Document of

The World Bank

FOR OFFICIAL USE ONLY

Report No. 14735

IMPLEMENTATION COMPLETION REPORT

COLOMBIA

SECOND NATIONAL HIGHWAYS SECTOR PROJECT
(LOAN 2829-CO)

JUNE 30, 1995

Infrastructure and Operations Division
Department III
Latin America and the Caribbean Region

CURRENCY EQUIVALENTS

Currency Unit	=	Colombian Peso (Col $)
US$ 1	=	Col $ 225.0 (mid - February 1987)
Col $ 1,000	=	US$ 4.44

WEIGHTS AND MEASURES

Metric		British/US Equivalent
1 meter (m)	=	3.281 feet (ft)
1 kilometer (km)	=	0.62 mile (mi)
1 kilogram (kg)	=	2.20 pounds (lb)
1 metric ton (m ton)	=	2,205 pounds

FISCAL YEAR OF BORROWER

January 1 - December 31

ABBREVIATIONS AND ACRONYMS

COLFECAR	Colombian Union of Road Transports
COLPUERTOS	Colombian Port Authority
CONPES	National Council for Economic and Social Policy
DNP	National Planning Department
DRI	Integrated - Rural Development Fund
DTF	Directorate of Fluvial Transport - MOT
ERR	Economic Rate of Return
FERROVIAS	Colombian Institute of Railways
FNC	Colombian National Railways
FNCV	National Rural Roads Fund
FONADE	National Development Fund
FVN	National Highway Fund
GAM	Highway maintenance unit (MOPT)
ICR	Implementation Completion Report
INTRA	National Transport Institute
INVIAS	National Institute of Roads
MOPT	Ministry of Public Works and Transport (from 1976 onward)
MOT	Ministry of Transport (from 1993 onward)
PROVIAL	Roads Maintenance Program
SAR	Staff Appraisal Report
SGP	General Superintendency of Ports
SPWs	Secretariats of Public Works (Departmental)
UEAC	Civil Aviation Special Unit
UNCTAD	United Nations Conference on Trade and Development

TABLE OF CONTENTS

IMPLEMENTATION COMPLETION REPORT

COLOMBIA

SECOND NATIONAL HIGHWAYS SECTOR PROJECT

LOAN 2829-CO.

PREFACE

This is the Implementation Completion Report (ICR) for the Second National Highways Sector Project in Colombia for which Loan 2829-CO of US$180.3 million equivalent, was approved on October 8, 1987. The original closing date was December 31, 1993. The Loan was fully disbursed, and the last disbursement took place on June 30, 1994, without extension of the original closing date.

The ICR was prepared by Mr. Jose Luis Irigoyen (LA3IN), Messrs. Stan Kowalski and German Silva (Consultants) of the Latin America and the Caribbean Region, and reviewed by Mr. Peter Ludwig (Division Chief, LA3IN) and Mr. Robert Crown (Project Adviser, LA3DR).

Preparation of this ICR was begun during the Bank's final supervision/completion mission in June 1994. It is based on material in the project files. The borrower contributed to the preparation of the ICR by contributing views and providing comments on the draft ICR which have been incorporated into the final document.

EVALUATION SUMMARY

SECOND NATIONAL HIGHWAY SECTOR PROJECT

LOAN 2829-CO

COLOMBIA

Introduction

i. Seven highway projects and one highway sector project had been financed previously by the Bank in Colombia.

Project Objectives

ii. The project was designed as a Sector Project. As described in the Loan Agreement, the main objective of the project was to assist the Borrower in the execution of its 1987-1993 Highways Program by: (a) financing the execution of technically and economically feasible subprojects; and (b) providing technical assistance.

Implementation Experience and Results

iii. While the achievement of development objectives was only marginally satisfactory, with its strong sector policy content, the project in contrast contributed to shaping key institutional reforms, making Government policy makers focus on the need for a reform and recognize its potential advantages producing a satisfactory result. The achievements in MOPT's internal efficiency improvements were mixed and the upgrading of the condition of the national highway system fell short of expectations (para. 2).

iv. SAR estimated targets entailed (1) rehabilitation of about 800 km of paved roads and 3,000 km of gravel roads, (2) paving of about 1,000 km of gravel roads, and (3) periodic maintenance over about 2,400 km of paved roads. Under the project, about 740 km of paved roads were rehabilitated (or 94 percent of the initial target), and 575 km of gravel roads were paved (or 57 percent of the initial target). The IRR of a sample of 16 subprojects (out of 83 subprojects) shows that on average the IRR was reduced by half when compared with appraisal estimates. On average, construction time was 3.2 times that of the appraisal and actual cost 2.1 times the appraisal estimate. In all cases, shortfalls in budget allocations were reported as the main causes of the delays and related cost overruns (paras. 14-16).

