, 1997), transcripts of Board proceedings, project correspondence files, Bank documents on other transport projects, and other Bank material. In December 1998, an OED mission traveled to Bolivia to discuss the project with official representatives of the appropriate ministries and private and civil entities. OED also discussed the projects with Bank staff.

The PAR had four objectives: (i) to examine project preparation, including borrower participation; (ii) to assess institutional development, managerial improvements, and government commitment to reform; (iii) to evaluate project outcomes and physical condition of the investments; and (iv) to draw lessons for the future.

Following standard procedures, copies of the PAR were sent to the borrower for comments. No comments were received.

1. Introduction and Background

1.1 Slightly more than half of Bolivia's population of 8 million, and the majority of its poor, live in rural areas. Annual per capita income is low—about \$800—and agriculture, which employs nearly half of the labor force, is the most important sector. GDP growth was stagnant in the 1980s, but has averaged nearly 4 percent annually in the 1990s. Services account for nearly 60 percent of GDP. The agriculture and manufacturing sectors are small, about 15 percent each, the latter being dominated by agro-industrial enterprises. Smuggling, often by truck, and the informal sector are both important elements in the economic picture. The former is estimated to amount to 15 percent of GDP¹ and the latter to consist of 150,000 (non-taxpaying) “businesses,” while the formal sector has about 15,000 (taxpaying) businesses. Bolivia is endowed with ample but undeveloped mineral and hydrocarbon resources.

1.2 Bolivia is mountainous, transport costs are high, access is difficult, and all types of communications links require investments and development. Roads are the predominant means of transport, with railways carrying a large share of the import/export traffic. Transport over Bolivia's large territory is important for internal distribution and marketing of inputs and food crops, and for imports and exports to its neighboring countries—Brazil, Paraguay, Argentina, Chile and Peru—and to ports in the Atlantic and Pacific. The three most important ports are Arica and Antagofasta on the Pacific, in Chile, and Puerto Quijarro (Puerto Suarez) at the Paraguay River to the Atlantic, and through it, Brazilian ports in the Paraguay and Parana rivers.

1.3 At the time of appraisal, Bolivia's access to ports was inadequate. Its rail terminals and intermodal facilities were deficient, the container facilities insufficient and inadequate, and the workforce unaccustomed to providing customer-oriented service. The roads serving both domestic traffic and traffic to the ports sorely needed improvement.

1.4 The Bank supported a highway maintenance project and three railway projects in Bolivia in the 1970s. After a 10-year hiatus due to divergence of views about economic management, two Reconstruction Import Credits (RIC) with road and rail components and two Emergency Social Fund (ESF) credits targeted to small enterprises were approved in the mid to late 1980s. The Export Corridors project was approved in 1989. A second road maintenance project is currently under way and another road project is being prepared. The Bank's objectives in Bolivia's transport sector are: to strengthen the organizations responsible for transport facilities and regulation; to upgrade the main corridors for access to international markets; to ensure the maintenance and improvement of the main highway network (RVF); and to improve and open access to agriculture. These objectives are not in conflict with the objectives of the country.² The Bank is coordinating its program with other donors and lenders.

1.5 Several important issues arose and were acted upon by the government during project implementation. The first of these was the Capitalization Law (*Ley de Capitalization*) in 1994, which authorized the investment of private capital in state-owned enterprises and affected the railway component of the project. The second was the law for the Sectoral Regulatory System (SIRESE, *Sistema de Regulacion Sectorial*), also in 1994, which created five superintendencies

1. Jose Luis Valencia A. and Justo Alcides Casas: *Opiniones y Analisis. Contrabando e Informalidad en la Economia Boliviana*, Camara Nacional de Comercio, Bolivia, 1998

2. Transport Strategy Paper (1987); Bolivia Export Corridors Study (1988); SAR: Bolivia Export Corridors Study, and Bolivia Second Road Maintenance project.

for the power, telecommunications, hydrocarbon, transport, and water sectors. This was followed by the Administrative Decentralization Law (ADL), which created, in the transport sector, the decentralized road administrations, SDCs (*Servicio Departamental de Caminos*), and in essence, aimed to eliminate the central road administration, SNC (*Servicio Nacional de Caminos*). The decentralization transferred the road ownership to newly created administrative units, *prefecturas*, and maintenance, including road toll revenue, to the SDCs. These regulatory, administrative, and financing changes, as modified by the Supreme Decree affecting only the road sector, have brought fundamental changes in road management in Bolivia. The decentralization process has also affected financing and prioritization of Bolivia's road program. Several important issues, discussed below, remain unresolved. In short, the road sector restructuring is not yet completed and would benefit from cooperation with the Bank.

2. Objectives and Preparation

2.1 The Bank began preparation of new transport projects in Bolivia in the mid-1980s. The *Transport Sector Strategy* paper was prepared in 1986 and the *Bolivia Export Corridors* study in 1988. These two studies identified and recommended priority for the Export Corridors project. The reports were discussed with the government on several occasions, particularly during the preappraisal mission in 1988. The involved ministries agreed with the conclusions of the studies. The project was appraised in late 1988 and negotiations took place in early 1989. The client participated fully in the studies and in project identification.

2.2 The project had two main objectives: (i) to upgrade key links in the transport network, particularly on the export corridors toward the Pacific and the Atlantic oceans and (ii) to strengthen transport sector institutions with a view to making the National Railway Company (ENFE) more market-oriented and improving the maintenance capability of the National Road Administration (SNC). The project included the following components:

On the Andean (Pacific) routes	Maintenance of the La Paz-Oruro highway, the project's main physical component, representing about half of the project costs Improvements to the track and freight terminal on the La Paz-Arica (Chile) railway line
On the eastern (Atlantic) routes	Rehabilitation of the rail line Santa Cruz – Quijarro Construction of a freight terminal in Santa Cruz Conversion of rail boxcars to multiple use on ENFE's Eastern network
System-wide	Maintenance works on the main road and rail export routes Purchase of telecommunications equipment for both rail networks
Technical assistance to improve	Improve transport planning capabilities Improve road maintenance management Improve ENFE's marketing and management capabilities Facilitate the use of containers and airfreight and carry out road investment studies

2.3 Project preparation was supported by sufficient studies, coordination with other donors (IDB, OECF, and GTZ), and client participation. It was consistent with the borrower transport sector objectives and the Bank assistance strategy. It reflected contemporary Bank thinking on how to improve parastatal enterprises. If there were flaws in the project design, they undoubtedly would be the absence of measures for greater control of smuggling at the border and international terminals, and misjudging ENFE's commitment to commercialization. The project design and

supervision were, however, flexible and observant and, with fortuitous and timely help from a new government, facilitated commercialization of the railways.

