

**TWU SERIES**

**THE WORLD BANK**



**Private Sector Development and Infrastructure**

**TWU-37**



**Transport Division**

**Decentralization of Road Network Management:  
Lessons from Bolivia and Some Ibero-American Countries**

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**Discussion Paper**



**DECENTRALIZATION OF ROAD NETWORK MANAGEMENT  
LESSONS FROM BOLIVIA AND SOME IBERO-AMERICAN COUNTRIES**

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**CURRENCY EQUIVALENTS**

Currency Unit	-	Bolivianos (\$Bs.)
LC \$B.1	-	US\$0.18
US\$1	-	LC \$Bs. 5.72 (Exchange Rate April 28, 1999)
SDR 1	-	US\$1.36202 (Exchange Rate Feb. 28, 1999)

**FISCAL YEAR**

January 1 - December 31

**ABBREVIATIONS AND ACRONYMS**

CAF	-	Andean Confederation for Development
CG	-	Central Government
CORDES	-	Regional Development Corporations
CVF	-	Federal Road Council
DA	-	Decentralization Act
DNV	-	National Road Directorate
DDV	-	Road Department Directorates
DGSV	-	General Directorate of the Road Sector
FINDETER	-	National Municipal Development Fund
FNCV	-	Rural Roads National Fund
GoB	-	Government of Bolivia
IBRD	-	International Bank for Reconstruction and Development
IDB	-	Inter-American Development Bank
INVIAS	-	National Institute of Highways
LOD	-	Organic Decentralization Law
MA	-	Ministry of Agriculture and Livestock
MOPT	-	Ministry of Public Works and Transport
MOT	-	Ministry of Transport
MTC	-	Ministry of Transport, Communications and Civil Aeronautics
NT	-	National Treasury
RCF	-	Road Cofinancing Fund
SAE	-	Equipment Administration System

### **ACKNOWLEDGEMENTS**

This paper arose from the initiative of Danny Leipziger, Director for Finance, Private Sector and Infrastructure for Latin America and Caribbean Region (LCSFP) and was prepared by José María Alonso-Biarge and Alexandra Ortiz (LCSFP) under the direction of the former. Quality control and overall supervision was provided by Jeffrey Gutman, Sector Manager of Urban and Transport (LCSFP). Peer reviewers were Graham Smith (ECSIN) and Aurelio Menendez (LCSFP). The paper benefited from discussions and meetings with transport and institutional specialists from the Bank. Contributions were received from José Luis Irigoyen (LCSFP) for the case of Colombia; Jacques Cellier (LCSFP) for the case of Brazil; Rafael Garcia-Alcolea (LCSFP) for the case of Chile; Juan María Compte for the case of Spain; the Bolivian SNC and six SDCs (central and departmental road agencies) and CONTEGRAL Consultora for the case of Bolivia; Deborah Bateman, Resident Representative in Bolivia provided general comments and Francisco Wulff (LCSFP) made specific contributions to the document. Administrative support was provided by Gladys Sakata (LCSFP). Special thanks are given to the Bolivian Vice Ministry of Public Investment and External Credit for the comments submitted on the final draft of the paper.

Washington, D.C., March 2000

**DECENTRALIZATION OF ROAD NETWORK MANAGEMENT  
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**EXECUTIVE SUMMARY**

*BACKGROUND*

1. Most countries in Latin America have undertaken decentralization processes over the last twenty years with the intention of improving the effectiveness and accountability of government. Transport and in particular roads, represents a difficult sector to decentralize because roads are an important part of a country's economy, are expensive to maintain, cross different jurisdictions and, for different types of roads, there are different management tasks and financing mechanisms. In Latin America the experience with road decentralization has been mixed, with some countries following more or less consistent and well-focused processes, while others have had to reverse some of the measures taken. One case we consider worth analyzing in more detail, given its characteristics and results, is that of Bolivia. There, decentralization took place very rapidly and aggressively, moving from a highly centralized system to one totally decentralized, although, from a political point of view, this process was not complete given that Departmental Government Heads (*Prefectos*), continued to be chosen by the President. During this period road management went into such disarray that it forced policy makers to undertake some partial recentralization reforms that affected almost exclusively the primary network. The entire process (decentralization and partial recentralization) did not affect the municipal roads that continued under the responsibility of municipal governments. Therefore, with respect to Bolivia, this study concentrates on the primary and secondary networks, and on the few tertiary networks that were under the central administration and were transferred to the Departmental Governments.

*CASE STUDIES*

2. The paper analyzes several cases of road decentralization in selected countries, in order to draw lessons of experience, and examine these in the Bolivian context. The analysis in this study is restricted to the road sector and does not include any evaluation of general aspects of decentralization such as political, economic and administrative or of democratic participation.

3. The cases included are: Colombia, Spain, Venezuela, Argentina, Brazil, Chile and Peru. These countries are representative of different combinations of overall political country structures and degree and pace of road decentralization processes. This extensive

- (iii) the reforms entailed by the decentralization process should be implemented gradually and flexibly, leaving time for adjustments along the way.
- (iv) the central government must be willing to invest important resources to back up the process and should be ready to take advantage of it in the context of broader administrative reforms.
- (v) management responsibilities associated to the roads to be decentralized and regulatory powers must be clearly defined among national, departmental and municipal governments and avoiding overlaps among these different levels of government.
- (vi) technical and administrative competencies should not be transferred without establishing sustainable financing mechanisms that correspond to national priorities and take into account the level of fiscal effort required at each network level.
- (vii) special attention should be given to the assessment of technical capabilities of the receiving institutions.
- (viii) an adequate information and monitoring system should be implemented to increase accountability of local authorities, to enforce national standards for quality and safety, and to have sufficiently accurate information so that corrections can be implemented in a timely manner.

### *THE CASE OF BOLIVIA*

#### The Situation before 1995

4. The Ministry of Transport, Communications and Civil Aeronautics (MTC) was the agency responsible for the management of the transport sector. One level below the MTC was the National Roads Agency (SNC), a semi-autonomous institution, in charge of both the national and departmental networks. SNC received funding mostly from government transfers and from toll collections. It was a very efficient agency at the beginning, but was affected by the economic and political crises in Bolivia in the late 70s and the 80s, and thereafter it lost efficiency and credibility. Despite its deficiencies SNC fulfilled adequately its technical and operational functions; it provided career development opportunities to its engineers and technicians; and it enforced technical standards and the periodic collection of information. In order to manage the national and departmental networks SNC had nine deconcentrated districts, one in each department.

5. In 1992 only 11% of the national and departmental networks combined was in acceptable condition. These roads had been paved in the 70s but their condition started

### Previous recommendations on road decentralization

6. Once road decentralization was included as part of the overall Bolivian decentralization agenda, the Bank prepared the following recommendations:

- The network should be reclassified in only two categories: national roads (8,000 km) and secondary and rural roads (33,000 km).
- National roads should be fully managed by the Central Government through SNC and its nine deconcentrated districts. Secondary and rural roads, to be financed with user charges and road tolls, should be under the responsibility of Departmental Governments through new agencies, Road Department Directorates (DDVs).
- SNC should also be in charge of regulating the sub-sector and of monitoring implementation of regulation throughout the country. The nine deconcentrated districts would be in charge of management and administrative functions as well as execution of works and road maintenance over the national network.
- Some staff should be transferred from SNC and its districts to the DDVs according to the reassignment of functions. Similarly with the equipment, buildings and work camps.

7. The GoB did not take into account these recommendations when embarking in the decentralization reforms, but has followed them, in general lines, in the subsequent process of partial recentralization.

### The decentralization process

8. In August 1995 the Congress of Bolivia approved the Administrative Decentralization Law, and later, through Decree 24215, it established the conditions for decentralization of the road infrastructure sector. Some of the resulting reforms were:

- The Ministry of Transport was reorganized as the National Secretariat of Transport, Communications and Civil Aviation, under the Ministry of Economic Development.
- SNC lost all of its functions, to be replaced by the Departmental Road Agencies, SDCs, under the Departmental Governments (*Prefecturas*). The SNC districts formed the basis of the newly created SDCs. Staff and equipment were reassigned from SNC to the SDCs.
- Although the law required the total dismantling of SNC, the agency carried its initial mandate with difficulties and delays, through the execution of on-going internationally



Governments. Instead, these budgets were fungible and applied to sectors in which political visibility was higher. The final result is that *prefectos* have great discretion over resources with little accountability of their administration.

#### Decentralization in Bolivia compared with the experience in other countries

9. In paragraph 6, we presented the conditions for a successful road decentralization process, based on several case studies. We will now revisit them in the context of Bolivia.

- (i) Decentralization of road management took place without an adequate level of local governance, in terms of legal, financial and political participation, and did not follow a gradual approach, with all responsibility over the national network transferred to the Departmental Governments (*Prefecturas*).
- (ii) The road network was not inventoried and classified before starting the decentralization process nor the classification of road functions was clearly related to the assignment of political responsibility for the roads.
- (iii) The reforms entailed by the decentralization process were neither implemented gradually nor flexibly, leaving no time for adjustments along the way.
- (iv) The central government did not invest the necessary resources to back up the process, and neither it nor the departmental governments (*prefecturas*) took advantage of the process.
- (v) Management responsibilities associated with the roads to be decentralized and regulatory powers among national, departmental and municipal governments were not assigned according to institutional capabilities and complexity of the network, and were not clearly defined.
- (vi) Technical and administrative competencies were transferred without establishing sustainable financing mechanisms.
- (vii) There was no adequate attention to the assessment of technical capabilities of the receiving institutions (SDCs) nor to the transfer of technology from SNC.
- (viii) The existing management/information systems were not properly maintained.

#### The primary network recentralization process

### *EFFECTS OF THE DECENTRALIZATION PROCESS IN BOLIVIA*

11. In this section, we analyze quantifiable effects that decentralization reforms had on technical, financial and administrative aspects of road management. To evaluate those effects a set of indicators was established. The evaluation was based on the results of a study carried out by a consultant firm, during the first quarter of 1999. Six of the nine SDCs were included in the review: La Paz, Santa Cruz, Cochabamba, Oruro, Chuquisaca, and Beni, which cover 76% of the national and departmental networks and 71% of the total road network.

12. Despite data limitations and the shortness of the decentralized period, the analysis of these indicators constitute the first approximation to establish a quantitative evaluation methodology for this type of processes. From the information gathered, it is possible to conclude that the decision of recentralizing the national network was justified and timely, especially because the departments holding the largest share of the national network had the worse road condition indicators.

### *CONCLUSIONS ON DECENTRALIZATION*

13. Decentralization of the road network management was far from successful in Bolivia. Two factors contributed the most to this outcome: (i) the transfer of primary network ownership and management to departmental agencies, in a country with only incipient political decentralization and thus inadequate level of local governance to assume the new responsibilities; and (ii) the accelerated pace of the reforms did not leave time to prepare appropriate transfer plans, including technical assessments and inventories, financial evaluations and arrangements, and institutional strategies.

### *EVALUATION OF THE PARTIAL RECENTRALIZATION*

14. In 1998, the Bolivian administration faced three general options for action regarding the situation of the road management: (i) they could put in place a special program to strengthen the decentralized system (which would have included a combination of technical and political actions); (ii) they could reverse the entire process and recentralize all road management responsibilities into a central government organization (or network of organizations); or (iii) they could recentralize only the national network and develop a program to strengthen the capabilities of the SDCs to manage the regional network. It is clear that with Decree 25134 the Government chose to proceed with the third option. This is a reasonable course of action, that at the end, may turn around the global result of the process. Most of the arguments to decentralize road responsibilities in 1995 were still valid

national network; (iv) the re-establishment in SNC of an environment unit with technical support to SDCs; and (v) the privatization of toll collection in the most important roads.

### ***RECOMMENDATIONS***

16. Based on the results of this study, the recommendations are:

- To strengthen the model of road administration that the GoB has implicitly adopted.
- To proceed with the restructuring of SNC as planned, consolidating its main functions.
- To establish for the departmental roads: (a) minimum safety standards; and (b) the conditions for funding of the departmental network with national resources.
- In terms of political aspects, to opt for either placing the *Prefecturas* under a national institution that could supervise and control them, making the reform much more of an administrative deconcentration or strengthen the decentralization model by allowing the popular election of *prefectos*.
- To create a Road Board or Council with the involvement of representatives of the SNC, the SDCs, and road users, for the purpose of intersectoral coordination and supervision.
- In terms of personnel: (a) to develop new policies in terms of human resources management, that would include hiring by open competition, appropriate compensation levels, provision of training opportunities, and re-establishment of professional and technical career tracks, among others; and (b) to accelerate the process of staff reintegration in SNC and SDCs according to those policies.
- To prepare, both at SNC and SDC levels, five-year plans for new investments and major rehabilitation properly backed up with cost and financing forecasts. In this sense we coincide with the recommendations made recently by the Bank in the last Public Expenditure Review.
- To undertake soon a financial study in order to assess whether the new function assignments to the SDCs can be covered with the proposed financial sources.
- Finally to study ways to optimize the public expenditure in roads, exploring the possibility of incremental private sector participation.

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**I. INTRODUCTION**

***Background***

1. Most countries in Latin America have undertaken decentralization processes over the last twenty years with the intention of improving the effectiveness and accountability of government by moving to regional and local governments the decision making over their affairs. Much has been learned from these processes, their pace, their necessary preconditions, and their difficulties. As the region reaches a stable stage in terms of decentralization, it is an appropriate time to document the various experiences in different countries and different sectors.
2. Transport, and in particular roads, represents a difficult sector to decentralize because: (i) roads are an important part of a country's economy and therefore their malfunctioning has severe effects in productive, commercial and tourism activities; (ii) roads are expensive to maintain, making sound management very important; (iii) the sector is complex, involving a combination of management tasks and financing mechanisms for different types of roads; and (iv) unlike other public services, roads cross different regions and jurisdictions, making a clear assignment of responsibilities by geographic areas a difficult task.
3. In Latin America the experience with road decentralization has been mixed, with some countries following more or less consistent and well-focused processes, while others have had to reverse some of the measures taken. It is still early to assess, with objective indicators, the effects that decentralization has had on road condition, access, and mobility in all the countries that have decentralized their road system, but the processes can be analyzed and lessons drawn.
4. One case we consider worth analyzing in more detail is that of Bolivia. There, road decentralization took place very rapidly, being implemented over a six-month period, requiring the dissolution of the central road agency and the transfer to departmental governments of new responsibilities without the proper financial, equipment, and human resources. The process, which is very recent, was not only very fast, but also very aggressive, moving from a highly centralized system to one totally decentralized. Nevertheless, in a strict sense, political decentralization was not complete given that Departmental Government Heads (*Prefectos*) continued to be chosen by the President. During this period road management went into such disarray that it has forced policy makers to undertake some partial recentralization reforms that affected almost exclusively the primary network. The Bolivian Government is trying to complete these reforms through a series of measures that will be discussed at length afterward. This process did not affect municipal roads, which continued under the responsibility of the municipalities. Therefore,

with respect to Bolivia, this study concentrates on the primary and secondary networks mostly, and on the few tertiary networks that were under the central administration and were transferred to the Departmental Governments.

### ***Scope of work***

5. This paper analyzes several cases of road decentralization in selected countries, most of them in the Latin American region, and more specifically in South America, in order to draw lessons of experience. The paper centers on the Bolivian case for which a more detailed analysis is carried out. The specific objectives of the study are: (i) to identify key aspects for a successful road decentralization process; (ii) to assess the effects of the decentralization process on the management of the road network in Bolivia; and (iii) to analyze alternative courses of action in Bolivia to improve the present system, some of them already being implemented.

6. The paper starts by laying out basic ideas on decentralization and continues with a review of different forms of road network management. In the third section it includes the case studies and the lessons from these experiences, particularly as they apply to the Bolivian case. In the fourth section, the paper describes the road network in Bolivia and its decentralization and partial recentralization processes. The fifth section covers the effects of decentralization on the institutional, financial and technical aspects of the road system in Bolivia. The conclusions and some specific recommendations for Bolivia are included in the sixth and final section of the paper.

### ***Decentralization: definition and basic principles***

7. Before discussing decentralization issues, it is important to make some preliminary definitions. There are basically three systems for the delivery of public services nation-wide: (i) centralized systems, in which services are managed by a single national agency, usually through a ministry; (ii) deconcentrated systems in which functions are transferred to departmental and municipal branches of a central government agency, and the latter keeps control and full responsibility; and (iii) decentralized systems in which services are the full responsibility of departmental and municipal governments. These organizational systems usually reflect the broader political organization of the country.

8. Decentralization is the process of moving from centralized or deconcentrated systems to decentralized systems of service delivery. It is an important step in the consolidation of a democratic process as it entails devolution of responsibilities to local levels and brings the decision making process closer to the affected citizens. It is therefore a political step that is decided and implemented on the basis of political criteria. Ideally, technical, social and economic aspects should also be part of the decision making process, but frequently they are overlooked.

9. Another important message is that decentralization processes are complex and require significant resources to implement them.. Although they promote efficacy, they do not necessarily increase efficiency, as will be illustrated later on. Nevertheless, the costs of

decentralization can be assumed by governments if an analysis of the process shows that, in the overall, it will result in an improvement in the quality of public good provision.

10. Decentralization is not an end in itself but a means to achieve better service delivery. There are countries with high degrees of centralization and high quality in the provision of public services and countries in which the reverse is true. There are also highly decentralized countries with a high quality of services and others in which service delivery is of bad quality. It all depends on whether the selected system is compatible with the country's characteristics and an adequate process design. Then the decision process must have two stages: first, whether to decentralize or not, and second, if the decision is to decentralize, how to do it best. In this case there are key aspects to consider: (i) using the right decentralization level for the country; (ii) decentralizing at the right time and pace, and (iii) decentralizing with a consistent work plan. This paper will provide evidence on the importance of these three aspects in the case of decentralization of road network management.

11. In the road sector, decentralization entails the devolution of management and financing responsibilities over specific roads to sub-national levels of government. This process takes place within an overall political structure of the country. These variables, types of roads, management tasks, financing mechanisms, levels of government, and country's political structure can be combined in many different ways, making road decentralization processes difficult to set up and analyze. Consequently, in the next section we will devote some time to explain these variables.

## **II. DIFFERENT FORMS OF ROAD NETWORK MANAGEMENT**

### ***Road classification***

12. Roads are usually classified in three levels: (i) national or primary roads connecting capital cities and serving as the main linkages to other countries, the sea, and other strategic points; (ii) departmental, provincial, regional or secondary roads, connecting regions within the country; and (iii) municipal, local or tertiary roads, connecting towns within one province. Tertiary roads are further subdivided in rural and urban roads. In practically all countries there is an equivalent classification to this one. In this document we refer mainly to primary and secondary networks.