3. Implementation and Results

3.1 The project had five implementing agencies. The Ministry of Transport (MTC) and its successor, the National Secretariat of Transport, Communications, and Civil Aviation (SNTCAC) had overall responsibility and was the beneficiary of the technical assistance in transport planning. The National Road Administration (SNC) implemented the road projects and associated technical assistance; the National Railways Company (ENFE) was the (planned) implementing agency for the rail components and associated technical assistance; the National Institute for Export Promotion (INPEX) for the airfreight and container studies, and the Emergency Social Fund (ESF) for the labor-intensive maintenance works.

Achievement of Objectives and Results

3.2 The objectives of the project were achieved. The results of the project's physical components are clear. The civil works—road and rail maintenance and reconstruction and rail reballasting—and the acquisition of telecommunications equipment were undertaken well and, for the most part, according to schedule. Several components were not implemented due to the privatization of the railways. In the Pacific corridor, the railway infrastructure was not rehabilitated, and in the Atlantic corridor, the bridges and the intermodal terminal in Santa Cruz were not built.³ The prorated ERR of the Bank-supported road reconstruction and maintenance component is an acceptable 19 percent but is lower than the appraised ERR of 56 percent. The lower ERR, especially for the El Alto Oruro road segment, was the consequence of an upgraded road design with 25 percent higher costs and lower traffic growth. The upgraded design is expected to increase traffic safety and pavement life. These anticipated benefits have not been included in the re-estimated ERR. The telecommunications equipment helped improve travel times (and consequently reduce needed rolling stock and employees) and productivity in the Andean rail network. These improvements were also due to privatization of railway operations, and direct attribution of effect is impossible. Finally, the labor-intensive maintenance works by ESF generated 17,000 staff-months of employment but no formal economic analysis was done because of their small scope and scattered locations.

3.3 Project studies were completed as planned, but the effectiveness of the technical assistance is questionable. No doubt, the positive effects are greater than what the record shows. Starting in 1993, the new government re-organized the Ministry of Transport under a new name, SNTCAC, and focused on “capitalization” and privatization of the railways and telecommunications, and on decentralization. In this turbulent environment, technical assistance to SNTCAC and to ENFE suffered. Improvements in SNTCAC capability in sector planning, other than privatizing parastatal operations, may have been minor. But improvement in sector planning capability is time-consuming in any country and not realizable in two or three years. The later IDB-supported development of the Transport Master Plan has been completed but was evaluated as part of this audit. So, the least that can be said is that there has been progress in this

3. The project was restructured in 1995. Because there was no progress in ENFE's commercialization the funds originally targeted for railway civil works were reallocated to capitalization and technical assistance for the railways, and (earlier) to additional road maintenance (see para. 3.4 below). The Machacamarcá-Pazna road was added to the project. The road works were not completed before the credit's closing, but the completion took place under credit 2395-BO, Second Road Maintenance project.

effort. In the case of the railways, technical assistance did succumb to the resistance of the parastatal company, ENFE. The plan, in which expatriate management consultants worked alongside ENFE's management to transfer commercial practices to run a railroad, proved unworkable. Technical assistance to the road administration, SNC, was, however, a partial success. Management systems for both road maintenance (SAM) and equipment (SAE) were developed and taken into use by the decentralized SDCs.⁴ But on the institutional side, technical assistance to SNTCAC to decentralize SNC started too late for it to have much effect other than a partial recentralization once the decentralization proved unsuccessful.

3.4 As mentioned, despite persistent efforts for three years, technical assistance was unsuccessful in helping ENFE to commercialize the railways or procure planned civil works or goods, save (partial) reballasting of the Eastern network. Because of this and issues in financial management, IDA and the government agreed, in 1993, to scrap the civil works components of the railway and reallocate project funds and restructure the project (in 1995). Commercialization of ENFE was transferred to the newly formed Ministry of Capitalization. Project funds were reallocated to the rehabilitation of the Machacamarca-Pazna road and to finance studies and technical assistance to Ministry of Capitalization for undertaking commercialization of the railways. Once the government made that decision, the Bank-supported technical assistance to accomplish it was very effective. The recapitalization and concessioning of the railway was done with surprising speed within a period of two years. A small company, by design half-owned by the Bolivian government, successfully bid for the two networks, the Andean and the Eastern, and has the railways operating concession for 40 years. The rolling stock was transferred to the new companies, which also have responsibility for maintaining and improving the physical facilities while the government remains their owner.⁵

Ratings

3.5 The ICR rated the outcome of the project as satisfactory, sustainability as likely, and institutional development impact as substantial, mostly on the strength of the railway privatization. Bank and borrower performance were both rated as satisfactory. The audit concurs with these ratings. A qualification is necessary. In the road sector, institutional development impact was a mixed success. Some technical assistance components were concluded successfully, but decentralization had both positive and negative impacts. Undoubtedly, the content and the process of the road sector decentralization were less than successful. It was done in haste. The Bank had little opportunity participate in the design. Steps were, and are now, being taken to rethink and ameliorate the adverse initial effects. It is important for the Bank to remain an active partner with SNC and to see the decentralization process to a successful end.

4. Discussions with SNC and SDC staff indicated that both SAM and SAE are in use but need to be updated. The supporting data system, the road data bank, is outdated and must be modernized. Currently, the SAM does not serve the management in a manner it should and could. There is a need for continued training and technical assistance for SNC and SDC and domestic consultants in the use of SAM-like methods.