### ***Management tasks***

13. Management tasks can be grouped in four categories: (i) planning of road investments, including the definition of future network requirements and their prioritization, re-classification of the road networks, and evaluation of operational tasks; (ii) rehabilitation and construction of roads, including engineering design, contracting and supervision of works; (iii) operation and maintenance of roads; and (iv) formulation of policies and regulations. For all three network levels these four management tasks ought to be performed.

### *Financing mechanisms*

14. The menu of financing mechanisms is usually limited to three options: (i) budgetary resources including block grants, matching grants and earmarked resources; (ii) road funds financed through the assignment of user charges, mainly fuel tax collections; and (iii) tolls. These options can be combined differently depending on the management task and road level.

### *Levels of government*

15. There are basically three levels of government, although in each country there might be variations: (i) the national government, which for road management purposes is usually represented by a transport or communications ministry, but also by autonomous and semi-autonomous agencies; (ii) the departmental or provincial government that can either have a road division within its administrative structure or a separate but subordinate road agency; and (iii) the municipal government for which road arrangements vary depending on the size of the jurisdiction.

### *Political country structure*

16. As was mentioned before, the organizational system of road network management depends to a large extent on the political structure of the country. In centralized countries there is no more than deconcentration of network management tasks, notably operations and maintenance, but planning, regulation and financing remain with the central government. Examples are Chile, Peru, and most of the countries in Central America and the Caribbean. Arguments in favor of this scheme are: (i) reduced size of the country or concentration of the population in a reduced area; and (ii) unequal distribution of skills in the country.

17. In decentralized countries there is a variety of schemes depending on the levels of political autonomy. Countries with moderate degrees of political autonomy have usually decentralized functions over the departmental network, but continue to have full central control over the national network. An example in Latin America is Colombia.

18. In countries with federal structure, the departmental network is the full responsibility of the provinces, states or departments. The operations and maintenance and the rehabilitation and construction functions pertaining to the national network might also be fully decentralized, while the central government maintains the planning, financing and regulation functions. Cases are: the US, Argentina and Brazil.

## **III. CASE STUDIES**

19. The country's political structure and the degree of overall decentralization are determinant variables, not only of the organizational system of road network management, as discussed above, but also of the path and pace of road management decentralization processes. These aspects determine the institutional capacity to undertake sectoral

decentralization reforms. Consequently, in this paper, the case studies are classified in three groups:

- (i) Countries in which the decentralization of roads takes place more or less simultaneously to that of other sectors and in which decentralized institutions do not exist and have to be created along the process. In these cases the decentralization process may be gradual or not. We will distinguish two types of gradualism: (a) vertical, in which the local and regional networks are decentralized first, then the process consolidates and lastly considers the treatment of the national network; and (b) horizontal, in which the process starts with selected states or regions as pilot cases, develops country-specific mechanisms and then implements the country-wide initiative. Decentralization with different levels or gradualism include the cases of: Spain, which implemented its road decentralization with vertical and horizontal gradualism, Colombia, which followed only vertical gradualism, and Venezuela and Bolivia, which implemented their road decentralization with no gradualism at all. In the case of Venezuela, however, other sectors had already been decentralized, providing some expertise to the government.
- (ii) Countries with political federal structure in which federal states have full autonomy and strong institutions and where decentralization of secondary and tertiary networks has been consolidated, making it possible to consider delegation of national network responsibilities. The cases here are Argentina and Brazil.
- (iii) Countries that are at the other end of the spectrum, with highly centralized structures in which road network management has only been deconcentrated. Chile and Peru are included here.

20. The paper covers in depth only group: (i) because it has higher relevance in the analysis of the Bolivian case. Groups (ii) and (iii) are only briefly referenced in order to provide a complete framework. This section benefits from the experience of completed and on-going World Bank-financed projects in Colombia, Venezuela, Brazil, Argentina, Peru and Chile and from existing material documenting the Spanish case.

### ***The case of Colombia***

21. The case of Colombia is analyzed in more detail, particularly because Colombia has a similar size to that of Bolivia and is located in the same sub-region. Moreover, the political decentralization process that was envisaged in Bolivia has some similarities to the Colombian process. In both countries the political decentralization started with popular election of mayors only. In Colombia this took place in 1986. Governors, the heads of Departments, were appointed by the President until the constitutional reform of 1991. Although the road network decentralization in Colombia had a consistent plan of reforms, it has yielded mixed results.



### Background

In Colombia, the Ministry of Public Works and Transport (MOPT) had been traditionally in charge of managing the primary and most of the secondary road networks. Departments were in charge of managing a small portion of the secondary roads. The Rural Roads National Fund (FNCV), an autonomous agency with representation of MOPT in its directory, was in charge of most of the tertiary (urban and rural) network. As the country moved towards a more decentralized system in the 80s, the road network management experienced many changes.

The Law 14 of 1983 marked the beginning of the decentralization process by granting municipalities with greater revenue raising powers. In transport, the first step was taken through Decree 77 of 1987 that assigned to municipalities responsibility over the urban roads, part of the tertiary network. At that time it was agreed that FNCV would continue to manage the rural roads and would be gradually transformed into a road co-financing agency in charge of securing the contribution of local and regional governments in the form of budgetary transfers, labor, equipment/materials, or services (engineering designs, supervision).

### Political reforms

In October 1990 an inventory and classification of the road network were undertaken by MOPT and FNCV as a first step to clarifying responsibilities for road sector management. Under such classification, there were 64,864 km of primary and secondary roads and 49,300 of tertiary roads, of which 23,000 under FNCV's responsibility. Later, these inventories became key tools at the time of planning the transfer of roads to subnational governments.

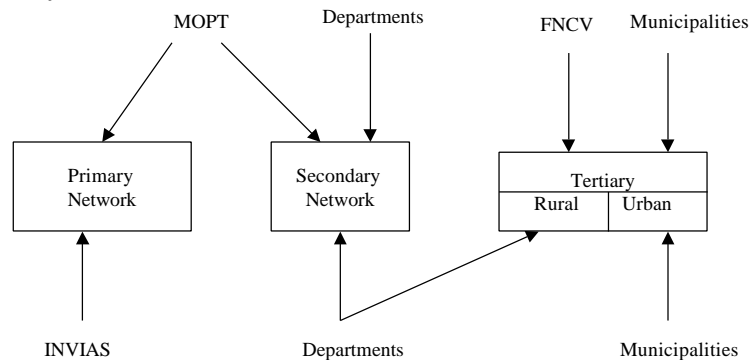
Decree 2171 of 1992 restructured MOPT into a Ministry of Transport (MOT), with regulatory and planning functions, created the National Institute of Highways (INVIAS), with execution and maintenance functions, and slated FNCV for liquidation by the end of 1995. In this process around 10,000 employees from MOPT were removed in a 3-year period through a program that provided incentives and training for the creation of small enterprises, including maintenance enterprises. MOPT's machinery was sold to the small enterprises of the program.

The Transport Law of 1993 passed on to the departments responsibility over a substantial part of the road network, namely, 13,000 km of secondary roads under former MOPT and all rural roads under FNCV, in total about 32% of the road system, together with the resources needed to maintain and improve those roads. To this end, the Nation had to agree with each department on a plan to gradually transfer such responsibilities and resources within a three-year period, starting in January 1994.

The Transport Law also established a new Road Cofinancing Fund (RCF) under the National Municipal Development Fund (FINDETER) to substitute FNCV's cofinancing activities. RCF was to pass matching grants, exclusively for roads. The law also required the setting of road user-charges to fully recover infrastructure maintenance, operation and development costs, and gave ample powers to the departments and municipalities to charge tariffs, tolls, betterment levies and even surcharges on gasoline taxes exclusively for transport infrastructure financing. It also provided the basic framework for franchising infrastructure facilities to the private sector.

Finally the Transport Law allowed the departments to restructure their road agencies, including the possibility of establishing autonomous private/public entities with capacity to raise their own financing (i.e., bonds issues, loans).

*Before decentralization*



*Intended after decentralization*

### Implementation

Although the reforms in Colombia were under discussion over 1991-92, it appears that many of the modernization decrees issued in 1992 were prepared at the last minute to comply with the Constitutional deadline, without extensive involvement of the institutions affected. This resulted in implementation problems during the transition period. Key elements of the reform needed further legislation, because the Constitution had not empowered the Executive Branch to redistribute competencies among the central, regional and local levels of government.

### Institutional aspects

FNCV's qualified and experienced staff, following the decision to eliminate the agency, departed as better opportunities became available for them in public and private agencies. By mid-1995 FNCV's staff totaled about 160 officials from about 1,750 in 1992, but, on the other hand, 16,000 km of roads still remained under its responsibility and only 7,000 km had been transferred to the departments. With its reduced staff, FNCV was unable to manage properly the network that was still under its jurisdiction. The three-year time frame established for liquidation of FNCV proved also too short to develop the new cofinancing system that was intended to replace FNCV.

This situation led to questioning in Congress, in late 1994, on whether the liquidation of FNCV should proceed as initially planned. Finally in June 1995, Congress approved the Law 188-95, which suspended the liquidation of FNCV and its transfer of roads to the departments. It was not until December 1995 that the decrees (2128 and 2222) reorganizing FNCV were passed. The functions of FNCV were redefined as cofinancing construction and maintenance activities on rural roads not yet transferred to the departments and evaluating the administrative, financial and technical capacity of the departments before passing responsibility over the rural roads.

The decision to pass FNCV's road network on to the departments and not on to the municipalities was taken on account that most of the municipalities were too weak to receive them and too many (more than one thousand) to efficiently manage the transfer.

Although this simplified the transfer, it also resulted in an unclear definition of jurisdiction.

The decentralization framework required, in different ways, that municipalities worked together with their departments. Departments had coordinating, monitoring and assisting roles to play. However, with the exception of a few departments, there is still a significant gap between this proposed role and the observed reality. Furthermore, many municipalities have either confrontational or distant relationships with the departmental government.

#### Financial aspects

The network inventory and classification prepared by MTC and FNCV in 1990, as well as the agreements to transfer responsibilities prepared in 1992 fell short in addressing the financing issues associated with each network. Thus, the transfer of roads turned into protracted negotiations with the departments over the control of the resources associated with it, instead of focusing on building capacity through some time-bound programs. Many departmental governments expressed concern that the level of funding that would become available through the RCF would not match the expanded responsibilities.

#### Lessons learned

The case of Colombia proves that, in furthering an agenda for road decentralization, the following elements are key to the sustainability of the ongoing programs and project investments:

- Decentralization of secondary and municipal networks as a first step in the process of reform has contributed to the clarification of the roles and responsibilities of the various levels of government, directing political attention from each level of government to the corresponding network level. Thus, the first positive impact of decentralization of regional and municipal roads is that it serves to keep local politics at the local level, thus protecting the national network from political pressures that tend to divert resources and managerial attention to issues that are not of national importance.
- Reform processes do not immediately produce all the intended results. However, they open the dialogue to continue the reform and allow permeation of “cultural” change, assuming that commitment to the reform is steadfastly sustained. It is not enough to pass legislation, it is also necessary to internalize strategies and concepts and this entails time.
- Last minute approval of legislation and the lack of an integral strategy to support the changes --in a country with notable capacity for innovation but with a weaker record in implementation-- lead to few initial results. Political considerations may force quick, radical changes, even without a sound implementation strategy in place but the risks of delays, and even reversals increase substantially, and may jeopardize the achievement of the objectives of the reform.
- Responsibilities between the central and decentralized institutions, and between departments and municipalities must be clearly established. Decentralized entities should have more access to technical and institutional support. With some notable exceptions, most of the departments and local governments in Colombia not only needed to build up capacity for road maintenance but also to ingrain a culture of “continuous” maintenance.

- Improved financial mechanisms must be clearly defined in advance of the implementation of reforms to ensure that funding will be adequate at all levels. These mechanisms should be implemented in parallel with the other reforms and with the objective of reducing the existing dependence on intergovernmental transfers. The sustainability of the new cofinancing system requires addressing the institutional weakness of most of the departments and strengthening the relationship with their municipalities, in order to position them adequately to play the role of partners and enablers of local efforts.
- An adequate information system should be implemented for increased accountability. Urban road construction and maintenance are areas in which municipalities had been very active since the beginning of the decentralization process. However, no systematic information was available regarding the coverage of these services or the outcome of such initiatives.
- A three-year period was too short to develop the capacity of those who were going to replace FNCV. It takes time until local governments fully assume their responsibility for road maintenance and the principle that maintenance should be provided on a continuous basis. In retrospect, the outcome would have been better had the reform mandated a more gradual liquidation of FNCV or focused on a new role for FNCV, consistent with the new decentralization policies. The dismantling of FNCV started without having in place adequate financing mechanisms and the institutions that would take over its responsibilities.

### ***The case of Spain***

22. Spain is another interesting case of road management decentralization that went parallel to an overall political and administrative decentralization in the country. It was a well paced process that has yielded positive results so far. The Spanish experience is relevant for Latin America due to the historical similarities in legal and regulatory frameworks and the strong ties that Spain has with the region in political and commercial aspects.

#### Background

Until the 1980s the organization of the road network management was highly centralized in Spain. The national network was the full responsibility of the central government through the Ministry of Public Works (MOP). This administration was deconcentrated in 52 provincial highway directorates (*Jefaturas Provinciales de Carreteras*). The provincial directorates were mostly in charge of the maintenance and rehabilitation works while the central government kept control of the planning, financing and new construction activities. In the mid 60s the central government created regional highway services (*Servicios Regionales de Carreteras*), that were in charge of preparing projects, supervising important works and controlling quality in several provinces. These regional directorates were created as an intermediary step between the Ministry and the provincial highway directorates, and represented an important step towards deconcentration.

Part of the secondary network depended of the central government as well, and was administered by the provincial directorates, just like the national network. But a substantial portion of the secondary network was already decentralized to the autonomous provincial councils (*Diputaciones Provinciales*). Each council had total independence to determine its administration, but ultimately they reported to the Ministry of Interior for administrative matters. Technical ones were inspected by the MOP.

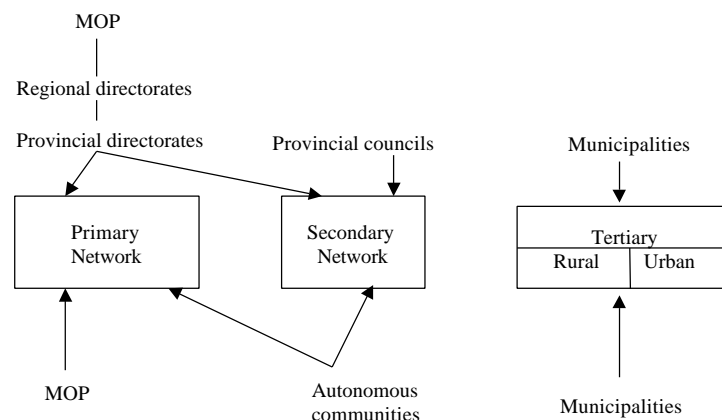
### Political reforms

In 1978 the Government of Spain approved a new constitution that established a parliament-based monarchy. The country was divided in 17 regions to be governed by autonomous communities (*Comunidades Autónomas*) and that could even be considered as nations within a nation. The decentralization of various sectors started in the early 80s, with education, urban affairs and roads being the leaders. The transfer of responsibilities was made in a gradual way and was different for each autonomous community depending on their capabilities and eagerness to undertake them.

The provincial highway directorates disappeared. For each newly created region, if it only had one province, the provincial council was merged with the autonomous community, and in the opposite case both agency levels continued existing in parallel, managing independent sets of roads. The latter has been the case in nine of the regions, but these are trying to unify road management in the autonomous communities, in spite of the fact that these agencies are sometimes led by different political parties, which makes the merge difficult.

In the case of highways, the central government maintained ownership of about 20% of the national roads that were considered strategic, either because they integrate Spain with neighboring countries, or link major capital cities, or provide access to ports and airports. The remaining 80% of the national network as well as the secondary network that was under national control were transferred to the autonomous communities.

*Before decentralization*



*Intended after decentralization*

### Implementation

In each region the central government formed commissions with representatives of the Ministry of Public Works and the autonomous communities to analyze and discuss the transfer conditions. This allowed a great deal of negotiation. At the end of the process, the central government, with participation of the corresponding commission, prepared a transfer decree that specifies the kilometers, services, equipment, and human resources transferred. Each item was carefully quantified. The central government, in prevision of this process, created a special budget item to cover all administrative costs related to the transfer.

The negotiation process determined the transfer arrangements based on a simple formula that combined only two variables: the area and the population of the region. After the first cases took place, some regional differences were considered excessive. The central government created then a compensation fund, to be fed by the autonomous communities that clearly gained in excess in the process, to compensate other communities as needed. The compensation fund had participation of both the central government and the autonomous communities.

In general the autonomous communities made efforts to improve the condition in the network that was transferred to them, eventhough this network was notably in worse condition than the one that remained under central control. As in the case of Colombia, the central government, freed from responsibility over a substantial number of roads, was in a better position to concentrate its resources on the national network. As a result, it invested in the improvement and enlargement of its roads, and contracted with the private sector for comprehensive maintenance that includes standard maintenance plus user services, safety and emergencies. Some of the autonomous communities have replicated these contracts.

In financial terms, the central government established specific budget items to feed the budgets of the autonomous communities. In addition, the central government transferred some taxes to the autonomous communities but, at the beginning, these were modest in comparison to the new financial needs. The autonomous communities, in order to supplement these two sources of funds, created semi-public agencies to which they transferred a portion of their road budgets and assets. These agencies have the capacity, to raise their own financing and even to borrow money commercially. They are in charge of the execution of new works, and in some cases even of maintenance.

### Lessons learned

- By having part of the secondary network already decentralized and the entire national network deconcentrated, Spain had already paved, with enough time in advance, the way towards road decentralization.
- Since the decentralization process was phased sector by sector (vertical gradualism) and region by region (horizontal gradualism), there were no strict rules for the transfer of road responsibilities, rather these were tailored to each case, albeit following some basic principles to ensure consistency and fairness. The transfer process was improved over time as the central government gained experience in the process.