5. The ICR has a concise and useful discussion of ENFE's capitalization and privatization process (p.3-9). The result appears sustainable, although the railways may have a political problem. A feeling was commonly expressed that the government is trying to rewrite the concession agreement and that there is hostility toward the company that is half-owned by a Chilean holding company. On the other hand, sources close to the government felt that now (at the end of 1998) that the concession company has complied with its investment injection and can either issue new shares or buy out the government's shares held by a pension fund, it should do the latter.

Bank and Borrower Performance

3.6 Bank performance was satisfactory. Part of this good performance was the outstanding project ICR and the excellent records, which permitted a comprehensive understanding of the project progress. The road components and associated technical assistance to SNC achieved their objectives, save the incomplete decentralization. The technical assistance program to ENFE to assist in its transformation ran into conflicts, including conflicts among consultants, and resistance to change was powerful and successful in the beginning. ENFE's general manager changed several times during the project, Public Service Obligation agreements were difficult to negotiate and unsuccessful.⁶ But the Bank was patient and persistent. In the end, success emerged.

3.7 Borrower performance also was satisfactory, especially in the road sector civil works. The performance of ENFE was marginal at best. Its willingness to participate in the training program was insufficient, although language difficulties were also a factor. Once the government changed its approach, however, the borrower did the capitalization and concessioning of the railways professionally.

3.8 The mission interviewed several professional associations that are in the transport sector or dependent on good transport services. There was unanimity of opinion that improved transport infrastructure, passenger and cargo services, and the connections between the ports and the hinterland is imperative to make (export) businesses competitive. There also was unanimity that the project achieved its objectives and made an important contribution, but that much remains to be done. A decade or two of work will be required to achieve the broader (project) goal of well-functioning export corridors, making the transport sector institutions market-oriented and the physical transport facilities adequate in capacity, coverage, and maintenance to serve both imports and exports. In this regard, two aspects merit more extensive comment: procurement and decentralization of the road administration. Both of these were dealt with professionally in the project, but improvements in Bank approaches may be possible.

Procurement

3.9 International competitive bidding was used to procure goods and services in the project. In the case of ENFE, procurement was sluggish because of the lack of motivation. For highways, the civil works contracts were won by foreign contractors (which used Bolivian companies as subcontractors) and, for two contracts, by foreign-Bolivian joint ventures. SNC supervised the road works. There were no problems associated with the procurement of road contracts in this project.

3.10 The local contractors (and consultants) feel, however, that the prequalification requirements disqualify them unjustly. This has occasioned an exchange of opinions between the contractor association and the Bank. The main contention of the Bolivian contractors is that the prequalification requirements are so demanding as to exclude them from competition and that with appropriate "slicing" some local contractors could prequalify. The Bank maintains that the criteria for economy and efficiency in its procurement guidelines, technical feasibility of projects and local administrative capacity lead to the choice of contract lots. Both viewpoints have merits as discussed below.

6. Covenants covered both the financial performance and tariff restructuring of ENFE. The content of "Acuerdo Programa" that dealt with several aspects of ENFE's commercialization, including government responsibilities for Public Service Obligations, was outlined in the SAR. The "Acuerdo Programa," the subject of several unsuccessful negotiations, was superseded by the successful privatization.

3.11 The procurement announcements normally list prequalification criteria for experience, knowledge, technology, and financial situation (capital) for at least three of the past five years. The required experience concerns the quantities of work performed by the firm in its contracts during the past five years. The personnel experience (knowledge) lists years of experience in principal responsible positions. Requirements for equipment (technology) and the bidder's financial situation are defined in the context of the bid scope also for the past five years.

3.12 The Bolivian road budget from all sources for the past five years has been no more than US\$130 million, of which the local share has been no more than US\$30 million. Thus, of the budget no more than US\$50 million has been available for local competitive bidding.⁷ Because of this small road budget, local firms have undertaken only small quantities of work and may have difficulty to meet both the experience and the financial criteria, especially if the lot sizes are (medium) large in the bidding. The Bolivian contractors' claim of being excluded by the prequalification criteria may therefore have some merit. The evidence that economies of scale or scope in road construction require large contracts on grounds of economy and efficiency is paltry.⁸ The evidence there is shows that there are scale economies in road construction but they depend on technology, size of the road program, and its composition. Importantly, however, there appear to be economies of specialization, indicating that joint production (i.e., base courses and pavements and bikeways and traffic safety works) is more costly than production of "special" outputs. Thus "slicing," or smaller lots, may in some cases be economical and could be allowed to be decided by the bidding process. On the other hand, many small contracts require local capacity to manage contracts. If such capacity is absent, as may be the case in Bolivia, costly delays will ensue. Thus, "slicing" decisions should be made in the context of sectoral and national priorities to have the roads in service quickly, or more gradually to develop national capacity to manage and supervise contracts, and learn new technology. These considerations should be part of (Bank-supported) project design.

3.13 Experience has shown that local capacity building depends critically on stable funding and availability of work.⁹ Unstable road budgets and unpublicized road programs make it difficult for the local contractors to plan for the future and to develop necessary skills and cooperation plans.¹⁰ In an unforeseen construction market, large lots and requirements of many years of experience in responsible position also work against local contractors and consultants. However, construction is inherently local activity. Even when an international firm wins the contract much of the work will be done by small local contractors. One possible strategy to foster the development of national contractors would be work with *Camara Boliviana de la Construccion* to "slice" the project and its requirements for the firms' financial capacity so that at least two groups of local contractors could prequalify. As mentioned, it is possible, even likely, that the local

7. Based on the following conservative assumptions: (i) foreign loans and credits, >US\$30 million annually, have similar prequalification criteria as the Bank and require 20 to 25 percent counterpart financing; (ii) 20 to 25 percent of the budget is used for routine maintenance by the force account; (iii), equipment, bridges, non-qualifying feeder roads, studies, and personnel costs take 15 percent of the budget; and (iv) debt service is another 15 percent.