- The central government invested in time and money to make sure that the process was fair to the regions and that the complementary transfers of equipment, human resources, and funds were appropriate in each case. It understood that there was an opportunity to improve the overall management of the network and therefore it invested on it.
- Every decentralization process creates more layers of administration and necessarily more conflict over the management decisions. Political interference necessarily increases. This is a trade-off that comes with decentralization and is unavoidable. Spain dealt with it successfully by providing “on-the job-training” to the autonomous communities through the negotiation processes. This assistance helped in the evolution by which the autonomous communities undertook their new challenges.

### *The case of Venezuela*

23. Venezuela is an interesting case of a recent and drastic decentralization that was implemented, like in Bolivia, in a relatively short period of time, with mixed results. In Venezuela, however, political decentralization took place before the decision to decentralize road management was implemented, and although weak in most cases, there were pre-established decentralized institutions. Two road projects, financed by the World Bank and the Inter-American Development Bank, were instrumental in strengthening the participation of states in the execution of road works. To participate, the states had to sign agreements with the Transport Ministry, defining clearly the responsibilities of each party. Both international banks effectively supported the technical, institutional and financial structures of the states making effective the decentralization.

#### Background

Before the Decentralization Act of 1989 the management of the entire road network was highly centralized in the General Directorate of the Road Sector (DGSV) under the Ministry of Transport and Communications (MTC). Most expenditures on roads were made by the central government, with the exception of the urban roads, which were the responsibility of municipal governments. The small investments made by the state governments were generally made in coordination with and co-financed by MTC, or, for a small part of feeder road investments, by the Ministry of Agriculture and Livestock.

Highway construction and maintenance programs were generally prepared centrally, and were funded (to the level of 90% of total expenditures) through annual budget allocations from the National Treasury. In some cases, and without much planning, the states allocated a small portion of their resources to the financing of centrally-designed and programmed highway investments. States' financial contributions to feeder and local access road investments were more significant (about 30%), but feeder road programs were also decided centrally. This situation resulted in: (i) less than efficient road programs, giving higher priority to new road construction at the expense of maintenance of the existing networks; (ii) poorly designed rural road programs with little consistency with the needs of local communities and with agricultural development objectives; and (iii) largely unpredictable budget allocations which have hampered the appropriate planning and programming of expenditures and the effective management and maintenance of the networks. In the early 90s, however, there was great awareness of

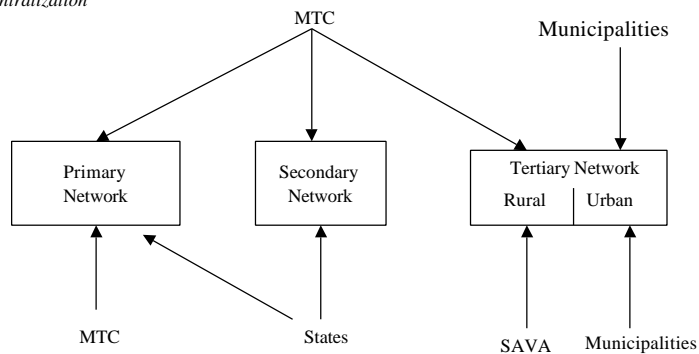
these problems and of the need to improve the maintenance and to decentralize the management of the road system.

#### Political reforms

In 1989 the Organic Decentralization Law (LOD) was approved. It distinguished between two types of competencies in terms of road management functions: exclusive competence of the central government, the states or the municipalities, and joint competence between the central government and the states and between the states and the municipalities. Until the recent approval of a new constitution (December 1999), one exclusive competence of the central government had been the new construction on the national network. In complement to the LOD, the government issued the Decentralization Act of 1989 (DA), setting out its commitment to reform the highway administration. The DA established that: (a) states could have exclusive or shared competence for all primary and secondary roads and bridges in their territory; (b) the transfer of competence would take place through agreements between the central and the state governments; and (c) states would annually prepare coordinated plans for investments, which had to consider the specific amounts that would come from the central and local budgets. These conditions distinguish the case of Venezuela.

In addition, feeder and local access roads were transferred to a newly created Autonomous Service for Agricultural Roads (SAVA). National as well as regional and local committees, with representatives from the state and local governments, were established to decentralize feeder and local road expenditure decisions.

*Before decentralization*



*Intended after decentralization*

The road decentralization program, as conceived, included the preparation and implementation of a plan to gradually decentralize the maintenance of the road networks, in accordance with the 1989 DA. The general policy was to transfer expenditure responsibilities as well as financing, personnel and equipment to the states as these demonstrated the capability to manage them efficiently. Once the central government started implementing some elements of the DA, some state governments showed more interest in assuming highway maintenance responsibilities, provided adequate funding were available, either through tolls or through transfers from the National Treasury.



## Implementation

### *Institutional aspects*

Contrary to the original intention, the Government did not: (i) establish the network of national interest for which the central government would retain some management responsibilities; and (ii) define a plan to share responsibilities and resources between MTC and the states for sections of the interstate highways. In addition, the transfer of human resources from the center was not welcomed by the states because it involved mostly senior staff close to retirement, representing a heavy load in terms of pensions. Similarly, the transfer of equipment was seen by the states as disadvantageous, since most of it required major repairs and high maintenance costs. As a result, several states did not accept the transfer and had to contract maintenance services without the necessary resources and preparation.

The MTC prepared a legal framework to transfer responsibilities for the construction and/or operation, maintenance and financing of expressways to the private sector. With the DA, however, the state governments, rather than MTC, had competence to establish the concessions. MTC therefore developed a model concession statute, including related regulatory evaluation and supervisory policies, mechanisms, criteria and methodologies. MTC has used this framework to prepare a road concession program of about 2,000 km of construction and reconstruction works of national highways. The first contract was for the Caracas-La Guaira motorway, which is having serious implementation problems, mainly political and social. The MTC offered this model to the states, under the decentralization program, for inclusion in the respective state laws. Some states have used this concession model for small maintenance contracts.

### Financial aspects

In terms of road financing and funding policies and systems, there were major problems. First of all, transfers from the central government fell short in comparison to the new responsibilities. This was due, in part, to the economic crisis in Venezuela and the competing priorities of the central government. Second, in the absence of regulation, state governments could impose fees and charges on road users and obtain sufficient income to maintain and operate them and leave a significant surplus. However, local authorities were reluctant to impose taxes for the sector due to the obvious negative political consequences and their expectation that the central government would provide the budgetary resources needed, given the overlap in responsibilities between levels of government. With respect to tolls, from the beginning, the interest of the states was clearly to assume their responsibility, with the incentive that these would generate substantial revenues. However, only a few states took over full responsibility for toll operation and maintenance and therefore progress in implementing the DA was very limited.

### Technical aspects

The government also failed to establish mechanisms to enforce appropriate policies, technical norms and standards at the decentralized level, in the national interest. Policy makers did not develop a plan to assist the state governments in establishing technical and management capabilities to carry out their responsibilities, and to transfer and/or reorganize the related technical services in MTC's state directorates.

### Highway management project

Despite the shortcomings described above, Venezuela had a Highway Management Project, cofinanced by the IBRD, IDB and the Andean Confederation for Development (CAF), that became instrumental in implementing the road decentralization program. An important objective of this project was to assist the government in strengthening highway management and although it was conceived at a time when the national and secondary networks were still centralized, it was restructured to support the overall road decentralization process.

Implementation of the project began in February 1995, but was stalled by wrangling over national vs. state responsibilities for road maintenance, counterpart funds not flowing to the implementing agencies, and the indifference of senior officials of the Ministry of Transport (MTC). The IBRD and later, the IDB, decided to involve the most prepared decentralized states in the project in order to improve project implementation and strengthen the decentralization process. The eligible states needed to: (i) have a certain level of administrative and technical capabilities, including adequate organizational arrangements, strong budget processes, and appropriate planning and monitoring mechanisms; and (ii) sign the decentralization agreements with the MTC, to define responsibilities, expenditure and financing arrangements, technical norms, standards and procedures, supervisory and monitoring arrangements, a timetable for the transfer of personnel and assets; and technical assistance and training.

Both banks played an intermediary role between the center and the states by ensuring that appropriate funds, coming from the loan, be channeled to the states. They also provided on-the-job training to develop the technical and managerial capabilities of the states that the central government was requiring to proceed with the transfer. A few states, with proper funding, and strengthened managerially, were in a better position to negotiate more favorable deals in terms of transfer of human resources and equipment.

After the co-execution agreements were signed by the selected states, a co-execution manual was prepared. Seven states signed agreements to this effect (Aragua, Barinas, Carabobo, Mérida, Miranda, Monagas and Yaracuy) and agreed with the MTC and the Bank on an investment plan 1997-2000 for each state to be financed by the loan. Likewise, other states signed similar co-execution agreements under the part of the project financed by IDB. So far, all selected states have completed bidding processes for civil works and supervision and have started, and even completed in some cases, construction of civil works. The next step is to determine the extent to which the remaining ten states can undertake this process. Some of them will still need an important central government support.

The project has become a decentralization project in the transport sector, and no longer a transport project as originally envisaged. The selected states have shown commitment and ownership, which thus far had been absent at the national level. The challenge at present is to develop a sustainable mechanism for the financing of road maintenance activities according to their priority and proportionate to the level of fiscal effort at each network level. The new administration, which took office in February 1999, prepared a new constitution approved by referendum in December 1999. This process might affect the road decentralization course. In principle, the new constitution extend the

competences of the states on roads but does not provide the corresponding financing resources or the means to collect them.

#### Lessons learned

The case of Venezuela shows that in countries with decentralized institutions and with strong second-tier governments the transfer of road networks requires a complex negotiation process. In order to facilitate these negotiations, it is important to keep in mind the following:

- Technical and administrative competencies should not be transferred without the corresponding financing mechanisms. The states were initially interested in assuming the new responsibilities but were discouraged by the disadvantageous deals that the central government was offering.
- Alternative financial mechanisms should be carefully studied in advance to assess their political and institutional feasibility and returns. If the states had had predictable revenues from their own taxes or from transfers of national taxes, the cost recovery picture for road maintenance would have been much different.
- The central government should retain some management responsibilities over the national network because national interests transcend state frontiers, at least until the decentralization of other network levels has been consolidated. In the case of Venezuela, the central government retained, rightly so, the new construction activities of the national network, but transferred some responsibilities on the national network such as planning, coordination and control, which should have been left with the central government. The impact of the direction taken by the new constitution in this matter needs to be carefully studied.
- The central government has an important role to play in the regulation and enforcement of technical standards for all networks. It should also provide technical assistance to the states, perhaps through an autonomous agency, in order to accompany them in the process ensuring that they learn as they implement the reforms.

#### ***Other cases in Latin America***

24. In the first part of this box we summarize the cases of Argentina and Brazil which correspond to the second group of countries, that is, those with a federal structure.

Argentina has a federal system of government, with 24 provinces. The road network of the country is classified in national, provincial and municipal roads. The National Road Directorate (*Dirección Nacional de Vialidad - DNV*) is responsible for the management of the national network, while each province has its own Provincial Road Directorate (*Dirección Provincial de Vialidad*) for the management of the provincial networks. Municipal networks, including urban and rural roads, are the responsibility of municipal governments. Each level of government is responsible for the financing of road maintenance and rehabilitation of its corresponding road network, with resources for this coming from general revenues and from the revenues generated by the application of road-user charges. Since a fuel tax is applied and collected at the national level, the

federal government transfers funds to provinces and municipalities according to a transparent formula agreed by all and monitored by a Federal Road Council (*Consejo de Vialidad Federal – CVF*). These transfers account for about 35% of the resources used by sub-national governments for roads, thus evidencing the high level of local ownership over the local road networks. Funds for the national network are provided from direct user-charges (tolls) and from the national government's general revenues.

Argentina's decentralized system of road management has been successful in ensuring adequate maintenance of the road network at the various levels. The division of responsibilities between levels of governments has been stable over the last ten years, as has been the financing of the sector. At the national level, there has been a clear trend towards increased use of private sector contracting for road maintenance. Current discussions in the sector center on the extent to which concessions can be used for the development of new roads, and on the sustainability of contracts with the private sector in the event of macroeconomic instability and external shocks.

Brazil's experience also shows that when a clear separation of institutional responsibilities is made and adequate financial mechanisms are put in place, the decentralization of road management results in improved road conditions. Brazil is also a federal system, organized in 27 states with strong traditions of regional government. In 1988, a new constitution gave ample powers to the states to raise their own taxes, including fuel taxes, consumption and vehicle taxes. Until then, most taxes had been centrally collected and then partially redistributed to the states (this included fuel and vehicle taxes, which were partly earmarked for roads and redistributed to the states through a formula). Earmarked funds were terminated. Expenditure responsibilities, however, remained unchanged. The state governments, now funded through their own consumption taxes as well as transfers from federal tax revenues (income and industrial taxes) have increased their revenues. However, with surplus labor and high debts combined with the disappearance of the inflation tax (after the implementation of the Real Plan in 1994), few states have had sufficient resources left for investments. Nonetheless, while important regional differences in institutional and fiscal capacity exist, the states have assigned a high priority to road maintenance and rehabilitation, as most of them have been able to raise adequate funds to meet the needs under conditions of important fiscal constraints.

This experience illustrates the complexities of decentralized road management. In Brazil, the granting of additional fiscal powers to the states was unrelated to the allocation of responsibilities for road management, even though one of the key new revenue sources (the fuel tax) is directly associated with road use. The National Roads Department (*Departamento Nacional de Estradas de Rodage*) remained responsible for over 67,000 km of federal roads, even though it had lost the significant revenues from the fuel tax. Between 1990 and 1997, however, the conditions of the federal network improved, reducing the number of kilometers of paved roads in poor condition from 30% to 11%. These improvements have been financed from the federal general revenues.

A recent review of the federal network based on road functions suggested that about 18,000 km should be reclassified as state roads. This is the next challenge for the road sector in Brazil. The states have shown interest in assuming responsibility for additional roads, but they have expressed concerns about the poor condition of the roads that are to

be devolved. There have also been occurrences of states abandoning portions of devolved roads after being unable to concession them to the private sector or to maintain them on their own. These situations emphasize how difficult it is to establish and maintain a clear classification of road functions while network responsibilities are under different levels of government. In the end, the challenge is to establish transparent financing mechanisms for road management (maintenance, rehabilitation and new investments) that correspond to the allocation of responsibilities across different levels of governments (the principle that “finance follows function”) and that provide the right incentives for the behavior of road agencies.

25. Finally, the cases of Chile and Peru are presented below. These correspond to the third group of countries, that is, those with highly centralized structures.

In Chile road management is totally centralized under the Road Directorate within the Ministry of Public Works. The Road Directorate is deconcentrated in thirteen Regional Road Directorates functioning in twelve administrative regions and one in the metropolitan region of Santiago. The creation of Regional Development Funds to channel resources of the national budget has given regional governments a high level of discretion over the assignment of funds among regional projects. In addition, since 1990 local governments have access to funds for sectoral investments emanating from the different ministries. These two funding mechanisms have increased regional government intervention in road management without affecting the competences of the Ministry of Public Works. On the other hand, Chile has been a leader in the region in terms of establishing concessions with the private sector. Therefore, even though road network management is institutionally centralized, the Government of Chile has created mechanisms to allow regions to participate in road planning and has allowed important private sector participation.

Peru has a highly centralized form of road network management. The primary and secondary networks are administered centrally by the Ministry of Transport through three entities: the Roads Directorate in charge of design, planning, new construction and maintenance; the National Highway Maintenance Agency with responsibility for conducting calls for bids and administering maintenance concessions for the paved highway system on the basis of tolls; and the Executing Office in charge of externally financed programs. The regional and local governments depend heavily on technical and financial assistance from the Ministry of Transport. Although all roads were transferred in 1984 to the recently established regional governments (including portions of the national network that had profitable tolls) the recurrent use of toll revenues for the financing of activities outside the road sector led to inadequate road maintenance practices and the decay of key portions of the national network. As a result in 1991, the national authorities decided to re-centralize the national network and in 1993 part of the regional network, as the National Government assessed that the regions were weak and the network deteriorated severely. Road conditions in key sections of the national network have improved since the re-centralization, but the majority of the roads are deteriorating beyond the capacity of the central Ministry to respond.

## *Conclusions*

26. There is not a perfect road decentralization model that could be used in every country. Particular arrangements work better in certain contexts, depending on the overall structure of the state, the strength of its local governments, and its regional development policies. Nevertheless some lessons, particularly on decentralization processes, apply to all cases and are critical to the success of a road decentralization program. Among them are the following:

- (i) Decentralization of road management can only take place where there is an adequate level of local governance, in terms of legal, financial and political participation. When there is little tradition of decentralized governance, a gradual approach to road decentralization should be followed, transferring first responsibilities for regional and urban municipal roads while retaining the management of the national network at the national level. This does not mean that political opportunities for decentralization should not be taken advantage in a speedy fashion, but that the implementation of the process must have appropriate safeguards to ensure success.
- (ii) The road network should be inventoried and classified before starting a decentralization process in order to ensure clarity in the extent of responsibilities as well as determine the appropriate transfer of resources; the classification of road functions should be clearly related to the assignment of political responsibility for the roads. Thus, municipal roads should be placed under municipal governments, state roads under state governments, and national roads under the national authorities. In the case of the national network the case is particularly compelling because national interests transcend regional frontiers.
- (iii) The reforms entailed by the decentralization process should be implemented gradually and flexibly, leaving time for adjustments along the way. In this sense, although not a prerequisite for decentralization, a first deconcentrated organization could be helpful to build the appropriate institutional capacity for further reforms. In addition, the establishment of negotiating commissions with representatives of both the central and decentralized entities to evaluate the competencies and resources to be transferred and of compensation mechanisms, to ensure a fair and balanced process in terms of regional development, have proven to be important factors for a successful decentralization.
- (iv) The central government must be willing to invest important resources to back up the process and should be ready to take advantage of it in the context of broader administrative reforms.
- (v) Management responsibilities associated to the roads to be decentralized and regulatory powers must be clearly defined among national, departmental and municipal governments according to institutional capabilities and complexity of the network, and avoiding overlaps among these different levels of government.

- (vi) Technical and administrative competencies should not be transferred without establishing sustainable financing mechanisms that correspond to national priorities and take into account the level of fiscal effort required at each network level; these mechanisms should be structured to reflect local commitment to road maintenance and development while allowing for cross-regional redistribution of resources in order to maintain national standards and network connectivity.
  - (vii) Special attention should be given to the assessment of technical capabilities of the receiving institutions, and the timeframe for devolution should recognize the need for the transfer of technology and the dynamics of capacity development.
  - (viii) An adequate information and monitoring system should be implemented to increase accountability of local authorities, to enforce national standards for quality and safety and to have sufficiently accurate information about the progress made and the difficulties encountered, so that corrections can be implemented in a timely manner.
27. These lessons will be revisited in section VI, in the particular context of Bolivia.