8. Talvitie, A. and C. Sikow (1992) Analysis of Productivity in Highway Construction Using Different Definitions of Average Cost, *Transportation Research*, Vol. 26B, No.6, pp. 461-478, Pergamon Press, Great Britain.

9. Lantran Jean-Marie, (1999) Presentation in the Transport Expo and several earlier World Bank publications by the same author.

¹⁰ This is one of the reasons for making a sustained budget, transparent methods for resource allocation, and publication of road plans one the recommendations (Para 4.1).

contractors could function as subcontractors to the main (international) contractor.¹¹ But, subcontracting has low profit margins. The main contractor normally negotiates the subcontracts after several rounds of “competitive bidding.” Contractors, especially those who consider themselves capable of being the main contractor, dislike this. If national capacity building is an objective, it is valid to raise prequalification as an issue, both in terms of local capacity building and exclusion.

3.14 Are there local contractors with experience, technology, knowledge, and capital? The ICR indicates that there are contractors in Bolivia (p. 3). The audit mission visited several projects built by local contractors and briefly examined their available equipment. There is contractor capacity in Bolivia. Local contractors had built asphalt roads and roads with (double) surface dressing with good quality; there were asphalt stations (now idle for lack of work) and other equipment; and there was a kilometer-long bridge being built using *Freivorbau* technology—no simple technology or job. The assertion that the local construction industry has technology and knowledge, also has merit. The experiences in the Second Road Maintenance project suggest, however, that there may be deficiencies in the ability of road administration to manage and supervise contracts, and in the financial (and sometimes technical) capacity of national contractors. In part this derives from the loss of expertise due to highway sector restructuring. In sum, the Bank’s procurement practices and training programs in Bolivia merit attention to achieve the development objectives for the local construction industry.

Decentralization

3.15 There were early but weak signals of the decentralization initiative. The project files have correspondence that signals in 1993 what was to come. For unknown reasons and despite of offers for cooperation, the government was unwilling to work with the Bank to design and implement a workable scheme. Once decentralization came, and it did so suddenly, the Bank moved to provide technical assistance but was now more concerned that Bank projects were not affected. The decentralization issue is still unresolved. Road sector organization and decentralization will have major effects on roads from (network) planning to operation. Bolivia’s road network is sparse and needs substantial expansion. Road administration and management are in the early phases of decentralization and customer orientation. The Bank should explore how to work with the government to help both organize the sector and develop an effective road management capability. The following paragraphs discuss issues relevant to restructuring Bolivia’s road organizations within a framework for several specific alternatives.¹² Regardless of

11. It is possible to arrange (joint-venture) contracts so that they specifically transfer knowledge from international contractors to local contractors. A good example is presented in the ICR for the Dominican Republic road loan (Loan 3350-DO).

12. A footnote regarding the existing situation is necessary to understand what follows. In August 1995 the Bolivian Congress approved the Administrative Decentralization Law (ADL). It transferred the maintenance and rehabilitation of all roads to *prefecturas*. Most staff and equipment were also transferred to the prefectura’s Departmental Road Administrations (SDCs), formed on the basis of the SNC’s district offices, which in the past functioned as the executing arms of the SNC and were accountable to it. The SDCs are now accountable to the *prefect*, appointed by the president. In the *prefectura*, the department for economic development is responsible for planning and arranging financing for its road network. The road works are supervised by the SDC. The law also required the dismantling of the SNC. The Bank, fearing that the projects it supported and the institutional capacity and management systems it had helped develop would be jeopardized, negotiated with the government a partial reversal of the ADL whereby SNC would retain its legal status until the conclusion of internationally financed projects. Later, the responsibility for contracting out the maintenance of the core network of 8,000 km was recentralized to SNC, but it lacked funds to do so until 1999 when 70 percent of the road toll revenues were allocated to it for that purpose. The recentralization left the SDCs short of funds to support their staff, equipment, and regional roads maintenance program, and the SNC without district offices to supervise the contractors. In short, the road organizations are disconnected and lack accountability.

the specific alternative chosen, it is imperative that objective criteria are employed in financing decisions and in resource allocation between networks and regions to improve and to ensure performance and accountability under a decentralized administration.

3.16 The current road sector organization in Bolivia approximates that of a disappearing federal system (Annex B) administration that manages the trunk network. The SDCs are the “state” road administrations funded by the central government. In essence, SNTCAC manages 10 independent road administrations: the SDCs and the SNC. Furthermore, because there is no competent technical umbrella organization and because the *prefecturas* have no direct political accountability or funding mechanism of their own, formulation and execution of coherent road sector policies and network plans is hopeless. In addition, there is some duplication of organizations because the SNC must establish field offices in some districts to manage the trunk network. Two principal options for improvement are sketched below.

3.17 The first alternative is to organize Bolivia’s road sector as a quasi-federal organization. This would mean that SNC, as an office in the SNTCAC, would be responsible only for the sector mission, goals and policies, designation of the trunk road network, funding mechanisms (possibly also resource allocation between regions and road classes), regulation and broad oversight, but with no road management functions. The *prefecturas*’ SDCs would manage the non-local road networks, possibly with aid and performance targets from the SNC. This system can work, but not well. Planning, setting priorities and resource allocation would be politically very difficult. SDCs must possess strong technical competence. Coordination would require cooperation of numerous governmental organizations in addition to other affected interests. In short, the odds of this kind sector organization being an accountable, competent, and efficient in today’s Bolivia are small.

3.18 The other alternative is to follow a model of road sector organizations for unitary states. Although still rare, decentralization is possible and indeed desirable.¹³ In this model the road administration would be a single organization. The SNC, the central administration, and the SDCs would retain many of their current functions. But the district highway administrations, the SDCs, would be part of the SNC and accountable to it. The broad resource allocation would be managed centrally, the details locally (Annex B). The director general and directors of the SDCs would form the management team of the SNC to ensure ownership and coordination of policies, planning and programming, and meaningful performance evaluation.