#### IV. THE ROAD NETWORK MANAGEMENT IN BOLIVIA AND THE DECENTRALIZATION PROCESS

##### *Brief description of Bolivia*

28. The population of Bolivia is of 7.8 million of which over a half is indigenous. Highly dependent on volatile prices for its mineral exports and experiencing periods of high inflation, Bolivia has remained one of the poorest countries in Latin America. Market-oriented reforms introduced at the end of the 80s and sustained throughout the 90s have contributed to recent improving of the country's economic conditions. Important reforms in terms of political decentralization<sup>1</sup>, popular participation in public decision-making, privatization, and the economic shift from minerals to non-traditional exports, have helped in the modernization of Bolivia.

29. Bolivia has 1.1 million square kilometers of land (slightly larger than France and Spain combined), divided in nine departments: La Paz, Cochabamba, Beni, Oruro, Chuquisaca, Pando, Potosí, Santa Cruz and Tarija. The country is landlocked with no direct access to the sea. It also has impressively high and rugged mountains. These characteristics give road transport an extraordinarily strategic role in the economic development of Bolivia.

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<sup>1</sup> It could be argued that, because administrative functions were transferred to Departmental Governments (*Prefecturas*) without popular election of the *Prefectos*, the political decentralization in Bolivia fell short of a true decentralization. However, the intention has always been to make full political, administrative and financial decentralization a reality. Calling this political process a mere deconcentration would not be exact either, because central government agencies, like the one for roads, were practically dissolved **and no institution remained accountable at the central level.**

30. In the past ten years, the Bolivian transport sector has witnessed important changes that have brought about reductions in the transport costs for externally traded goods and commerce. Nevertheless, Bolivia continues to face problems of constrained transport infrastructure which include (i) very low density, both in terms of long distances between cities and thinly populated rural areas, making the provision of transport infrastructure very costly on a per capita basis; (ii) dramatic changes in elevation that make construction and maintenance of roads unusually expensive; and (iii) the only access to the sea, so far, is the port of Arica in Chile.

***The case of Bolivia in the context of this study***

31. Bolivia belongs to the first group of countries that was defined in section III, i.e., it is a country in which the decentralization of roads took place simultaneously to that of other sectors like in Colombia, Spain, and Venezuela. Before the decentralization process, road network management was fully centralized in Bolivia. The country lacked solid institutions that could have led the decentralization process, and the existing ones had serious constraints in terms of human and capital resources. The initial scenario was weaker than that of Spain and Colombia, nevertheless the process in Bolivia was more ambitious, faster and less planned.

***The situation before 1995***

32. The Ministry of Transport, Communications and CivilAeronautics (MTC) was the agency responsible for the management of the transport sector. Traditionally, 25 to 30% of the total public investment program had been allocated to the transport sector.

33. One level below the MTC was the National Roads Agency (SNC), a semi-autonomous institution, in charge of both the national (also called fundamental) and departmental networks. SNC received funding mostly from government transfers and from toll collections. The latter were ineffectively and insufficiently collected.

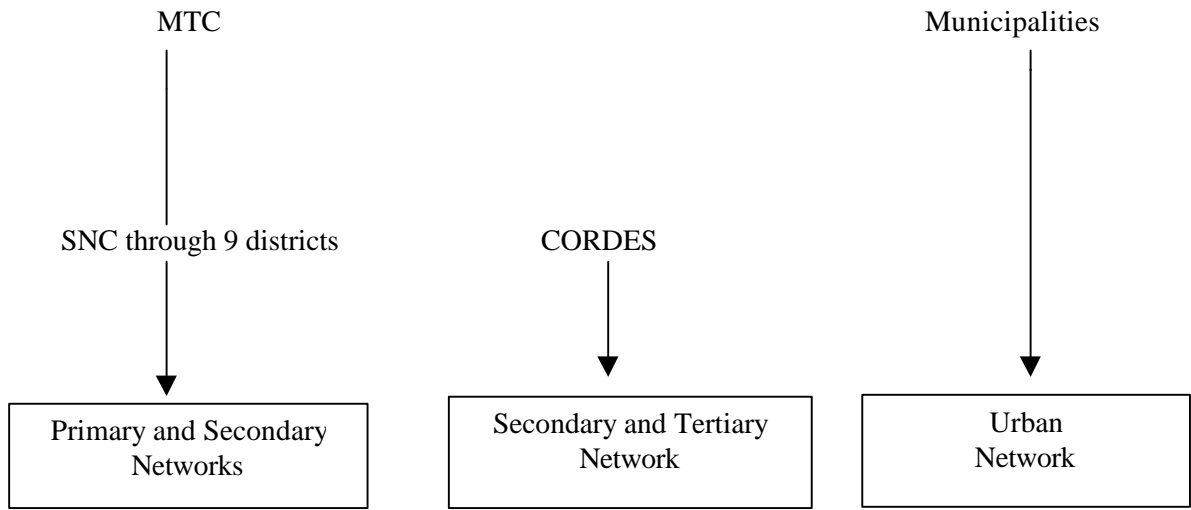
34. SNC was created in the 1960s with financial and technical assistance from the US Federal Highway Administration, following the model of a US department of transportation. Its first two directors were U.S. nationals. A very efficient agency at the beginning, it continued to be a model institution with good technical capabilities in the early 70s but was affected by the economic and political crises in Bolivia in the late 70s and the 80s. It became a politicized and bureaucratic agency and lost effectiveness and, at a later stage, credibility. Despite its deficiencies, SNC fulfilled adequately its technical and operational functions; it provided career development opportunities to its engineers and technicians; and it enforced technical standards and the periodic collection of information. SNC also managed to maintain a solid cadre of engineers and responsive groups of field workers even in the most remote areas of the country.

35. In order to manage the national and departmental networks SNC had nine deconcentrated districts, one in each department. SNC transferred human and capital resources to its districts, supervised planning and maintenance activities, performed annual



evaluations, maintained the equipment, provided technical training and reassigned resources among districts in cases of emergency.

36. The municipal network was managed by three groups of entities. First were the municipalities, in charge of the urban roads, second the Regional Development Corporations (CORDES) in charge of the tertiary roads that played a particularly important role in the commercialization of a sub-region, and the nine SNC districts in charge of all other tertiary roads.



37. The network condition (national and departmental) was classified, in 1992, as good or fair only in an 11%. Although the paved network had been built only in the 70s, lack of maintenance and no control over vehicle axle loads resulted in a rapid deterioration. In addition, maintenance activities received inadequate funding, and were further affected by government policies favoring construction over maintenance. The Bank's First Road Maintenance Project did not achieve its objectives as it coincided with the SNC crisis of the 1980s. The Bank's Second Road Maintenance Project (SRMP) was designed to reduce the large backlog of maintenance and to match maintenance budgets to real needs, optimizing investment decisions. This project has been successful in changing the emphasis of SNC towards a greater focus on maintenance. Unfortunately, the decentralization measures in the mid-nineties slowed down this process and affected the systematization of the maintenance activities.

### **Previous recommendations on road decentralization**

38. Once road decentralization was included as part of the overall Bolivian decentralization agenda, the Bank financed technical assistance to SNC for preparing detailed terms of reference to develop a plan for road decentralization. The recommendations for the decentralization plan were included in the Staff Appraisal Report of the SRMP (approved in 1992) as follows:

- The network should be reclassified in only two categories: national roads (8,000 km) and secondary and rural roads (33,000 km).
- National roads should be fully managed by the Central Government through SNC and its nine deconcentrated districts. Secondary and rural roads should be under the responsibility of Departmental Governments through new agencies, Road Department Directorates (DDVs).
- SNC should also be in charge of regulating the sub-sector and of monitoring implementation of regulation throughout the country. The nine deconcentrated districts would be in charge of management and administrative functions as well as execution of works and road maintenance over the national network.
- The DDVs should receive funds from user fees and tolls and would gradually introduce a maintenance system by contract.
- Some staff should be transferred from SNC and its districts to the DDVs according to the reassignment of functions. Similarly with the equipment, buildings and work camps.

39. The GOB did not take into account these recommendations when embarking in the decentralization reforms, but has followed them, in general lines, in the subsequent process of partial recentralization.

### ***The decentralization process***

40. Decentralization came suddenly. In August 1995 the Congress of Bolivia approved the Administrative Decentralization Law, and later, through Decree 24215, it established the conditions for decentralization of the road infrastructure sector. Some of the resulting reforms were:

- The Ministry of Transport was reorganized as the National Secretariat of Transport, Communications and Civil Aviation, under the Ministry of Economic Development. The new Secretariat faced many difficulties to become operative, particularly because: (i) its mandate was not clear; and (ii) it had to struggle in the political arena to obtain support for its new sectoral coverage, the decentralization process, and the privatization of certain of its enterprises.
- SNC, which had traditionally been in charge of the national and departmental networks, lost all of its functions, to be replaced by the Departmental Road Agencies, SDCs, under the Departmental Governments (*Prefecturas*). The SNC districts, which in the past functioned as the executing arms of the SNC and were accountable to it, formed the basis of the newly created SDCs. Staff and equipment was also reassigned from SNC to the SDCs.

- The SDCs became accountable to the head of the Departmental Government (*Prefecto*), appointed by the President of Bolivia. The fact that the *Prefecto* is appointed by the President means that the reform was incomplete (see footnote # 1), because regardless of how much autonomy the *Prefecto* may have, he or she is ultimately accountable to the President rather than to the local constituencies. However, the fact that the reform is incomplete does not mean it was purely an administrative deconcentration, since no central administrative institution remained accountable for the sector nor retained any competence.
- In the *Prefecturas*, the division for economic development was made responsible for planning both technical and financial aspects of the road network. The law also required the total dismantling of the SNC. The IBRD and the IDB, fearing that the projects they supported and the institutional capacity and management systems they had helped develop would be jeopardized, negotiated with the Government a partial reversal of the law whereby SNC would retain its legal status until the conclusion of internationally-financed projects.
- Many of SNC's experienced staff, including specialized engineers, left the institution. This factor, combined with the general shortage in the country of specialized experts, was detrimental to the institution, not only during the stage of transition, but later on, when the national network was recentralized and SNC revived. SNC's recently created environmental unit disappeared.
- For a long period of time, and before the SDCs were fully operational, SNC was left without an Executive Director. Under these conditions, SNC has carried its initial mandate with difficulties and delays, only through the execution of on-going internationally funded projects.
- In the decentralization process, the *Prefecturas* were given multiple new responsibilities at once, of which the departmental network and the corresponding sections of the national network (through SDCs) was only one. The entire network was transferred with limited resources. Besides, the *Prefecturas* were in charge of budget preparation, while the SDCs were responsible for the execution. The SDCs, given their financial constraints, had to rely on SNC's limited staff for guidance on maintenance practices.
- Although the *prefectos* remained accountable to the president, there was no mechanism for central control of the expenditures of sectoral budgets transferred to the *Prefecturas*. Instead, these budgets were fungible and applied to sectors in which political visibility was higher. The Ministry of Finance was unable to cut resources for any particular sector because this could affect all sectors and thus could be politically costly. The central government was left with little control and accountability measures over these budgets. This is again a reason why the process, not being a complete decentralization, can neither be considered an administrative

deconcentration. The final result is that, to some extent, *prefectos* have great discretion over resources with little accountability of their administration.

- There were also changes in the municipal network, as its management was transferred from the CORDES and SNC districts to the municipalities.

### ***The primary network recentralization process***

41. When, in September 1997, the new GoB discussed with the Bank the road investment program for the period 1998-2003, the difficulties of lending for improvements in a network that was no longer under the central government responsibility and with an implementation agency with no competencies in road activities, became evident. Besides, the *Prefecturas* were unable to get direct external financing. These constraints incentivated the GoB to start a program of recentralization of the national or fundamental network and restoration of some of the previous SNC's roles and competencies.

42. The result was that, in August 1998, the GoB approved the Decree 25134 reversing some of the decentralization measures of 1995. This decree covers, among others, the following aspects: (i) redefinition of the national, departmental and municipal networks; (ii) economic and financial arrangements; and (iii) assignment of planning and implementation functions. Something similar should have done before starting the decentralization process.

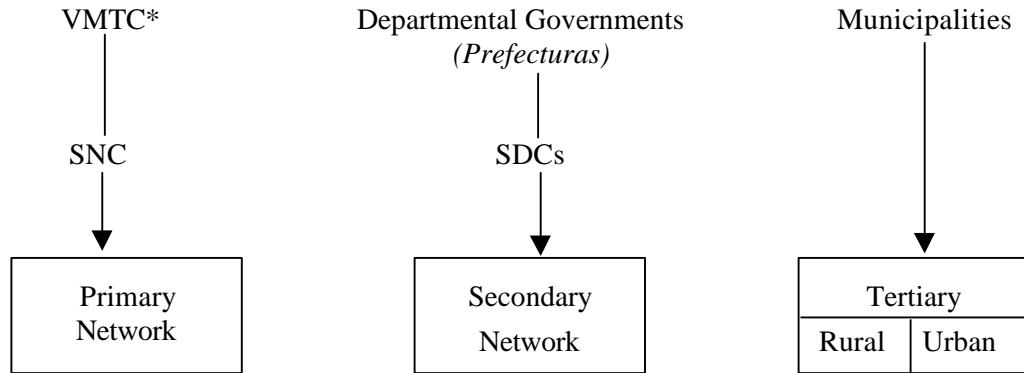
43. Article 15 of the Decree states that the financing of the national network is a responsibility of the central government, while the liabilities of *Prefecturas*, acquired during the decentralized period, continue to be a responsibility of the departmental governments. These and other expenditures related to the management of the departmental network, are to be paid mostly through the collection of a tax on hydrocarbons and with 30% of toll collections.

44. Article 17 establishes a national account for purposes of maintenance of the national network. This account will be administered by SNC and will be fed with 70% of the funds collected through tolls, loans from national and international organizations, and central government transfers. Toll collections that were used mainly to pay salaries and expenditures of SNC before 1995, and similar accounts of SDCs during the decentralization, are now freed to be used for maintenance purposes. The operational budget of SNC will be covered by central government transfers. In Article 24, SNC is assigned the responsibility of technical guidance and supervision of the three network levels.

45. The GoB has already started preparing the reorganization of the SNC. The government's intentions aim in the right direction, and the SNC shows adequate capacity and motivation to take control of the national network. The labor forces and equipment will remain with the SDCs. It is the government's intention not to replace them in SNC because maintenance of the national network will be carried out by contract. However, until now, there is no experience in Bolivia in maintenance by contract and, therefore, this endeavor will be supported by the ongoing and new Bank projects until the new approach is firmly

established. The SDCs will maintain the implementation functions over the departmental network, and the municipalities will do likewise with the municipal network.

After partial recentralization



\* (VMTC = Viceministry of Transport and Communications and Civil Aviation).

46. However, the recentralization has 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. With the new legislation, the role of SDCs will change from executors to supervisors of private sector contractors. It is expected that SDCs will contract out maintenance works on portions of the departmental network. In Cochabamba they intend to contract 60% of their network. This movement towards contracting seems, as was the case with decentralization, too rushed and without proper preparation. In La Paz and Santa Cruz they have called for bids but had to declare these invalid either because there were practically no bidders or because the proposals were not appropriate for maintenance. Now they will have to repeat the process, which is time consuming, while roads deteriorate further without maintenance. It is unclear that the SDCs have the capacity to manage these contracts and what the costs will be.

47. On the other hand, a new product line for SDCs has turned out to be renting of equipment and sale of services to municipalities. There is demand for this product as well as for technical assistance. But this line can not be pursued further if there is full contracting since in this scenario technical operators will be replaced by supervisors and equipment will be sold out.

48. SNC has had similar problems as SDCs in the contracting of maintenance for the national network. Of 39 national network routes, 11 have been awarded at the end of February/99, after two months of bidding processes. The quality of proposals has been low in general. In the mean time, little or no maintenance has taken place in 1999, resulting in further deterioration of the roads, particularly a highway connecting Santa Cruz and Cochabamba, situation that has been the object of severe criticism by the media. For the national routes that cannot be awarded, SNC foresees contracting the SDCs, which again,

goes against converting SDCs in institutions only for planning, supervision and control functions. The new Bank operation includes a pilot program aimed at assisting in these matters SNC first and, later on the SDCs.

49. In short, the decentralized road organizations are disconnected and lack accountability. To make matters worse, private interests can build feeder roads to their properties, which SDCs are required to maintain. It is also unclear what will be the relationship between the municipalities, led now by elected mayors, and the departmental governments, in terms of setting up priorities in the road sector at local level. In absence of transparent prioritization processes, the potential for projects that respond to vested interests is great. Even though the reforms point in the right direction, there is still a long way to go.

## V. EFFECTS OF THE DECENTRALIZATION PROCESS IN BOLIVIA

50. In Section IV we have described the decentralization and recentralization processes in Bolivia. In this section, we have selected some relevant aspects that may be empirically evaluated in order to analyze some quantifiable effects. The following evaluation is based on the results of a study financed by the SRMP and carried out during the first quarter of 1999. Technical, financial and institutional aspects of the decentralization process are analyzed here using quantitative indicators for SNC and six of the nine SDCs: La Paz, Santa Cruz, Cochabamba, Oruro, Chuquisaca, and Beni, which cover 76% of the national and departmental networks and 71% of the total road network.

51. To facilitate comparisons we have included a table summarizing the main indicators by department. This table can be found at the end of the section.

### *Technical aspects*

52. Four technical aspects were covered by the study: reclassification of the national network, maintenance information systems, maintenance planning, and equipment administration.

#### Reclassification of the national network

53. Tables 1 and 2 show, according to SNC data, the length of the three networks in each department by December 1996, during the decentralization, and by 1998, after the recentralization.

54. In terms of kilometers, in 1996, the national network accounted for 14.3% of all roads in Bolivia, the departmental network for 11.5% and the local network for 74%. The departments with more roads were: La Paz, Cochabamba, Santa Cruz and Potosi. When looking only at the national and departmental networks combined, the department with the largest share is Santa Cruz. It is also worth noting that the national network is quite long when compared with the departmental one, in particular in the case of Tarija. In other countries in the same region, the departmental networks tend to be longer (in Chile for

example, the national network is of 24,260 km while the departmental has 32,040 km, in Colombia, the national network accounts for 25,600 km versus 39,264 km of secondary roads). Given that the length of the national network is not excessive for the country size, it could be that the departmental network is not fully developed or that the municipal network includes roads that should be departmental.