3.19 Whether a federal-type organization or a decentralized unitary state organization is chosen for the transport sector, it is important that all road sector planning and financing be brought within sector management. This means that the SNC and the SDCs do the road planning and coordinate with other organizations and interests. The principle that intersectoral coordination, policy-making, and resource allocation should occur politically at the highest level holds. If, at that level, funding is directed to the road sector to achieve other objectives, the road administration is the best organization to know how to do it. The road sector itself is decentralized, desirably, and managed vertically. To achieve this is not easy. There will be

To make matters worse, private interests can and are building feeder roads to their properties, which SDCs are required to maintain. It is unclear what effects the municipalities, led by elected *alcaldes*, have on *prefecturas*’ road priorities. In absence of transparent prioritization processes the potential for ‘pork’ projects is great.

13. OED (1998) Performance Audit of Five Indonesia Transport Projects, pp. 24-27; Talvitie, A. and J. Hirvelä (1996) *Organization, Management And Financing In A Road Agency*. Transportation Research Record 1558; and Catharina Sikow-Magny and A.P. Talvitie (1996). *Efficient Organization of Highway Construction, Rehabilitation and Maintenance*. TRB Record 1558. Washington D.C.

political and bureaucratic opposition from entities used to having budgets and exercising power. Changes cannot only be suggested from outside, but the responsible general-purpose government must design the governing concepts and all important details and carry them out with the participation of affected interests.

4. Conclusions and Lessons Learned

4.1 The Bank's supervision of the project was outcome-focused: to promote Bolivia's exports and reduce the costs of its foreign trade. In this it succeeded. The roads in the export corridors improved and maintenance management tools were developed and taken into use; the railways were commercialized; and several useful studies were undertaken. But Bolivia's export corridors are far from being completed. This is particularly so because they are not separate from the development of Bolivia's internal trunk network, including the rail network, or even the feeder road network. Future trunk network projects are suggested, but their budget-constrained prioritization is not advanced or is too optimistic.¹⁴ For resource allocation, and planning and programming—road management in general—strengthening of the transport secretariat, SNTCAC, and its transport policy-making and regulatory capability and improving the road sector organization—SNC and SDCs—are a high priority. Concrete problems demonstrate the issues best:

- Many interviewees with widely differing interests said that there are two overwhelmingly important roads that require urgent attention: Santa Cruz–Puerto Suarez and Cochabamba–Chimore. The former improves access to the Atlantic, and the latter rehabilitates an obsolete road segment, integrates the country, and improves access to the Pacific from the eastern parts of Bolivia. Many interests had the view that prioritization of projects is based on secondary criteria; e.g., the road to Puerto Suarez is not built because the railroad has a monopoly to transport goods there. These views, whether true or not, are a sign, of back-of-the-envelope, prioritizing and inadequate participation of important stakeholders in the planning and programming process. The road administrations must publicize their plans and priorities to foster public discussion of them, and to enable the local contractors plan for their cooperation and participation strategies. The plans and priorities need to be based on appropriate studies and processes, including participation, and analyses of trade-offs within the recognized budget constraint.¹⁵
- The capacity of Bolivia's export corridors and the accessible ports may be a bottleneck to Bolivia's growth. The following illustrates the situation. Agricultural products and minerals are the main export commodities transported by rail and comprise over 70 percent of the rail

14. *Servicio Nacional de Caminos* (1998) *Corredores de Integración*, Departamento de Planificación, La Paz.

15. All the interviewees suggested the two roads mentioned as the number one priority. An important interest group added: "... and there are a whole bunch of other roads that need to be built." The range of priorities and actions that must be considered when there is a severe budget constraint, as is the case in Bolivia, is great. Consider the following. The auditor traveled the Cochabamba–Chimore section of the road. This very important road was in poor condition with some unstable and dangerous geotechnical segments. Obviously the road must be rebuilt. Equally obviously something must be done before rebuilding and quickly, to define immediate maintenance actions. Superficial examination showed that water and drainage was the key problem and a cause of the threatening landslides that had just occurred a few days (or hours) earlier. With an expenditure of a few thousand dollars empiezometers could be installed to measure water pore pressure from which land movement can be predicted and a timely preventive action taken. Or, if the bedrock is near, transducers could be installed to warn of impending ground movements. Because rock moves when it wants to, preventive actions are necessarily more complex. In either case, information of the geological conditions is of utmost importance.

traffic. The current rail traffic demand is about 3 million tons/year. when the railways have a total capacity of about 5-6 million tons/year (Andean Railways) 1.5-2 million tons/year and Eastern Railways 3-4 million tons/year.). Various scenarios put the range of increase in agricultural production in Santa Cruz region at 1.5 to 4 million tons/year.¹⁶ There also may be an increase in the mineral transports. While mine-specific rail lines may be able to take care of the mineral transports, the more scattered agricultural products are more difficult to serve by railheads because increase in rail capacity is not cost-effective at current freight rates. Road capacity between Santa Cruz and La Paz is insufficient to assume the growth because of the Cochabamba–Chimore section; the same is true for the Santa Cruz–Puerto Suarez segment, although the development of Brazilian markets is uncertain. Also port capacity is limited. Over 70 percent of the agricultural products are exports, with a 40/60 split between the Pacific and the Atlantic. The Chilean ports on the Pacific, serving Chile and Bolivia, have a combined capacity of 5-6 million tons/year (Arica 1.2million tons/year and Antagofasta 4 million tons/year). Thus, at both oceans and within the country there are transport capacity problems. A continued study of supply and demand factors for imports and exports and improvement of export corridors and trade facilitation is indicated.