**Table 1**  
**Road Networks by Department**  
**December 1996**

Departments	National network	Departmental network	National +Departmental networks	Municipal network	TOTAL
La Paz	749	1,077	1,826	7,213	9,039
Chuquisaca	915	374	1,289	4,664	5,953
Tarija	828	74	902	1,770	2,672
Cochabamba	913	219	1,132	4,995	6,127
Santa Cruz	1,839	1,400	3,239	5,776	9,015
Oruro	430	585	1,015	3,542	4,557
Potosi	537	1,409	1,946	9,395	11,341
Beni	1,205	663	1,868	1,302	3,170
Pando	186	290	476	803	1,279
<b>TOTAL</b>	<b>7,602</b>	<b>6,091</b>	<b>13,693</b>	<b>39,460</b>	<b>53,153</b>

Source: SNC

55. With the partial recentralization process (1998), the national network was redefined. SNC undertook a detailed inventory department by department and road by road. Their results are presented in Table 2. Later on, at the moment of making the recentralization official through the Decree 25134, the length of the national network varied slightly from the SNC inventory (refer to Table 2). This is explained by several factors: (i) the official definition was carried out using approximations in basic routes east-west and north-south, producing less precise results; (ii) for official purposes, a national route starts or finishes in the main square of a provincial capital, and the kilometers that are urban are considered as part of the national route, whereas this is not the case in the SNC classification, because those sections are under the responsibility of the municipalities; and (iii) some of the routes defined officially as national were not considered as such by the SNC inventory, particularly very short roads within one single department. The differences between the two classifications are concentrated in three departments: La Paz, Santa Cruz, and Pando, all of which have higher shares of the national network according to the official results.

**Table 2**  
**National network redefinition**  
**1998**

<b>Departments</b>	<b>Km</b> <b>SNC 1998 inventory</b>	<b>% of total</b> <b>(based on</b> <b>SNC</b> <b>inventory)</b>	<b>% change</b> <b>1996-1998</b> <b>(based on SNC</b> <b>inventory)</b>	<b>Km</b> <b>According to Decree No 25134</b> <b>August 1998 and amendments</b> <b>1999</b>
La Paz	775.59	8.6	+ 3.55	1,658
Chuquisaca	731.38	8.1	- 20.07	731
Tarija	689.37	7.6	- 16.74	689
Cochabamba	816.10	9	- 10.61	816
Santa Cruz	2,676.83	29.7	+ 45.56	3,017
Oruro	722.45	8	+ 68.01	723
Potosi	1,084.98	12	+ 102.04	1,090
Beni	1,200.94	13.3	- 0.34	1,201
Pando	322.59	3.6	+ 73.44%	476
<b>TOTAL</b>	<b>9,020.23</b>	<b>100</b>	<b>+ 18.66%</b>	<b>10,401</b> 1/

Sources: SNC 1998 Inventory.

Decree 25134, August 1998 and amendments 1999.

1/ Sum includes decimal points.

56. For purposes of this analysis we will use the SNC classification. The redefined national network covers 9,020 km, although the official length is 10,401 km. A great portion of the national network falls now in the departments of Santa Cruz, Potosi and Beni. Reclassification of the departmental and local networks is currently underway and there is no definite data yet, but the changes are expected to be minor.

57. The difference between the length of the network that was decentralized and the one that is being recentralized (1,418 km) shows the importance of having, previous to decentralizing, an accurate inventory and classification of the roads, which allows the correct assignment of political responsibility for roads among the different levels of government. If the total difference in national network length is striking, individual differences are even more so. Departments like Chuquisaca, Tarija and Cochabamba have had important decreases in their portions of the national network. Conversely, Santa Cruz, Oruro, Potosi and Pando have their shares of the national network increased dramatically. In the latter case this means that significant portions of roads of national importance were treated, during the decentralization years, as departmental, with different maintenance standards and less resources. These observations prove the importance of undertaking, before decentralizing, a full inventory to be used as the basis for the assignment of responsibilities among the different government levels.

58. The size of the recentralized national network does not seem excessive, taking into account the size of the country and the criteria followed for classifying the roads within that



category (roads integrating Bolivia with neighboring countries or connecting regions and the main cities, or providing access to points of strategic interests like airports, river ports, etc.). The departmental network, on the other hand, seems considerably short compared to the national network, thus emphasizing the very low road densities in the country, both in terms of population and of area. It can be argued that it may have been premature to decentralize a road network that still requires considerable capital investments for its development. At least, special attention should have been given to the issues of local institutional capacity and financing, in light of the magnitude of the investments that are likely to be required at this level.

### Maintenance information system

59. Road maintenance has been a priority of the GOB for the last decade. A computerized system to control maintenance activities was introduced in Bolivia in the 80s financed by the First Road Maintenance Project. Its implementation, that used specialized consultants, was interrupted due to the difficulties that the country was facing in those years. Nevertheless, this experience proved the need to have such a system for planning purposes. In the period 92-95, using resources of the SRMP, the implementation of the system was completed successfully, and was considered one of the most complete in Latin America. This system, called "Maintenance Administration System" (SAM) is the basis for maintenance programming and control over implementation of maintenance works and maintenance costs. During the decentralization period the use of the system, although not totally discontinued, suffered from interruptions mainly due to the lack of technical assistance from SNC. Technical staff in the SDCs were able to solve minor system problems but not the more complicated ones. In the latter case, the use of the system was either incomplete or altogether stopped until the defective condition was solved. Clearly, the lack of accountability in the new structure has been a disincentive to maintain these information systems.

60. Another problem with SAM nowadays is that reports, which are filled out in each work camps<sup>2</sup>, come up to three months late to the SDC offices and their accuracy is questionable. Overall, the reporting discipline that existed before the decentralization has disappeared. This happens because there has been a very high rotation of personnel in the work camps and the new employees have not been properly trained. Furthermore, the maintenance heads of several SDCs complained that hiring of new employees in work camps by the *Prefecturas*, is a politically dominated process in which technical criteria have not counted.

61. In terms of usefulness of the system, engineers in charge of SAM expressed that it is in need of important updates, notably: (i) to include costs such as machinery depreciation and replacement, and overheads in order to reflect better real costs and not only direct costs; and (ii) to include external contracting costs. Due to these limitations, SAM outputs are not

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<sup>2</sup> Each SDC is formed by work camps where the equipment and maintenance workers are located.

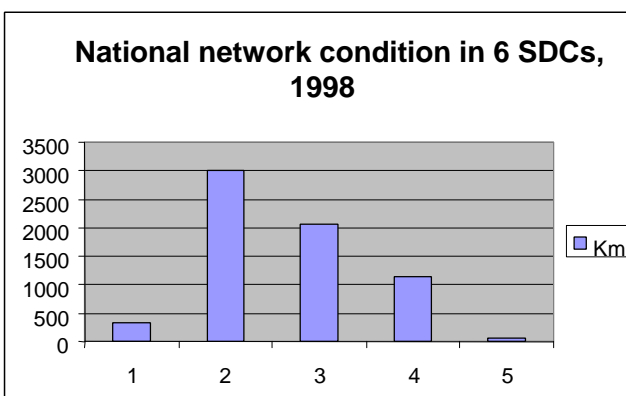
used in the preparation of the financial budgets of SDCs. Selected outputs of the SAM reports were used to construct the indicators in Table 4.

### Maintenance planning

62. Two indicators have been used to evaluate the effects of the decentralization on maintenance planning. The first indicator is road condition. We faced two difficulties to get hold of this information:

- (i) It was not possible to obtain consistent annual condition assessments for the **departmental** roads. Although SAM has a module for this, it requires that physical road inventories be carried out every two years and updates every year. Unfortunately most SDCs did not do any road inventory during the decentralization period and limited this analysis to annual updates. These updates do not follow rigorous standard procedures and, therefore, depend heavily on the person in charge. The partial data obtained had serious inconsistencies and, for this reason, we decided not to include it.
- (ii) Condition assessments for the **national** network have been made by SNC only in 1991 and 1998. Although the data is reliable, the 1991 set is not useful to compare road conditions right before and after the decentralization, as was originally intended. In order to do that we would need information for 1995, which is not existent.

63. Despite these shortcomings, the 1998 data for the national network can be analyzed (refer to graph and Table 3) to assess the condition of the network in 1998 when the recentralization decision was made.



There are five condition categories in Bolivia, where 1 is the worst condition and 5 the best, based so far on rather subjective evaluations. The majority of the roads in all SDCs are in either condition 2 or condition 3, that is, in the lower end of the classification. In condition 2 there are 3,000 km or 45% of the national network of the six SDCs under review, and over 30% of the total national network. The situation is particularly alarming in Santa Cruz and Beni, having 60% of their share of the national roads in condition 2, and this despite the fact that all regions, but particularly Santa Cruz, have benefited from resources of the SRMP.

These two departments alone account for 43% of the newly defined national network. This factor skews the total distribution. La Paz, Chuquisaca and Oruro present the best outcomes,

with approximately 70% of the network in conditions 3 and 4. These uneven results suggest the need for a Central Government role in terms of setting-up standards for the national network condition and overseeing their compliance.

**Table 3**  
**National network condition**  
**1998**

Indicator Department	Length (km) and % in condition 1	Length (km) and % in condition 2	Length (km) and % in condition 3	Length (km) and % in condition 4	Length (km) and % in condition 5
La Paz	5.59 0.72%	100.88 13.01%	504.69 65.1%	157.49 20.31%	6.62 0.85%
Chuquisaca	86.49 11.83%	148.45 20.3%	393.12 53.75%	103.32 14.13%	0 0%
Cochabamba	36.63 4.49%	321.63 39.46%	224.67 27.56%	232.16 28.48%	0 0%
Santa Cruz	163.81 6.12%	1,567.24 58.55%	537.79 20.09%	384.23 14.35%	23.72 0.89%
Oruro	47.66 6.6%	138.88 19.22%	242.94 33.62%	265.32 36.72%	27.8 3.85%
Beni	6.44 1.41%	726.32 60.38%	165.33 36.13%	9.53 2.08%	0 0%
TOTAL (km)	346.62	3,003.4	2,068.54	1,152.05	58.14
% of national network in 6 SDCs	5.61%	45.3%	33.48%	18.65%	0.94%

Source: SNC

Note: The sum of km in this table is slightly less than the equivalent sum in table 2. The reason is because in each SDC there are always portions of the roads that are under construction and for which data are not available.

64. The second indicator is the percentage of maintenance executed versus planned. This results from dividing the total maintenance expenses executed at the end of the year by the amount that had been planned at the beginning of that year. The amount planned was calculated by the SAM on the basis of road condition and adequate levels of maintenance. In most SDCs this figure has been very low. According to SNC standards, 60% is the minimum percentage acceptable and this level was only reached by Chuquisaca, Cochabamba and Oruro before the decentralization period but, unfortunately, in those same three departments

the decrease after the decentralization has been dramatic: Cochabamba went from 75% in 1995 to 42% in 1998, Chuquisaca moved from 75% in 1995 to 47% in 1998 and Oruro from 94% to 30%. The La Paz SDC also reported acceptable levels but contrary to the general trend, this happened after the decentralization, perhaps explained by the acquisition of new equipment in 1997, in which it reached a peak. This result, along with the relatively good performance of La Paz in the other indicator reviewed (condition ) make of this SDC an outlier in the sample. The figures for the other two SDCs, Santa Cruz and Beni, are also disappointing, particularly in the case of the latter.

**Table 4**  
**Maintenance Indicators**  
**1995-1998**

Indicator Department	Maintenance expenses executed (U\$)	Maintenance expenses planned (U\$)	% Maintenance executed versus planned,
La Paz			
1995	3,909,036	6,758,741	57.8%
1996	3,866,731	6,615,067	58.5%
1997	4,958,508	5,335,171	92.94%
1998	3,307,733 *	4,805,656*	68.83%
Chuquisaca			
1995	2,302,578	3,090,282	74.5%
1996	2,558,720	3,110,312	82.3%
1997	2,092,773	2,343,793	89.29%
1998	1,535,900	3,243,032	47.36%
Cochabamba			
1995	1,802,255	2,402,097	75%
1996	1,918,841	2,823,331	68.27%
1997	1,469,172	4,269,608	34.41%
1998	1,944,194	4,654,522	41.77%
Santa Cruz			
1995	1,589,043	4,135,455	38.4%
1996	1,336,082	4,193,574	31.8%
1997	1,262,594	4,784,365	26.39%
1998	1,740,898	3,785,384	45.99%
Oruro			
1995	1,280,282	1,361,261	94.1%
1996	1,527,757	1,667,387	91.6%
1997	1,240,628	2,095,655	59.2%
1998	1,115,194	3,632,554	30.7%
Beni			
1995	856,447	606,588	NA
1996	1,014,602	2,186,815	46.4%
1997	765,366	3,401,627	22.5%
1998	NA	NA	NA

Source: SDCs

\* up to Oct/98

65. The reasons for the overall negative outcome are threefold: (i) changes in personnel, notably technical and engineering staff without proper replacement and transition period; (ii) budget restrictions (see financial aspects); and (iii) decay of the equipment. A slight improvement in 1998 in Cochabamba and Santa Cruz might be due to the increase in resources that resulted from the privatization of tolls in 1997 in these departments. Nevertheless, only La Paz exceeded the 60% threshold in 1998. In terms of the cost of maintenance per kilometer, values range from US\$510 in Santa Cruz, to US\$1,300 in Chuquisaca, with US\$1,000 in La Paz and Cochabamba. Although these figures correspond to all the roads transferred, and not only to the primary ones, they are low compared to the minimum standard of US\$1,800-2,000.

#### Equipment administration

66. The first indicator used for equipment was its condition after the decentralization in the six SDCs studied. Table 5 shows the general decay of road equipment (except in the case of Oruro) which has also negatively affected maintenance activities.

**Table 5**  
**Maintenance Equipment and Traffic Counters**

Indicator Department	Equipment condition		Traffic Counters		
	In working conditions	Out of order	Counters handed in	Counters installed	Counters with problems
La Paz 1996 1998	78% NA	22% NA	24	18	10
Chuquisaca 1996 1998	79% 75%	21% 25%	23	20	0
Cochabamba 1996 1998	87% 73%	13% 27%	20	10	4
Santa Cruz 1996 1998	62% 51%	38% 49%	26	15	7
Oruro 1996 1998	91% 95%	9% 5%	16	13	13*
Beni 1996 1998	84% 77%	16% 23%	16	11	2

Source: SDCs

\* The cable that connects the counters with the central computer is broken.

67. In all SDCs in the sample, except Oruro, at least 23% of the equipment is out of order. The problem is due to: (i) lack of personnel to carry out curative maintenance; (ii) lack of preventive maintenance of the equipment; and (iii) decreased use of the equipment, which results in corrosion, and neglect. The equipment administration system (SAE) is the

software, which was implemented in conjunction with the SAM, to control equipment maintenance and operation in order to provide the necessary units for carrying out the maintenance programs prepared with the SAM. The SAE is no longer used in most SDCs because the engineers that were in charge of it left with no replacement to date. Without personnel and without the maintenance planning and control provided by the SAE the equipment has severely deteriorated. Some SDCs are trying to cope with this problem by investing in repairs but the expenses incurred have not shown any improvement yet. In the case of Santa Cruz, renting of some equipment has been an option but at very high cost. This is worrisome, particularly because equipment has a high incidence on maintenance costs (around 60%). In the other extreme, equipment in Oruro has been maintained better, and this shows in its primary network condition, which is better than in other SDCs.

68. In terms of traffic counting equipment the situation is also worrisome. Through the SRMP, the GoB bought 200 automatic traffic counters for both the national and departmental networks (see Table 5). Most of these were handed in to SDCs at the end of 1995. By 1998, 27% of the counters had not been installed and 32% of those installed presented problems. The main causes of problems are: (i) non-replacement of batteries; (ii) deconfiguration of the data collection system; and (iii) motorized impacts, all of which result from careless operation.

69. Although data is not readily available, a similar situation was reported by SNC engineers for vehicle weighting equipment. Most scales distributed to SDCs have not been used because the platforms and other complementary infrastructure were not built. In the few cases where the scales are used, staff look at infractions as a positive outcome that translates into penalty fees and therefore, increased income. The target should be to achieve a minimum number of infractions so that the use of the road is optimized from the perspective of vehicle weight, but unfortunately this is not the case. The overall impression is that the SDCs are not concerned in taking data and processing it in order to improve maintenance and prepare adequate maintenance plans.

70. In conclusion, the technical indicators illustrate five major deficiencies: (i) the road classification; (ii) budget planning and execution; (iii) the use of information systems; (iv) equipment maintenance and utilization; and (v) the road condition. These deficiencies are the result of shortcomings in the decentralization process: (a) the road network was not inventoried and classified before starting the decentralization process, hindering an appropriate transfer of responsibilities and resources according to the extent and condition of the roads; (b) the reforms implemented by the process were neither implemented gradually, particularly as horizontal gradualism is concerned (all departments have very different capability levels), nor flexibly; (c) management responsibilities associated to the roads to be decentralized were not assigned according to institutional capabilities and complexity of the network; (d) there was no adequate attention to the assessment of technical capabilities of the receiving institutions; and (e) the existing information and management systems were not properly maintained.

### ***Financial aspects***

71. In this sub-section we will cover first financial arrangements prior to decentralization, then during the decentralized period, and finally what is envisaged for the partial recentralization.

### Prior to decentralization

72. Before the decentralization period SNC managed the entire budget for the maintenance and construction of roads, financing its nine districts directly.

- Sources of income. By far the most important source of income was the external credit (see Table 6). After that, the national government transfers and the internal credit were the most important items, although far less significant than the external credit. The last item in importance was the toll collection. These numbers show an important dependence of SNC on external financing, which in turn explains the influential position of international donors and financiers with respect to road management reform in Bolivia.
- Principal expenditures. The distribution of income, at least in principle, was: internal and external credit for new construction, toll income for maintenance, and central government transfers for operating expenses. Although we do not have expenditure data by construction, maintenance and operation, the fact that in 1995 the items corresponding to materials, chemical products (mainly asphalt), fuel, maintenance and repairs, tires, spare parts, and professional services, all attributed to maintenance activities, add up 64.4 million bolivianos (without including maintenance personnel) an amount higher than the toll income of that year, which suggests that other income sources have been used to cover maintenance expenses.