- Another aspect of the lack of transport capacity concerns the local and feeder roads. This has both import/export and domestic dimensions. For the former, the focus on the trunk facilities is insufficient. Several interests felt that the export corridors without feeder roads to reach the agricultural producers served the importers and a few large exporters the best. It furthermore contributed to making wheat imports (donations) from the United States and Canada so advantageous that wheat cultivation was virtually abandoned. For the latter, interviews and site visits indicated a shortage of feeder roads and an inadequate institutional framework. Local collector roads were planned and programmed and funded by the *prefectura's* economic development directorate with general (pass-through) tax funds without coordination with the national transport plan. SDCs maintained the roads using their (toll and other) income. Private interests and landowners needing access built many feeder roads; but again, maintenance was an SDC responsibility. Clearly, an accountable sector organization is required.
- Given the above problems and Bolivia's interest in becoming a full member of MERCOSUR—according to experts, Bolivia has until 2005 to be fully competitive—road management and the level of service and coverage of infrastructure, especially of the “core” road network requires improvement. In addition to the institutional framework discussed earlier, the key issues requiring attention are:
 - Improvement of technical skills in SNC and in the consulting and construction companies. For this purpose, technical cooperation and sustained work, procured from local contractors and consultants, are of utmost importance.
 - In SNC, technical assistance should be focused to improve road management. SAM and SAE need to be updated. The road database is old and the computer systems are outdated. SAM does not serve road management, as it should. There is a need for comprehensive management training in the use of SAM-like methods in resource allocation and prioritization.
 - There is a need for sustained budget for both investment and maintenance of roads, including transparent methods for resource allocation between programs, classes of roads

16. Some government scenarios put the expected traffic demand for cargo at 20 million tons/yr. This is unlikely unless Brazilian imports/exports to the Pacific find Bolivia's transport system an attractive corridor (a comprehensive article in *Bolivian Times*, November 19, 1998).

and geographic areas. The current budgeting process is lengthy and complex and would benefit from modernization. These issues are integrally related: roads need an additional income source because, at the present level of service, increases in the toll levels are hardly acceptable.

- Finally, privatization of the railways must be protected.

4.2 In general, the transport sector must be put into a broad socioeconomic context. Several civil society entities expressed the view that Bolivia's top priorities are justice system, human resources, markets, and technology. The last three, supplemented by organizational restructuring, are also transport sector priorities and can be directly addressed in transport projects.¹⁷ There is a great need for training and technical cooperation; markets cannot develop without a good transport system; and technology is critical for cost-effective improvements in the level of service of the transport system. The audited project had small components to serve these priorities, but more is needed.

4.3 The ICR has an excellent discussion of lessons learned. The project offers four additional generic lessons:

- Changing a parastatal organization, such as ENFE, to a market-oriented organization operating under commercial principles may be an impossible task; a contention supported by experiences elsewhere. A satisfactory outcome for commercializing a parastatal (railways) comes through privatization—concessioning (possibly coupled with “unbundling”) its operation and physical plant to a private entity—not from efforts to transform it without privatization. Commercial sustainability is ensured only when there is competition, accountability, and incentives that foster ingenuity and efficiency, require responsibility, and allow custody of the benefits from improved productivity and performance.
- Decentralization should be compatible with the administrative structure of the general-purpose government. It must be accompanied with stable and predictable financing and fair mechanisms for allocating the road budget between areas and road classes and programs for construction, maintenance, and operations. As discussed earlier, it is important to retain a sector view in organizing decentralization. As implemented in Bolivia, transfer of road ownership was not accompanied with a budget or with human resources to manage the roads. But the roads came with the responsibility for (a large share of) the personnel previously employed by the road administration, and for the road maintenance equipment and garages. This equation does not hold true. Off-sector road planning, financing, and construction are unhelpful. This prevents both good planning and prioritization of projects.
- Restructuring a road sector, or any sector, requires a managed and incremental process. The importance of process was overlooked in Bolivia. Decentralization as a managed process entails both planning and progressive participation of the involved personnel as well as affected interests, persons, and firms. All cannot be planned in advance; in particular, passing legislation is not sufficient. The incremental processes include both planned and staged activities, and activities not foreseen. In Bolivia, an example of the former is the transfer of

17. Superficially it may seem that the justice system is not relevant for the transport sector. But it is, because the transport sector has correlations with poverty. For example, fair contracting and resource allocation practices can hardly emerge without a good justice system. A Chamber of Commerce (CC) executive put it succinctly: “..the justice system is poor because Bolivia is poor, and because of the poor justice system Bolivia is poor.” As to what to do with the justice system: “...just have the country in the right track.” It is worth mentioning that the CC has developed and instituted an independent arbitration facility that has been accepted by the authorities.

road ownership or maintenance responsibility. Before this can be done, another process and studies are necessary in which roads are classified and ownership defined. An example of the latter is labor and retention of technical capacity-related issues, which could not be foreseen when the fundamental decision on decentralization was made.

- Acceptance and belief in the value of technical cooperation are integral to successfully restructuring transport sector organizations. Through them progressive participation and implementation of reforms is achieved. This requires both sensitivity and skills, especially on the part of the Bank. Technical cooperation and associated training must be driven both by demand and by supply (purpose) and be consistent not only with the country's or agency's issues and capability but also with regional issues and capabilities.

4.4 Experience Lessons suggests that for institutional changes to succeed it is critical for the Bank to remain open to new ways of accomplishing the project objective. Experience elsewhere support the hypotheses that the process to carry out institutional changes is technology-dependent.¹⁸ ENFE was successfully privatized top-down because railways are a technology that require centralized operation and respond to centralized control. The presence of the other factors—a political objective and mandate to reduce the government role in railways by privatizing its operation and the custody of the physical plant; a well-formulated plan to do it; a competitive choice of competent operator; and a market-driven mechanism to sustain the outcome—are also necessary. If the labor redundancy issues are appropriately attended to, a centralized reform of the railways is possible and will not be held up. The situation is different with roads and highways. Centralized road management is possible but tenuous; a decentralized administration can do it better. The change from a centralized road management to a decentralized one cannot be done top-down. The Bolivia evidence suggests, and experience elsewhere confirms that decentralizing a road administration requires an incremental, adaptive and development-stage appropriate process to match both the perceived needs and the institutional capacity.

18. R. Kopicki and L.S. Thompson (1995) *Best Methods of Railway Restructuring and Privatization*, The World Bank; Talvitie A. (1997) *International Experiences in Restructuring the Road Sector*. TRB Record No.1558, pp.99-116. National Academy Press, Washington D.C.

Basic Data Sheet

EXPORT CORRIDORS PROJECT (CREDIT 2012-BO)

Key Project Data (amounts in US\$ million)

	<i>Appraisal estimate</i>	<i>Actual or Current estimate</i>
Total project costs	47.1	43.6
Loan amount	28.3	40.15
Cofinancing	10.1	6.5
Cancellation	-	1.9
Date physical components completed	12/31/1994	12/31/1995
Economic rate of return	56%	19%

Cumulative Estimated and Actual Disbursements

	<i>FY89</i>	<i>FY90</i>	<i>FY91</i>	<i>FY92</i>	<i>FY93</i>	<i>FY94</i>	<i>FY95</i>	<i>FY96</i>
Annual Appraisal Estimate		5.8	12.5	13.3	5.0	0.4		
Cumulative Appr. Estimate		5.8	18.3	31.6	36.6	37.0	37.0	37.0
Annual Actual	2.4	4.8	9.7	8.1	4.2	1.2	4.3	2.3
Cumulative Actual	2.4	7.2	16.9	25.0	29.2	30.4	34.7	37.0 ^{1/}
Cum. Actual as % of Estimate		124.1	92.4	79.1	79.8	82.2	93.8	100.0

^{1/}In US\$ terms, the credit amount was fully disbursed. The higher US\$ amount at project completion was due to a higher value of the SDR during the last years of project implementation.

^{2/}Final disbursement took place on November 15, 1996. US\$2,679,624.00 remaining undisbursed were canceled on that date.

Project Dates

<i>Steps in project cycle</i>	<i>Date planned¹</i>	<i>Date actual</i>
Identification		December 1987
Preparation	June 1988	June 1988
Appraisal	October 1988	December 1988
Negotiations	January 1989	February 1989
Board presentation	May 1989	May 11, 1989
Signing		August 4, 1989
Effectiveness	November 1989	February 21, 1990
Project completion	December 31, 1994	December 31, 1995
Credit closing	June 30, 1995	June 30, 1996

Staff Inputs (staff weeks)

<i>Stage of project cycle</i>	<i>Actual</i>	
	<i>Weeks</i>	<i>US\$</i>
Through appraisal	54.8	90,681
Appraisal-Board	29.9	58,568
Board-Effectiveness	-	-
Supervision	109.2	304,357
Completion	6.0	20,000
Total	199.9	473,606

Mission Data

Stage of project cycle	Month/year	No. of persons	Staff days in field	Specialized staff skills represented	Performance rating ¹		Types of problems
					Implementation status	Development Objectives	
Through appraisal	06/90	4		PTS, TE, HE, Cons	--	--	--
	09/90	1	21	Cons.	--	--	--
	10/90	3	3	PTS, TE, HE	--	--	--
	01/91	4	10	TE, HE, 2 Cons.	--	--	--
Appraisal through Board approval	06/91	5	8	TS, HE, PS, LGS, TE,	--	--	--
Board approval	02/92	3	4	TS, HE, PO	NR	NR	Initial summary
Board approval thru' effectiveness	06/92	3	5	TS, HE, PO	1	1	
Supervision 1	12/92	1	8	TS	1	1	--
Supervision 2	06/93	1	9	STS	2	1	Counterpart Fund
ARPP	08/93	--	--	--	2	1	Counterpart Fund
Supervision 3	11/93	1	20	STS	2	1	Counterpart Fund
Supervision 4	03/94	1	8	STS	2	1	Counterpart Fund
Supervision 5	07/94	1	7	STS	S	S	
Supervision 6	03/95	1	14	SME	U	S	Procurement
ARPP	06/95	--	--	--	U	S	Procurement
Supervision 7	12/95	3	11	SME, IE, labor-based Const.Spec.	U	S	Procurement
Supervision 8	2/96	2	3	EC, PO	--	--	Partial SPN
Supervision 9	6/96	2	18	SME, IE	U	S	Procurement
Mid-Term Review							
Supervision 10	02/97	3	13	PE, IE, Decntr. Spec.	S	S	Financial Covenants
Supervision 11	12/97	2	4	PE, IE	S	S	Financial covenants
Supervision 12	6/98	2	4	PE, IE	S	S	Financial covenants
Completion	11/98	3	4	PE, IE, EC	S	S	Financial covenants

a/ Key to Specialization

PTS = Principal Transport Specialist
 Cons. = Consultant
 TS = Transport Spec.
 IE = Infra. Engineer
 PE = Princ. Engineer

TE = Transport Engineer
 PE = Principal Engineer
 PS = Procurement Specialist
 STS = Senior Trans. Spec
 SME = Sr. Mun. Eng.

HE = Highway Engineer
 LGS = Local Government Spec.
 SIE = Sr. Infra. Engineer
 EC = Economist
 PO = Project Officer

b/ Key to Performance Rating

1 = Problem Free
 HS = Highly Satisfactory

2 = Moderate problems
 S = Satisfactory

3 = Major Problems
 U = Unsatisfactory

¹ 1 - Problem free; 2 - Moderate problems; S-Satisfactory

Road Administration and Decentralization

Figure 1 shows a generic road sector organization. The gist of the figure is that intersectoral coordination, policy-making and resource allocation occurs, or should occur, politically at the highest level: country or State. The road sector is managed vertically. Multisector projects are voluntary activities coordinated locally, not results from sector organization. With this broad principle—which some countries violate—there is a rich array of institutional configurations. The emerging trend, implied by the figure, is clear: decentralization, greater private sector and user participation, and predictable income from user charges.

Road sector organization

In some federally organized countries, the federal government not only funds the trunk roads but also is their owner, planner, and manager. This kind of sector organization is disappearing rapidly. The (federal) Ministry, as the representative of the general-purpose government, is responsible only for the mission, policies, goals, funding mechanisms, and regulation, but has no road management functions. The trunk road system is delegated to the states (provinces) so that there are two road owners: the state (a federal state or unitary) and the local governments, the municipalities. In some countries there is an intermediate level of (elected) government (such as the county in the United States), but this is uncommon or is declining in importance.