### During decentralization

73. During decentralization (1996) both SNC and SDCs were independent recipients of road management budgets.

- Sources of income SNC continued to receive and administer the international and local credits and a small amount of central government transfers that were used to maintain a minimum operation (see Table 6). Revenues from toll collections were completely transferred to the SDCs, as well as the contributions for road improvement. It was impossible for SNC, under these circumstances, to provide any technical support to SDCs. Although counterpart funds for projects with international financing continued to be provided by the central government, the reduced staff affected the implementation of those projects. As an example, the SRMP, which started at a very satisfactory pace in early 1993, has been extended twice for a total of two years, until June 30, 2000, to allow completion of the work program and the use of the resources available.



**Table 6**  
**Main Income Items**  
**SNC, 1995-1999**  
**In Current Bolivianos**

Income items	1995	1996	1999 (projected)
Central Govt. transfers	75,055,819 (11.3%)	10,048,170 (2.4%)	14,175,000
Tolls	61,086,472 (9.2%)	–	72,576,000
Contributions for road improvement (% discounted from salaries of public employees)	5,966,616 (0.9%)	–	
Other items: External credit (approx 84% of this item)	519,457,910	407,346,830	584,000,000
Internal credit (approx 15% of this item)	(78.5%)	(97.6%)	
Sale of assets (approx 1% of this item)			
2/			
TOTAL income	661,566,817 (100%)	417,395,000 (100%)	1/

Source: SNC

1/ Information for other sources of income (e.g. privatization of electric company, valorization of public investment) was not available.

2/ The information gathered by consultants does not discriminate among each of these items.

- In the case of SDCs, the situation is summarized in Table 7. In general, 1996 was a year of low income and with increased responsibilities. In Santa Cruz, for example, before decentralization the district received through SNC almost 26 million bolivianos, while in 1996 its total income decreased to 21.6. Total revenues increased substantially in the departments in 1997, in some cases by a large extent (notably in Cochabamba and Santa Cruz). Most of the income came from toll collections and these were particularly high in Cochabamba and Santa Cruz where toll management has been privatized. With respect to departmental government transfers, these have taken place in an irregular way, when comparing 1996 to 1997 and individual SDCs. Cochabamba and Beni are the only SDCs that have received these funds both in 1996 and 1997. This in spite of the fact that departmental collections on the hydrocarbons tax (the source that is supposed to feed departmental transfers) are considerable and rising throughout the years (see Table 8). It seems that obtaining transfers from the Departmental Governments depended heavily on the specific relationship between the *Prefectos* and the directors of SDCs. This situation illustrates the lack of accountability of the *Prefecturas* over financial resources. In general, the data shows significant variation among SDCs in terms of levels of income achieved. Expected income gains can create strong incentives in better-off SDCs to

support decentralization. On the other hand, excessive financial disparities might translate into undesired performance differentials.

**Table 7**  
**Financial indicators**  
**In Current Bolivianos**

Indicator Department	Main income sources		
	Dept Govt. Transfer	Tolls	Total Income
Cochabamba			
1996	2,307,761	17,762,127	20,879,837
1997	7,007,195	22,896,709	31,483,658
1998	NA	22,730,070	31,401,271
Santa Cruz			
1996	2,164,611	13,140,125	21,678,777
1997	0	24,011,104	31,137,387
1998	0	41,516,010	45,867,719
Oruro			
1996	6,054,219	6,438,061	12,728,738
1997	0	8,032,875	14,374,568
1998	1,200,016	8,952,754	14,470,113
Beni			
1996	6,685,440	1,172,699	8,422,365
1997	3,957,272	1,798,866	8,681,541
1998	0	1,699,248	10,356,603

Source: SDCs

Note: It was not possible to obtain complete data for La Paz and Chuquisaca

**Table 8**  
**Departmental Collection of Tax on Hydrocarbons**  
**In Current Bolivianos**

Year	1996	1997	1998
<b>Department</b>			
La Paz	41,327,725	43,231,610	53,481,460
Chuquisaca	18,451,782	19,301,818	23,878,117
Cochabamba	28,829,514	30,157,632	37,307,752
Santa Cruz	32,847,882	34,361,118	42,507,849
Oruro	16,655,228	17,422,501	21,553,228
Beni	15,644,407	16,365,113	20,245,144

Source: SNC

- Principal expenditures. In the case of SNC the bulk of the expenses was construction and minimum operating expenses. In order to finance maintenance activities, SDCs were left only with toll collections. With no departmental resources transferred in most cases, and with no other sources of income, SDCs ended up using the toll income to finance operating expenses, maintenance and new construction. In some SDCs toll income was insufficient, particularly to pay compensations to redundant staff, having to incur in debt.

### Recentralization of the primary network

74. As was explained in the previous section, after the partial recentralization both SNC and SDCs operate with independent financial arrangements.

- Sources of income. For 1999, according to preliminary data, SNC budgeted 584,000,000 bolivianos of international credit, earmarked for investment, 14,000,000, coming mostly from transfers of the national government, for operating expenses, and 72,576,000, coming from 70% of the toll collection, for maintenance. The total income will be higher than that of 1996, and very close to that of 1995, right before the decentralization (see Table 6).
- For SDCs income will continue to come mostly from tolls and from departmental transfers. Starting 1999, toll income for the SDCs is only 30% of toll collections, with the remaining 70% going to the SNC maintenance account. The SDCs have expressed strong disagreement with the 70-30 percent distribution, arguing that the lengths of the departmental and national networks are quite close, implying similar maintenance efforts, which is not accurate. They have proposed that tolls located in the departmental network be under their management. Since this proposal was rejected, some SDCs are thinking about creating new tolls, but this might be an unpopular measure given the current bad condition of roads.
- Principal expenditures. Most of the expenditures at SNC level are now construction works and maintenance of the national network, and operating expenses of a slightly larger staff than what they had during decentralization. The maintenance expenses include payment to contractors and/or SDCs. At the moment, the financial team in SNC is not certain whether these resources will be enough to pay the contractors, but it foresees that in the negative case they will have to increase toll fees. In fact, SNC is contemplating the need to borrow money from the Central Government in order to pay external supervisors to manage the maintenance contracts and possible concessions with the private sector. Existing qualified professionals for this task in the market have much better salaries than the average SNC engineer, making it impossible to hire them.
- For SDCs, the principal expenditures will be maintenance of the secondary network and operating expenses. A problem that SDCs will continue to face is that of high expenses related to compensation packages for redundant staff. The Central Government has agreed to lend money to the SDCs to pay these compensation packages in exchange of some of their assets. With many assets not officially in books (particularly assets that were transferred from SNC during decentralization), this process will be lengthy.

75. In conclusion, the financial indicators show two major drawbacks of the decentralization process: (a) the central government did not invest the necessary resources to

back up the process, particularly because SNC was left without funds to provide minimal technical assistance to SDCs during the transition period; and (b) technical and administrative competencies were transferred without establishing appropriate and sustainable financing mechanisms. The insufficiency of funds in SDCs forced some of these into debt, and the allocation of departmental resources among SDCs was neither clear nor transparent. Although the privatization of tolls in three of the departments has yielded excellent results, dependence of SNC and SDCs on this source is worrisome because there are no traffic counting devices at the toll gates and therefore it is impossible to verify the total real income. On the other hand, in most instances, contractors transfer a fixed amount of the reported collection, to the SNC unless the users refuse to pay the tolls, in which case, that amount is reduced to compensate for the reduction in revenues. Finally there is not a study on collection costs and overall efficiency of this system, particularly for low traffic sections of the network.

### *Institutional aspects*

76. This sub-section will cover various institutional and human resources aspects of both SNC and SDCs.

#### SNC

77. By 1994 SNC had a total of 3,976 employees, distributed as follows: 206 engineers, 18 non-engineer professionals, 1,213 technicians, 545 administrative staff and 1,994 laborers. From the staff composition it is evident that SNC was rather a technical and operational institution with most staff either engineers, technicians or laborers. The institution maintained technical and engineer career tracks whereby technicians and engineers were trained, promoted, and rotated among districts during their time of service. This policy allowed SNC to keep acceptable technical levels in all its districts as well as appropriate enforcement of technical standards, and compliance with reporting requirements. Evaluation processes in the districts were an integral part of SNC's duties.

78. With the decentralization, the number of SNC's staff was dramatically reduced. It was estimated that by 1998 the total number of employees was close to 300, less than a tenth of what it used to be. Many engineers and technicians left the institution in view of its imminent closing down. As the number of staff was reduced and its budget cut, the institution weakened, staff morale declined and more experienced professionals left the institution.

79. In the partial recentralization process, the GoB realized that SNC had a role to play not only in managing the national network, but also in helping the SDCs assume their responsibilities vis-à-vis the departmental network. Since maintenance of the national network will be by contract, staff in SNC is not expected to increase in number but rather change in qualifications. The institution will need a good combination of administrative and technical staff who can handle the maintenance contracts, and a solid engineering group to resume the supervision, planning and evaluation of maintenance activities on the national network and technical guidance to SDCs. The GoB has already started the reorganization of

SNC in the first semester of 1999. During this process, SNC is being improved through the technical assistance component of the on-going SRMP.

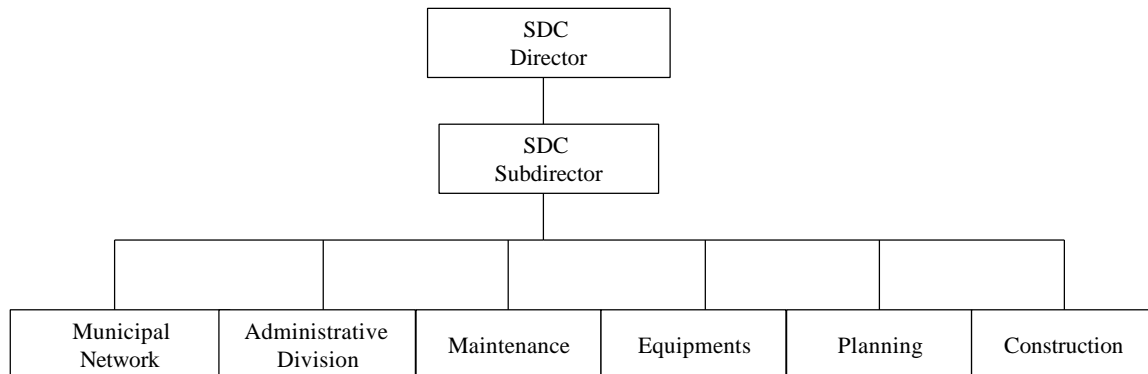
### SDCs

80. The quantity and composition of staff has changed in the decentralization period (1996-98) in all SDCs (see Table 9). The number of employees decreased by the hundreds, but the changes in the staff composition are different in each SDC, reflecting different personnel reduction policies. For instance, professional and administrative staff have been maintained in Cochabamba and Oruro, while they decreased in La Paz and Santa Cruz. Technicians have decreased in Santa Cruz while they have increased in Beni. Similarly, in relative terms the composition of staff varies a great deal, for instance in Santa Cruz administrative staff represent 1.5% of all staff in 1998 and technicians 13%, while in Cochabamba the numbers are 11% and 2% respectively.

81. During this period the SDCs suffered from a decline in technical capabilities, both internally and as a consequence of suspended assistance from SNC. Political interference from the *Prefecturas*, particularly in the selection of staff as well as in the management of staff careers, has also been a complaint in some SDCs.

82. In terms of structural organization, the standard organigram in an SDC looked like:

Standard organigram before and during decentralization



Most SDCs had six departments, five of which were eminently technical. The functions of road maintenance and equipment administration were clearly separated. A distinct planning department existed for the purposes of evaluation of past activities, planning of new operations, and other activities like traffic counting and safety studies.

In terms of external relations, most SDCs have had little if any interaction with SNC and with other SDCs. There are some exceptions in which the SDC director is a former SNC professional and therefore, knows people in SNC and in other SDCs, but this is not the norm. Relations with the *Prefecturas* have been rather difficult during the transition period due to

the difference in nature of the two institutions, one being mostly technical and the other being political.

For the partial recentralization period the cuts of personnel have continued without appropriate planning. Starting January 1999 most personnel was terminated with only some being rehired under the new organization. The termination of so many employees at once created tensions, particularly from the labor unions side. In La Paz, for example, there were several disturbances, including two general strikes in December/98, the seizure of a group of administrative employees for several hours, an attempt of fire, and personal threats. On the other hand, the rehiring of personnel has been very slow, and discouraging and demoralizing for the continuing employees. As a consequence, most SDCs are operating only marginally, at a moment where there are several road emergencies in the country. This problem also reflects in the percentage of total expenses spent on salaries: on one hand this figure decreases due to the cuts in personnel, and on the other hand it increases due to the payment of compensation packages (see Table 9). This amount ranges from 70 to 20 percent, Chuquisaca and Beni exhibiting the highest percentages.

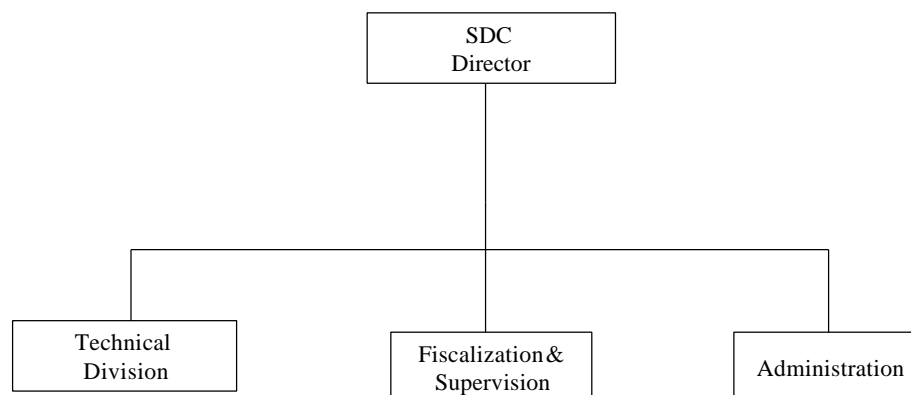
**Table 9**  
**Institutional Indicators**  
**SDCs**

Indicator Department	Number of employees						% expenditures in salaries
	Total	Dir	Prof	Admin	Tech	Workers	
La Paz							
1995	779	2	28	80	127	542	53.86%
1996	632	2	21	41	6	562	NA
1997	736	2	21	41	110	562	NA
1998	546		NA	NA	NA	NA	NA
1999	200		NA	NA	NA	NA	NA
Chuquisaca							
1995	313	1	42	20	50	200	55.24%
1996	298	1	25	22	50	199	64.14%
1997	NA		NA	NA	NA	NA	60.22%
1998	NA		NA	NA	NA	NA	NA
1999							
Cochabamba							
1995	129	2	7	22	50	48	58.81%
1996	394	1	7	45	56	285	41.06%
1997	431	1	7	47	55	321	34.32%
1998	378	1	7	40	50	280	48.85%
1999	148						
Santa Cruz							
1995	491	2	25	74	81	309	33.81%
1996	621	2	25	53	63	478	35.13%
1997	551	2	18	19	35	477	41.74%
1998	510	2	9	8	14	477	19.55%
1999	150						
Oruro							
1995	252	2	12	35	47	156	41.39%
1996	254	2	12	37	12	193	40.92%
1997	295	2	11	35	57	190	53.29%
1998	NA	NA	NA	NA	NA	NA	46.56%
1999	130						
Beni							
1995	129	2	7	22	50	48	62.82%
1996	293	2	7	57	162	65	61.11%
1997	300	1	7	60	168	64	69.14%
1998	NA	NA	NA	NA	NA	NA	42.29%
1999							

Source: SDCs

83. The structural organization of most SDCs has changed as illustrated in the graph below:

Standard organigram proposed



Only the largest SDCs will continue to have an Equipment Department. In most other cases, maintenance, new construction and equipment management will fall under the technical department. The Planning Division will disappear and its functions will be taken over by a technical division in the *Prefectura*. The Fiscalization and Supervision Department will be in charge of supervising maintenance contracts and works. Function manuals and operational directives need to be changed soon as the functions and roles of the SDCs are supposed to change dramatically during this year.

84. In conclusion, institutional indicators illustrate the lack of human resource policies, in SNC and the SDCs. This is due to three weaknesses of the decentralization process: (a) decentralization of road management took place without an adequate level of local governance: the staff composition and staff changes in SDCs reflect an absence of human resource policies from the center; (b) the institutional reforms entailed by the process were neither implemented gradually nor flexibly, leaving no time for adjustments along the way, and causing staff erosion, loss of institutional memory and decline in staff morale; and (c) management responsibilities associated to the roads to be decentralized were not assigned according to institutional capabilities and complexity of the network: the increase in technical responsibility of SDCs was not matched by a technical strengthening in the staff of these institutions, but rather the opposite.

### ***Overview of impact of decentralization***

85. Table 10 below, summarizes the key findings from the review of the most important indicators for the six SDCs analyzed. In spite of the limited data available for these indicators and the brevity of the period of decentralized management, the information analyzed shows that by 1998 the conditions of the national network were extremely poor in all departments, a situation that required immediate attention. While some departments were able to increase the ratio of maintenance activities executed vs. planned, all the ratios are still considerably low (all below 50% except for La Paz). Similarly, in all but one case the percentage of equipment in use had decreased from 1996 to 1998.



86. Table 10 also shows that the number of employees was considerably reduced in all departments for which data was available. While a reduction in total staff could be interpreted as an increase in productivity, in this case it resulted in the loss of considerable specialized expertise and institutional memory, which contributed to the operational difficulties faced by the SDCs. This situation affected the financial aspects, because the SDCs had to pay compensations for the retired and laid off staff, that were higher than expected in some cases, leading to indebtedness.

87. The only indicator that shows a clear improvement over the 1996-1998 period is the change in total income, mainly due to the improved performance in toll collections resulting from private sector contracting. This is clearly a direct result from decentralization, since local governments face a clear incentive to maximize all their sources of revenues. Nevertheless, this result should be analyzed for the reasons explained in para. 75.

88. Under these circumstances, the decision to recentralize the national network does not appear to be an excessively drastic one, especially since the departments with the largest share of the national network (Santa Cruz and Beni) were also showing extremely poor road conditions. Close monitoring and detailed data collection should be maintained over the next several years in order to develop a more accurate assessment of the performance of the SDCs, and to implement adequate strategies for the development of the sector.

**Table 10**  
**Summary of Indicators by Department**

Department	Share of national network (%) 1998	Change in share of national network 1996-1998	National network in condition 1, 2 and 3 (%) 1998	Maintenance executed vs. planned (%)		Change in % of equipment in use (%) 1996-1998	Change in total income (%) 1996-1998	Change in # of employees 1996-1998
La Paz	8.6	+3.55%	78.83	58.5	68.8	NA	NA	-432
Chuquisaca	8.1	-20.07%	85.88	82.3	47.4	-4	NA	NA
Cochabamba	9.0	-10.61%	71.51	68.7	41.8	-14	+50.4	-246
Santa Cruz	29.7	+45.56%	84.76	31.8	46.0	-11	+111.6	-111
Oruro	8.0	+68.01%	59.44	91.6	30.7	+4	+13.7	-124 (2)
Beni	13.3	-0.34%	97.22	46.4	22.5 (1)	-7	+23	NA

1/ Data for Beni is from 1996-1997.

2/ Data for Oruro is 1996-1999,

## VI. CLOSING REMARKS, CONCLUSIONS AND RECOMMENDATIONS

89. Decentralization of road network management was far from successful in Bolivia, but can become positive if the partial recentralization measures continue to be strengthened. Many factors contributed to this initially negative outcome. If we take as a reference the cases analyzed in Section III, we may see that in the cases of Argentina, Brazil, Colombia, and Spain, all countries with more political and administrative decentralization levels than Bolivia, management and financing of the primary network has remained, with varying degrees, a responsibility of the central or federal government. This was not the case in the original decentralization plan in Bolivia in which full responsibility for the primary network was given to the *Prefecturas* and management activities transferred to the SDCs. These departmental agencies were not prepared to assume these responsibilities, even less so at the rapid pace at which the transfer took place and without proper resources.

90. In Venezuela, another example in which all responsibilities for the primary network except road construction were also transferred to the States, the process was also very fast, with the management of the primary network mostly transferred to the states but with the federal government's exclusive competence over new construction on that network. In Bolivia the process was even more rushed and aggressive than in Venezuela. In addition, all responsibilities, for the national and departmental networks were transferred to SDCs, with no exception. Furthermore, Bolivia has a more centralized political structure than Venezuela, with the heads of departmental governments (*prefectos*) appointed by the President, and the core of administrative and financial decisions still highly concentrated in the national government, making it more difficult to decentralize road management than in Venezuela. Finally, the latter had, at the time of the decentralization, a stronger technical and administrative organization than the Bolivian departmental governments.

91. In summary, three factors are striking about the road decentralization in Bolivia: (i) the transfer of primary network ownership and management to departmental agencies; (ii) the accelerated pace of the reforms; and (iii) the decentralization of administrative responsibilities was not matched by a true decentralization of political accountability, since the *prefectos* continued to be accountable to the President instead of being elected by the local population.

### *Conclusions on the decentralization process*

92. We have reviewed in Sections IV and V the process and effects of the road decentralization in Bolivia. We will now examine the possible causes for this unsuccessful experience in parallel to the lessons stated in Section III.

*(i) Decentralization of road management took place without an adequate level of local governance, in terms of legal, financial and political participation, and did not follow a gradual approach, with all responsibility over the national network transferred to the Prefecturas.*

*(ii) The road network was not inventoried and classified before starting the decentralization process nor the classification of road functions was clearly related to the assignment of political responsibility for the roads.*

Therefore, it was impossible to prepare specific transfer plans to the departments and assign responsibilities and resources according to the types and extent of roads and their corresponding conditions.

*(iii) The reforms entailed by the decentralization process were neither implemented gradually (either vertically and horizontally) nor flexibly, leaving no time for adjustments along the way.*

This was particularly problematic for Bolivia, as regional differences are quite high, both in terms of economic activity and human, social and physical capital. In retrospect, perhaps it would have been better to start with the decentralization of the regional network to three or four of the departments that were better prepared for the transfer of responsibilities and then adjust the process and proceed with the other departments. For reference (in Bolivia or elsewhere), the case of Spain offers a good example, with: (a) deconcentration process that, although initially not conceived as part of a larger decentralization scheme, was very useful in preparing the country for more important reforms; (b) the creation of negotiating commissions for each region or decentralized entity composed by representatives of the central government and the region to evaluate the competencies and resources to be transferred and the institutional capacity of the decentralized entities; and (c) the creation of financial compensation mechanisms to ensure a fair and balanced process in terms of regional development.

*(iv) The central government did not invest the necessary resources to back up the process, and neither it nor the prefecturas took advantage of the process in the context of broader administrative reforms.*

There was not a serious study to backup the decentralization proposal, which would have served as the background for discussions on the decision, the model, and the process. There were practically no discussions on the subject, and the opinion of experienced SNC staff that disapproved the measures was not given any consideration.

*(v) Management responsibilities associated with the roads to be decentralized and regulatory powers among national, departmental and municipal governments were not assigned according to institutional capabilities and complexity of the network, and were not clearly defined.*

SNC was dismantled without considering that many of its functions, that were crucial, were not being assigned to the SDCs and were therefore practically dropped. It seems that the only criterion taken into account in this case was political. SNC had developed a sound management system to maintain roads, equipment, and workshops. With this system it was possible to plan maintenance activities and control its outputs and costs. As was seen in the previous section, this effort was highly undermined during the decentralization years.

SNC had also managed to develop on-the-job knowledge transfer mechanisms, a reporting discipline, and a service commitment among its workers, particularly those in the work camps. This commitment was very effective in maintenance activities, notably emergencies, very frequent during the rainy season. This has been almost lost during the decentralization period. In addition, SNC had a strong career track that certified its staff and ensured consistency of technical approaches. With a more gradual transition these legacies could have been strengthened within SDCs. The cuts of personnel both in SNC and the SDCs were too drastic and the re-hiring of personnel has been too slow. This situation has created a serious disruption in the functioning of SNC and SDCs.

The role of the central government, with the dismantling of SNC and the reorganization of the Ministry of Transport as one dependency in the Ministry of Economic Development, was not clear. As has been discussed before, the SDCs were not prepared to undertake all the responsibilities that were transferred to them. In addition, the technical assistance that used to be provided by SNC disappeared.

*(vi) Technical and administrative competencies were transferred without establishing sustainable financing mechanisms.*

In principle, the idea was that central transfers would be replaced by increased toll collections and departmental transfers. The first item was to be used only for maintenance purposes and the latter for new construction activities. Departmental transfers have taken place only in some SDCs and with irregular amounts. Besides, no additional source was specified to cover operating costs of the SDCs and, therefore, these had to be paid with the toll income. These financial constraints along with the weak technical capabilities of the SDCs and the lack of technical assistance to them resulted in: (a) less resources devoted to maintenance operations; (b) equipment deterioration; and (c) lower quality of maintenance supervision activities. All of these factors translated into worse technical condition of the national network.

*(vii) There was no adequate attention to the assessment of technical capabilities of the receiving institutions (SDCs) nor the transfer of technology from SNC.*

SDCs were left alone without central technical guidance and subject to political intervention by the *Prefecturas*. This has further affected the technical outcomes of SDCs. Had the government foreseen this outcome, it could have invested time and resources in the design and implementation of a more appropriate institutional set-up.

*(viii) The existing management/information systems were not properly maintained.*

In the case of Bolivia information systems did exist before the decentralization and were administered in the regional SNC's districts under guidance from the center. However, due to the lack of accountability in the new structure, these systems were not properly maintained during the decentralization period, further compounding the accountability problem. This is

particularly the case of the maintenance administration system (SAM) that has been misused and the equipment maintenance system (SAE) for which usage has been almost totally discontinued. As a consequence, there has not been adequate information to assess performance internally and there is not accurate information about the decentralization progress and the difficulties encountered.

### ***Conclusions on the recentralization process***

93. In 1998, the Bolivian administration faced three general options for action regarding the situation of the road management sector: (i) they could put in place a special program to strengthen the decentralized system (which would have included a combination of technical and political actions); (ii) they could reverse the entire process and recentralize all road management responsibilities into a central government organization (or network of organizations); or (iii) they could recentralize only the national network and develop a program to strengthen the capabilities of the SDCs to manage the regional network. It is clear that with Decree 25134 the Government chose to proceed with the third option. This was a reasonable course of action. The situation of the road sector demanded a swift intervention to avoid a further breakdown of the land transportation system, which would have had negative consequences for the entire Bolivian economy. Besides, the difficulties for implementing projects with external financing, of which Bolivia depends heavily for new construction and major rehabilitation, were evident. The prospects for the decentralized system did not look promising. The institutional challenges faced by the SDCs were still significant, even if they were made responsible only for the regional and rural networks. Also, strengthening the decentralized system would most likely have required significant political reforms to establish the popular election of *prefectos*, a process that would take time and would involve a much deeper transformation of the Bolivian system of governance. On the other hand, a complete recentralization of the entire road network did not seem appropriate either. Most of the arguments to decentralize road responsibilities in 1995 were still valid and reversing the entire process would have tremendous technical and political difficulties after only three years from the original reforms.

94. It seems, therefore, appropriate for the Bolivian authorities to intervene by recentralizing only the national road network. For this, the reclassification of the entire road network was a necessary step and a very important one. This was accomplished successfully prior to the issuing of the recentralization decree, thus clarifying and facilitating the scope and rationale of the reform.

95. The GoB has been prompt in trying to solve the main errors of the decentralization process, responding in part to pressures of the international donors and financiers and in part to economic problems arising from the severe deterioration of the roads.

96. The reclassification of the road network in 1998, the recentralization of the primary network management, and the decision to maintain SNC, are steps in the right direction. The new functions that SNC will have to assume in the new setting, along with the deterioration that the institution suffered in the decentralization years, make it absolutely necessary to

restructure it. This restructuring is already underway, following a plan prepared by a consulting firm financed by the IDB.

97. Maintenance by contract is taking hold throughout Bolivia. In the case of the national network, the projects financed by the World Bank will help in consolidating this maintenance modality. Once the system is fully adopted and experience gained, it will be easier to move it to the departments. Unfortunately, it seems that the GoB wants to move faster in this front, and many SDCs are already calling for bids with limited response by contractors thus far.

98. The restructuring of the SDCs is also taking place although in a less consistent way than that of SNC. The policy of decreasing personnel and equipment to a minimum goes counter to a new product line that many SDCs are exploring, providing maintenance of municipal roads. Similarly SNC plans to contract the SDCs to maintain its national roads in the cases in which it does not manage to give them in concession. Under these arrangements, well trained technical and administrative staff will be required.

99. In terms of financing, the privatization of tolls in the largest SDCs has proven to be very effective. This is promising for the departments that have not yet privatized their tolls. The system of departmental transfers still needs to be reviewed to determine their levels and conditions.

100. A law on concessions in the transport sector has been approved and will allow for private investment, although given the low volumes of traffic (only 233 km with more than 3000 vehicles per day, considered as a minimum volume traffic requirement for a concession in order to be financially sustainable) most roads are unattractive.

### ***Recommendations***

101. Now that the recentralization of the national network is completed and the restructuring of the SNC is underway, our recommendations would be:

- To strengthen the model of road administration that the GoB has implicitly adopted: the Central Government (CG) is the owner of the national network; the *Prefecturas* are the owners of the departmental network; and the *Municipios* own the local network. Intersectoral coordination, policy-making and resource allocation should occur politically at the highest level: the Ministry of Economic Development through the Vice-Ministry of Transport for the national network, and the *prefecto* for the *Prefecturas*.
- To proceed with the restructuring of SNC as planned, with main functions: (a) planning, control and design of the entire road network; (b) management of the national network; (c) technical assistance to SDCs; and (d) evaluation and research activities. As part of the planning functions, SNC should maintain databases with key information of each of the three networks. In addition, the present situation is ideal for a review of the existent management systems, from their design to their use and update. Finally the restructuring of SNC is a good opportunity to re-establish and

strengthen the environmental unit, and to find mechanisms to help the SDCs in the creation of their own environmental units.

- To establish for the departmental roads: (a) minimum safety standards; and (b) the conditions for funding of the departmental network with national resources.
- In terms of political aspects, to opt for either placing the *Prefecturas* under a national institution that could supervise and control them, making the reform much more of an administrative deconcentration, or strengthen the decentralization model by allowing the popular election of *prefectos*.
- To create a Road Board or Council with the involvement of representatives of the SNC, the SDCs and road users, for the purpose of intersectoral coordination and supervision. Such a body could also grow to play an important role in the allocation of government funds for investment and to oversee the Road Fund for road maintenance. This Road Board should also allocate the funds between the road networks and the regions.
- In terms of personnel: (a) to develop new policies in terms of human resources management, that would include hiring by open competition, appropriate compensation levels, provision of training opportunities, and re-establishment of professional and technical career tracks, among others; and (b) to accelerate the process of staff reintegration in SNC and SDCs according to those policies.
- To prepare, both at SNC and SDC levels, five-year plans for new investments and major rehabilitation properly backed up with cost and financing forecasts. In this sense we coincide with the recommendations made recently by the Bank in the last Public Expenditure Review.
- To undertake soon a financial study in order to assess whether the new function assignments to the SDCs can be covered with the proposed financial sources.
- Finally to study ways to optimize the public expenditure in roads, exploring the possibility of incremental private sector participation and analyzing the possibility of awarding construction and/or maintenance concessions for selected roads on the basis of public-private partnerships.

## VII. REFERENCES

- World Bank. Alonso Biarge, Jose María." 1998. La Descentralización de la Red de Carreteras en España." Draft. World Bank, Washington, DC.
- World Bank. 1999. Gutman, Jeffrey, Joe Luis Irigoyen, Francisco Wulff. "The Road to Effective Decentralization of Roads, Lessons from the Latin American Experience," in *"Beyond the Center: Decentralizing the State."* World Bank, Washington, DC.
- World Bank. 1996. Humplick, Frannie and Mini-Araghi Azadeh. "Decentralized Structures for Providing Roads. A Cross-Country Comparison." Policy Research Working Paper No. 1658. World Bank, Washington, DC.
- World Bank. Heggie, Ian and Piers Vickers. 1998. *"Commercial Management and Financing of Roads."* World Bank Technical Paper No. 409. World Bank, Washington, DC.
- World Bank. Menéndez, Aurelio. 1997. "Policy Note on the Bolivian Road Sub-Sector." Internal Document. World Bank, Washington, DC.
- World Bank. May 19, 1972. Staff Appraisal Report: Bolivia Second Road Maintenance Project. Report No 10018-BO. World Bank, Washington, DC.
- World Bank. December 1, 1992. Staff Appraisal Report: Venezuela Highway Management Project. Report No. 11063. World Bank, Washington, DC.
- World Bank. July 1991 through June 1998. Supervision Reports: Bolivia Second Road Maintenance Project. World Bank, Washington, DC.
- World Bank. May 15, 1997. Implementation Completion Report: Bolivia Export Corridors Project. Report No 16606. World Bank, Washington, DC
- World Bank. December 1996. Implementation Completion Report: Colombia Second Rural Roads. Report No 16185. World Bank, Washington, DC.
- World Bank. March 1998. Project Concept Document: Abapó-Camiri Project. World Bank, Washington, DC.
- World Bank. April 1999. Project Appraisal Document: Abapó-Camiri Project. World Bank, Washington, DC.

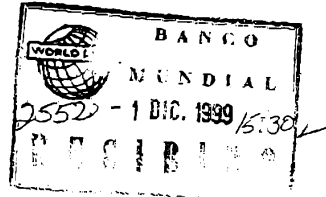


**COMMENTS FROM THE GOVERNMENT OF BOLIVIA**



REPÚBLICA DE BOLIVIA  
MINISTERIO DE HACIENDA  
Viceministerio de Inversión Pública  
Y Financiamiento Externo

La Paz, **30 NOV. 1999**  
VIPFE/DGIP/SEC-02832/1999



Señora  
Deborah Bateman  
**REPRESENTANTE RESIDENTE**  
**BANCO MUNDIAL**  
Presente

**REF.: DESCENTRALIZACION DE LA ADMINISTRACION DE LA  
RED VIAL - EXPERIENCIA EN BOLIVIA Y OTROS PAISES  
AMERICANOS**

*De mi consideración:*

*Adjunto a la presente sÍrvase encontrar el documento preparado por este  
Viceministerio, en el cual se incorporan destacan y complementan conceptos  
formulados y desarrollados por el Banco Mundial sobre el tema de referencia.*

*Con este motivo, saludo a usted atentamente.*

  
Lio Ricardo Simon Pereira  
Director General de Inversión Pública  
VIPFE

cc.: Eunice Reyes  
Dirección General de Financiamiento Externo

**DESCENTRALIZACION DE LA ADMINISTRACION  
DE LA RED VIAL  
EXPERIENCIA EN BOLIVIA Y OTROS PAISES AMERICANOS**

**INTRODUCCIÓN**

1. *El presente documento, pretende incorporar, destacar y complementar conceptos formulados y desarrollados en el documento elaborado por el Banco Mundial, con el propósito básico y fundamental de generar un proceso de discusión que permita obtener un instrumento base de análisis y consideración en la toma de decisiones relacionadas e inherentes al sistema vial nacional y sus organismos competentes.*

**LA SITUACIÓN HASTA 1995**

**Estructura y Funciones**

2. *El Servicio Nacional de Caminos, en esta etapa era responsable de: i) Normar, supervisar y efectuar todo lo relacionado con estudios, construcción, mejoramiento, conservación, mantenimiento y administración de la Red Vial Nacional, ii) Programar, proyectar y ejecutar el mejoramiento adecuado y la expansión de la red caminera nacional, en función de los recursos disponibles y iii) Ejercitar tuición técnica sobre todos los proyectos viales que se desarrollen y ejecuten en el país, debiendo aprobar los documentos pertinentes relacionados con cualquier obra caminera.*

3. *Entidad con autonomía técnico - administrativa, descentralizada del Ministerio de Transportes y Comunicaciones (actual Viceministerio de Transporte, Comunicación y Aeronáutica Civil), que hasta 1995 estaba conformada por la Dirección Nacional, Unidades Operativas Territoriales (Distritos Viales), Residencias y Secciones o Campamentos.*

4. *La jurisdicción o competencia de cada Distrito Vial no necesariamente coincidía con la circunscripción político departamental y/o provincial del país, por ejemplo: i) Residencias o secciones dependientes de la Distrital de La Paz, atendían caminos situados en Oruro, Beni y en La Paz, ii) Residencias o secciones dependientes de la distrital de Potosí, atendían caminos situados en Tarija, Chuquisaca y Potosí, y así muchos otros casos.*