There will be, of course, federal (national) roads (NHS). For these roads the federal government sets the standards and arranges the funding mechanism (road fund, general fund, etc.). The state is responsible for managing the NHS and the state network, and may receive federal aid to do so. There is oversight. Part of that oversight, and a condition for funding, could be maintaining the NHS in a certain condition and the road information system, including road condition surveys. There can be other conditions for federal funding, such as statewide accident and traffic safety activities. Some unitary states have also organized their road administrations (approximately) this way—China, for example—but it is rare.

Road ownership and management

Principally, the state (province) is the owner of the public roads and the municipalities the owners of the local roads. Private roads (community roads) are increasingly owned and managed by the beneficiaries. These principal road owners establish road administrations (RAs) that make the long range and short range plans for the owners' road networks, ensure continuity with the NHS and each other, and manage them. Within a state, road management functions can be further decentralized—this is the trend—to the district offices of the state RA. Municipalities also have their RAs, which may only be departments of the public works organization, or they contract these functions with the state RA or even a private entity. In large metropolitan areas there can be multimodal and multijurisdictional coordinating and planning agencies.

Increasingly, there is competition in service delivery. Private sector producers design, build and maintain the roads. Competition will take care of differences in geology, geography, etc. and makes the allocation of resources between states and regions more transparent. For numerous reasons, many states and municipalities maintain a direct labor force for some activities of road maintenance and operations. Unmistakably, however, the trend is toward private sector delivery.

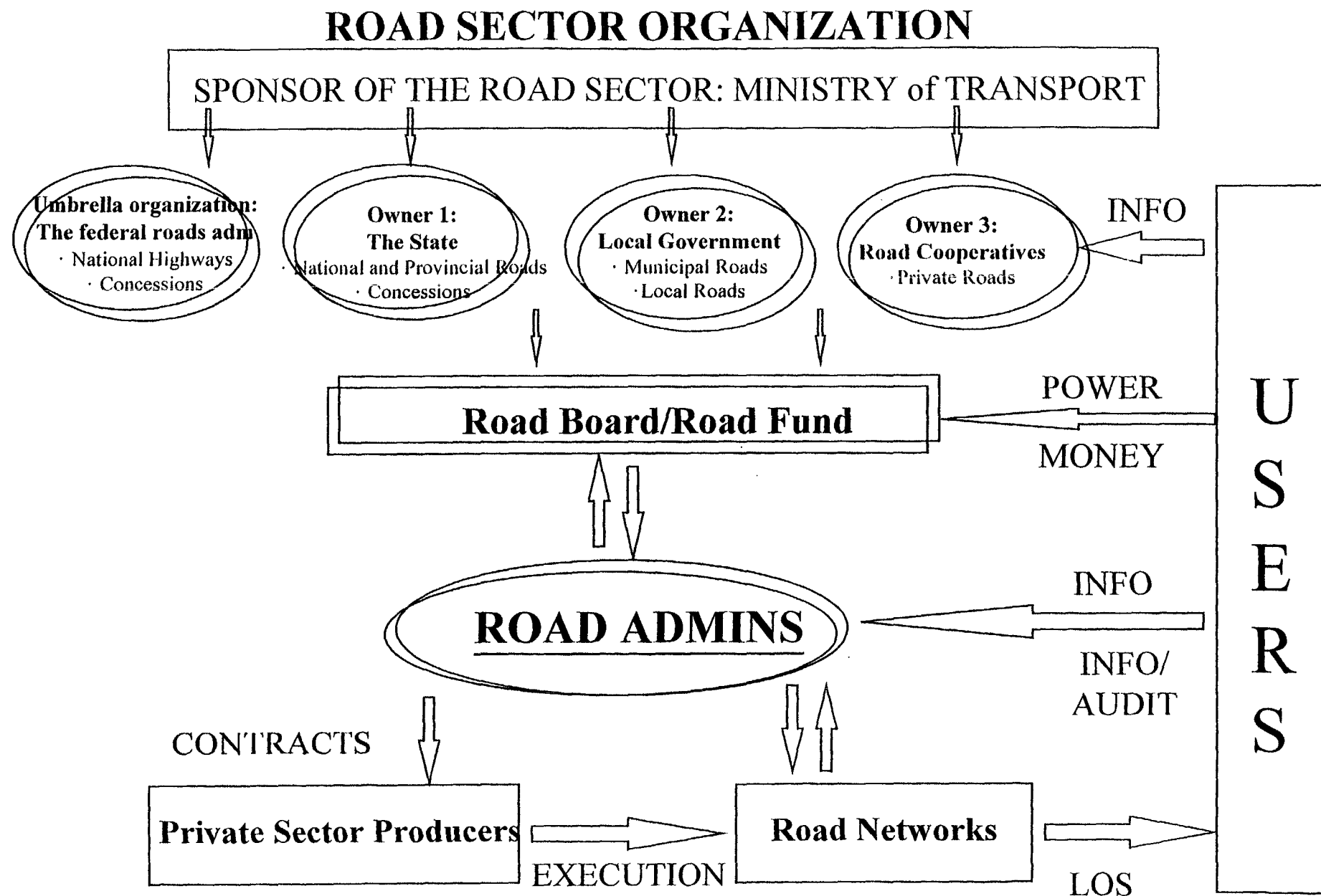
Road administration

The principal RA responsibilities are the management of roads and financing (given the source). As the agent of the road owner, RA must have the skills to communicate with a large number people—people affected by roads—to translate the road sector goals into a road plan, and the technical ability to program and implement the plan. In order to do this satisfactorily, the RA should be decentralized. Regardless of degree of decentralization, it must undertake numerous

activities: track and learn from the past, gather intelligence to understand the present, predict or project the future, coordinate, sponsor research and experiment with new technologies, and supervise the physical plan implementation process (Figure 2).

In financing, the principle of cost recovery enjoys broad acceptance. Because of regional differences, past policies or future goals and, importantly, if the gas tariff is the user charge mechanism, a representative body composed of the road owners and the road users allocates the funds between the road networks and regions. In the figure this is called "Road Board/Road Fund Board." In many countries, there is no "Road Board," but the ministry of Transport (or even several Ministries) or the RA perform that function.

FIGURE 1



"FRACTAL" ORGANIZATION