5. *Las Unidades Operativas o Distritos Viales eran once, en los nueve Departamentos de Bolivia; puesto que, en los departamentos de Beni y en Potosí se tenían dos Distritos, las Residencias alcanzan a 49 y las Secciones o Campamentos eran 209.*

6. *Por aspectos de logística y operatividad, se justificaba que los Distritos Viales difirieran en su ámbito de competencia con la división política – administrativa del país; sin embargo, esta estructura generó conflictos, cuando se decidió descentralizar las competencias sobre el sistema vial nacional.*

#### **Fuentes y Organismos de Financiamiento**

7. *Hasta 1995, los proyectos de infraestructura vial bajo responsabilidad del Servicio Nacional de Caminos, eran financiados con fondos del Tesoro General de la Nación, Recaudaciones del Peaje, Prestación Vial y Financiamiento Externo (Créditos Reembolsables y no Reembolsables).*

#### **Conflictividad**

8. *Un aspecto, que incidió en el progresivo deterioro de la competencialidad del SNC, sobre el sistema vial nacional, fue la creación de las Corporaciones Regionales de Desarrollo, entidades autárquicas, que entre sus funciones estaba incorporada la construcción, mejoramiento y expansión de la red vecinal.*

9. *Hasta mediados de la década de los '70, el SNC era responsable total de las tres redes que conformaban el sistema vial nacional (fundamental, complementaria y vecinal), a partir de la creación de las Corporaciones Regionales de Desarrollo (CRD's), se originó un conflicto de competencias relacionadas con la red vial vecinal y en menor grado la red departamental que, en muchos casos derivó en una duplicidad de inversiones y en la toma de decisiones relacionadas con la estrategia de desarrollo vial de dichas redes.*

10. *Una decisión, errónea, que se asumió, fue delimitar la competencia geográfica entre el SNC y las CRD's, por ejemplo, el Distrito Vial de La Paz, no atendía las regiones norte y sur (las Provincias Larecája, Iturralde, Franz Tamayo, Muñecas, Saavedra, Loayza, cayeron en bajo la égida de la CDR La Paz), similar situación aconteció en Chuquisaca, Tarija, etc., al no tener las CRD's la capacidad técnico - administrativa y financiera del SNC, su accionar fue deficiente e insuficiente, que derivó en un escaso mejoramiento, expansión, conservación y preservación de la red vecinal.*

11. Otro factor que fue diluyendo las atribuciones del SNC, fue la creación de los Fondos de Desarrollo, que comenzaron a realizar inversiones en las áreas urbanas y suburbanas de las carreteras nacionales, caso del Fondo Nacional de Desarrollo Regional y en las carreteras rurales caso del Fondo Social de Emergencia (actual Fondo de Inversión Social) y el Fondo de Desarrollo Campesino. Esto se consideraría positivo si hubiera existido una coordinación con planes, políticas y estrategias que tenía en materia vial el SNC en dichas áreas, pero dicha institución nunca tomó ni tuvo conocimiento de las inversiones que se iban realizando.

12. En este período las Administraciones Departamentales (Prefecturas de Departamento), no obstante de contar con una Unidad de Infraestructura Vial, tenían un accionar mínimo por las deficiencias técnico, administrativas y financieras, su accionar estaba centrado en aspectos de orden político interno.

13. Además de ir perdiendo competencia el SNC confrontaba problemas originados por el centralismo, como: i) Concentración de inversiones, ii) Discrecionalidad de la inversión; iii) Sumisión de las decisiones sobre expansión, administración, explotación y conservación del sistema vial nacional a la coyunturalidad política; iv) Bajos niveles de mantenimiento y conservación del sistema vial; v) Uso inadecuado e inapropiado de los fondos provenientes de las recaudaciones por concepto de peaje; vi) Gradual y paulatina pérdida de credibilidad y recursos humanos especializados.

#### **Conclusión**

14. La problemática y conflictividad existente en el sector transportes, particularmente en el Servicio Nacional de Caminos, derivó en la decisión de descentralizar el Sistema Vial Boliviano, acompañando la Descentralización Administrativa; sin embargo: i) La premura, ii) La falta de planificación, ; iii) La falta de especificidad en los instrumentos de descentralización; iv) La inexistencia de instrumentos de gestión, fueron elementos gravitantes para que el proceso de descentralización no alcanzara el éxito deseado y esperado.

#### **PROCESO DE DESCENTRALIZACIÓN (PERÍODO 1995 – 1997)**

15. La descentralización del Servicio Nacional de Caminos, fue estatuida por las siguientes Leyes y Decreto Supremos.

##### **Ley 1654, de Descentralización Administrativa**

16. En el Artículo 20º, se establece que los recursos de uso y dominio departamental provienen de las regalías departamentales creadas por Ley, de

*los recursos del Fondo Compensatorio departamental, creado por Ley 1551, del 25% de la recaudación efectiva del Impuesto Especial a los Hidrocarburos y sus derivados, etc.*

*17. En el Artículo 23° se establece la obligatoriedad que tienen las Administraciones Departamentales de destinar recursos para la amortización de la deuda de los créditos asumidos y administrados por las Prefecturas.*

**DECRETO SUPREMO No. 24215**

*18. En el Artículo 3°, Inciso c), se establece que las Prefecturas de Departamento deberán asignar los recursos presupuestarios para la construcción y mantenimiento de caminos, asegurando el cumplimiento de los convenios internacionales y de acuerdo a las prioridades establecidas en el artículo 6 del citado decreto supremo.*

*19. En el Artículo 6°, se establece que el Prefecto asignaría los recursos presupuestarios para inversión, mantenimiento, estudios y construcción de carreteras de interés general del Estado.*

*20. Con la aplicación de la Ley de Descentralización Administrativa en el Servicio Nacional de Caminos, se buscaba principalmente: optimizar el nivel de eficiencia técnico-administrativa y posibilitar la participación de las regiones en el análisis y diseño de la problemática relacionada con la planificación, construcción, operación, administración y mantenimiento de la infraestructura vial.*

*21. El proceso de descentralización vial, se vio cuestionado, cuando problemas originados en el Centralismo persistieron e inclusive muchos se profundizaron, generando otros que la administración central evitaba. Fundamentalmente pueden enunciarse:*

- Bajos niveles de mantenimiento y conservación del sistema vial*
- Escasos recursos destinados al mantenimiento y conservación del sistema vial*
- Administración y uso discrecional de la tasa de rodaje*
- Administración, Explotación y Conservación deficiente de las Principales Carreteras del País*
- Política de Desarrollo Vial Regional Vs. Política de Desarrollo Vial Nacional*
- Cofinanciamiento de Proyectos de Interés Nacional o Bi - departamental*
- Aporte Local en Proyectos con Financiamiento Externo*
- Distribución inadecuada, inapropiada y no organizada de recursos humanos y físicos a los Servicios Departamentales de Caminos*

- *Falta de canales de relación y coordinación entre los nuevos organismos viales*

#### **Mantenimiento y Conservación de las Redes Viales**

22. *La escasa generación y captación de recursos en los departamentos no situados en el eje, originó que éstos limitaran o restringieran los fondos destinados a la conservación y/o mantenimiento de la infraestructura vial.*

23. *Con el propósito de eliminar desigualdades en la gestión vial de mantenimiento y conservación de la infraestructura, se hacía necesario analizar, incentivar y otorgar asistencia técnico - financiera a las nuevas organizaciones departamentales, responsables del mantenimiento y conservación del sistema vial nacional. Sin embargo, este aspecto no se normó ni reglamentó.*

#### **Administración y Uso de la Tasa de Rodaje**

24. *Los antecedentes demuestran que durante la administración centralizada del sistema vial se presentaban problemas en la captación, administración y utilización de los recursos generados por el cobro de la tasa de rodaje, principalmente:*

- *Debilidad en el sistema de cobro.*
- *Debilidad institucional en los sistemas de control.*
- *Mala administración y uso inadecuado e inapropiado de los fondos.*
- *Mínimo porcentaje de los recursos destinados al mantenimiento de la red vial*

25. *De estos problemas muchos persistieron durante la descentralización, por falta de regulación y definición principalmente en lo que se refiere a:*

- *Mecanismos de cobro y control.*
- *Alcance y sistemas de administración.*
- *Empleo transparente y adecuado de los recursos.*
- *Participación privada en el cobro, administración y utilización de los recursos.*

#### **Administración, Explotación y Conservación de las Principales Carreteras del País**

26. *La clasificación establecida y empleada por el SNC (redes fundamental, complementaria y vecinal) quedó desactualizada, puesto que carreteras de la anterior red fundamental dejaron de ser principales y caminos de la red complementaria o vecinal pasaron a ser estratégicos o importantes para la*

*vinculación nacional e internacional.*

***Cofinanciamiento de Proyectos de Interés Nacional o Bidepartamental***

*27. Como se establece en la ley de descentralización administrativa, las Prefecturas de Departamento asumieron la responsabilidad de financiar los proyectos de infraestructura vial. Sin embargo, proyectos de interés nacional fueron perdiendo trascendencia e importancia ante el surgimiento de proyectos de prioridad regional.*

*28. Por ello, se hacía necesario instituir una Entidad que diseñe, norme y regule las políticas de infraestructura vial, haciendo prevalecer la prioridad e importancia que tienen los proyectos de interés nacional sobre aquellos de carácter departamental, regional o local.*

***Aporte Local en Proyectos con Financiamiento Externo***

*29. Uno de los principales efectos de la descentralización administrativa fue la transferencia por parte del Tesoro General de la Nación de la responsabilidad financiera de cubrir el aporte local a los tesoros departamentales, principalmente en los proyectos con financiamiento externo, con los recursos indicados e el punto 16, del presente documento..*

*30. No obstante de haberse distribuido a las Administraciones Departamentales los recursos para el cumplimiento de las obligaciones transferidas, también se crearon nuevas responsabilidades, resultando que éstas superaban a los recursos. La escasa capacidad de gestión para administrar los recursos transferidos originó el surgimiento de retrasos en el pago de los aportes locales.*

*31. Era evidente que en este período se hacía necesario e imprescindible desarrollar una normativa específica donde se regule y defina:*

- Procedimientos para la transferencia de recursos del aporte local*
- Plazos y período de pago del aporte local*
- Sanciones y penalidades por incumplimiento del pago del aporte local*

*32. Sin embargo, la ausencia de previsiones, la no adopción de medidas adecuadas y pertinentes, desencadenó que durante el período de descentralización los proyectos con financiamiento externo, atravesaran diversos problemas, de los cuales muchos aún no han sido superados.*

***Préstamos y Cooperación Externa para Infraestructura Vial***



33. *Un tema que no fue debidamente analizado, se refería a la incidencia que tendría en las finanzas departamentales, la transferencia de la responsabilidad de cubrir la amortización de capital e intereses correspondiente a los préstamos que se contrajeron desde la promulgación de la Ley de Descentralización Administrativa, para la ejecución de proyecto de infraestructura vial. Este procedimiento iba a terminar ahogando a corto plazo la economía y finanzas de las regiones más débiles (no situados en el eje) y, a mediano plazo de los departamentos situados en el eje.*

34. *Considerando que los programas de inversión pública de las Prefecturas de Departamento, son financiados con recursos propios, transferencias del gobierno central, créditos internos y externos (reembolsables y no reembolsable), su capacidad de endeudamiento se hubiera visto disminuida al mínimo o alcanzarían niveles de inviabilidad financiera.*

***Procedimientos de transferencia de recursos humanos y físicos a los Servicios Departamentales de Caminos, inadecuados, inapropiados y no organizados***

35. *La descentralización del Servicio Nacional de Caminos, también comprendió la transferencia de recursos humanos, equipos, bienes muebles e inmuebles; sin embargo, las diferencias entre la división político - administrativa y vial, originó una desigual y desequilibrada distribución, donde las regiones con mayor capacidad de gestión, organización y recursividad obtuvieron mayores beneficios.*

***Falta de Canales de Relación y Coordinación entre Nuevos Organismos Viales***

36. *La desaparición y desintegración del Servicio Nacional de Caminos, fue postergada hasta que concluyeran los proyectos que eran ejecutados con financiamiento externo, empero, en esta etapa, carecía de atribuciones y competencias sobre temas inherentes a la infraestructura vial.*

37. *La restricción de funciones del SNC, la falta de una clara y específica norma que reglamente e instituya la inter-relación y coordinación entre los nuevos SDC's, originó un profundo y discrecional accionar de cada entidad.*

38. *La ambigüedad en la disposición de la dependencia estructural y organizativa de las nuevas entidades viales, generaba que el accionar de éstas se halle sujeto a decisiones de las máximas autoridades departamentales, sumiendo las estrategias de desarrollo vial a la conyunturalidad política.*

### **PROCESO DE CENTRALIZACIÓN DE LA RED FUNDAMENTAL**

39. Al haber sido antes de la descentralización, el Servicio Nacional de Caminos, la entidad responsable de la planificación, diseño, fiscalización, administración, mantenimiento y operación del sistema vial, contaba con la mayor concentración de experiencia en el subsector infraestructura vial, debido a que aún mantenía su estructura y organización en las áreas: i) Administrativa – Financiera; ii) Técnico – Operativa y iii) Planeamiento y Política Vial, este aspecto, facilitó que se tomé la decisión de restituir el Servicio Nacional de Caminos, otorgándole funciones y atribuciones específicas sobre la Red Fundamental.

40. La re - estructuración del SNC, debería permitir que sobre la base del fortalecimiento de las áreas técnica, operativa, de planeamiento y política vial, se transforme en una entidad técnica antes que administrativa. El proceso de restitución del Servicio Nacional de Caminos, se basó en las siguiente normatividad.

#### **Ley 1788, de Organización del Poder Ejecutivo**

41. En el Artículo 18º, de dicha Ley, se estableció que la planificación, construcción, mantenimiento y administración de las carreteras de carácter nacional son de competencia del Servicio Nacional de Caminos, debiendo el Poder Ejecutivo clasificar, mediante Decreto Supremo, el carácter nacional, departamental y municipal de las vías camineras.

#### **DECRETO SUPREMO No. 25134**

- Se determinan las carreteras que formarán parte de la Red Vial Fundamental.
- Se reglamentan las condiciones mínimas que debe cumplir una carretera departamental o municipal para ser jerarquizada a carretera nacional.
- Se establece como responsabilidad del TGN, cubrir el servicio de la deuda, correspondiente a los préstamos contratados, o que se contratarán, para ejecutar proyectos de infraestructura vial, obligación que fue transferida a las Prefecturas de Departamento, a partir de la promulgación de la Ley 1654 de Descentralización Administrativa.
- Se establece que las Prefecturas de Departamento serán responsables de cubrir el aporte local en proyectos de la Red Vial Fundamental que se ejecutan o ejecutarán con financiamiento externo.
- Se determina que los recursos necesarios para efectuar el mantenimiento "rutinario" de la red vial fundamental provendrán del 70% del cobro del peaje.
- Se transfiere la responsabilidad de la administración del cobro del peaje en las carreteras de la Red Vial Fundamental al Servicio Nacional de

*Caminos.*

- *Se establecen competencias y obligaciones del Servicio Nacional de Caminos en la planificación, construcción, mantenimiento y administración de las carreteras de carácter nacional.*

**Conflictividad e Insuficiencia Normativa y Reglamentaria**

*42. El proceso de restitución del Servicio Nacional de Caminos, aún adolece de deficiencias e insuficiencias, principalmente debido a la falta de previsión en la formulación, aprobación e implantación de normas complementarias.*

*43. Aún persisten retrasos en el pago de los aportes locales, por lo que se hace necesario desarrollar una normativa específica donde se reglamente y definan: i) Procedimientos para la transferencia de recursos del aporte local; ii) Plazos y periodos de pago del aporte local y iii) Sanciones y penalidades por incumplimiento del pago del aporte local*

*44. Normatividad, reglamentación que contenga decisiones y determinación sobre las carreteras que formarán parte de las redes departamental y vecinal*

*45. Reglamento del Decreto Supremo No. 25134, en el cual se establezcan las condiciones mínimas que debe cumplir una carretera de la Red Departamental o Vecinal para ser jerarquizada a la Red Fundamental.*

*46. Reglamentación, Decreto o Norma que redefina y establezca atribuciones, funciones, obligaciones y competencias del Servicio Nacional de Caminos.*

*47. La estructura funcional y organizativa del Servicio Nacional de Caminos no es adecuada ni coherente con su nuevo rol; puesto que, aún mantiene: i) Estructura heredada de su anterior etapa; ii) Sumisión de los niveles de decisión a la coyunturalidad política; iii) Deficiente estructuración técnico – operativa; iv) Procesos administrativos pesados y burocráticos;*

*48. Indefiniciones sobre inter-relación y coordinación entre el Viceministerio de Transporte, Comunicación y Aeronáutica Civil, Servicio Nacional de Caminos y Servicios Prefecturales de Caminos.*

*49. La Ley 1874 "Ley General de Concesiones de Obras Públicas de Transporte", el Decreto Supremo No 25253 "Reglamento Orgánico de la Ley General de Concesiones de Obras Públicas de Transporte", posibilitan que intereses privados tengan participación en actividades que antes eran exclusivamente realizadas por el Estado; sin embargo, se presentan vacíos y conflictos de competencialidad y atribuciones específicas entre el Servicio*

*Nacional de Caminos, la Dirección General de Concesiones y la Superintendencia de Transportes.*

### **CONCLUSIONES**

*50. Analizado el proceso de competencia y tuición sobre el sistema vial nacional, se establece que:*

- La normatividad existente impide que se asuma un proceso totalmente centralizado*
- No existe suficiente capacidad técnica, administrativa, económica y financiera en las Administraciones departamentales para adoptar un sistema totalmente descentralizado.*
- El sistema en actual vigencia, no obstante de presentar deficiencias y tener observancias, será viable si se adoptan las decisiones necesarias, pertinentes y suficientes para permitir un desarrollo coherente, consensado y coordinado entre los estamentos responsables del sistema vial nacional.*

*51. Para el efecto, el Servicio Nacional de Caminos, además de ser responsable de la Red Vial Fundamental debe asumir y se le debe otorgar el papel protagónico en todo lo relacionado con los aspectos técnicos de la política vial nacional y otorgarle esencialmente el carácter y estructura de entidad de coordinación y consenso entre el Gobierno Central y las organizaciones viales de las Prefecturas de Departamento.*

MAP NO. IBRD 30220