v. Several key factors produced cost increases and delays in the execution of most of the 83 road subprojects. Rather than conventional cost overruns, these cost increases involved changes in the physical targets of the original contracts and included betterment works justifying higher costs than expected for rehabilitation and paving. The four main categories of factors accounting for cost increases and construction delays: i) contract administration practices; ii) changes in engineering standards introduced during construction.; iii) emergencies due to both natural phenomenon as well as security problems; iv) contractors lack of operational capacity (para. 17).

vi. Further influencing factors include i) consultant services for preparation of the Transport Master Plan and the Computerized Management Information System were deployed too late (due to budgetary constraints) to enable implementation of their recommendations within the project timeframe; ii) the SAR price contingency estimates were lower than actual local cost increases; iii) auditing of MOPT financial statements and the Loan special account occurred with substantial delays since the project accounts were below acceptable standard. Supported by the ongoing Loan 3453-CO, consultants are assisting INVIAS in putting in place proper accounting systems (para 19-21).

Bank Performance

vii. The SAR was a comprehensive document on sector policy reform, well received by the Borrower, although quite limited and general with regard to the investment components. The Bank played a key role in shaping the transport sector policy reforms and continues supporting their implementation through technical assistance provided under the follow on Loan 3453-CO (Third National Roads Sector Project) approved in 1992. More effort should have been given to align the project more closely with the Government's budget cycle. The SAR did not adequately identify the subprojects or their physical targets. Project supervision utilized 65.3 staff weeks during the implementation period. Eleven supervision missions visited MOPT and later MOT and INVIAS (paras. 27-32).

Borrower performance

viii. Government fully supported the project's sector policy reform component and during the period 1987-1994 took actions directed towards opening-up the economy, promoting exports, easing up of trade and reducing transport costs. These measures provided an appropriate framework for the major institutional reforms aimed at decentralizing government and improving efficiency through increased private sector participation in transport sector operations (para. 33).

ix. Structural difficulties with the government's budgetary system impose severe constraints for adequate management. There is a significant level of political interference associated with the presentation of the investment budget to Congress for approval and excessive dependence on the transfer of funds from Treasury creating a recurring shortage of counterpart funds (paras. 34-35).

x. Weakness of MOPT's contract administration and budgeting practices was evident during project implementation and the institutional strengthening component of the project was not perceived as a high priority by MOPT's Technical Secretariat. The lack of a computerized project information system made adequate monitoring practically impossible (paras 36-37).

Summary of Findings

xi. Overall, the project's outcome can be considered as marginally satisfactory. The majority of the sector policy objectives were achieved in a satisfactory manner. The outcome of MOPT's institutional efficiency component was mixed. The Transport Master Plan and the Computerized Management Information System were completed, though too

late to implement them within the project's timeframe. The personnel training program was carried out partially. The achievement of the physical targets envisaged in the SAR was partial, namely about 94 and 57 percent of the targets planned for road rehabilitation and paving, respectively. By increasing the percentage of Bank financing from 42 to 70 percent, the Bank contributed to speeding up project implementation, but at the expense of not achieving the physical targets stated in the SAR (paras 38-39).

Future Operations

xii. Government is taking actions that will eventually contribute to ensuring project sustainability and maximizing project benefits. A possible Bank transport project, tentatively scheduled for FY97, would assist the Government in (1) exploring the possibility of transforming INVIAS into a public corporation, as a means to mitigate political interference, strengthen management capacity, and increase financial autonomy and accountability, and (2) putting in place a better framework for private sector financing and management of road infrastructure, as a means to bring more efficiency to the sector (para 40).

Lessons Learned

xiii. More attention should be given to defining a set of performance indicators and developing a logical framework under which each project component fits and is clearly linked with the stated objectives. The project financed a large number of road subprojects scattered throughout the country, selected more to reflect a regional balance than strategic decisions directed to have a greater impact on transport system performance (para 48).

xiv. The operational aspects (budgeting procedures, flow of funds and accounting) of a project should also receive more attention during project preparation and be candidly discussed with the various governmental agencies involved before starting project implementation. A computerized management information system is a key component (para 49).

xv. Loan covenants constitute a key element of the Bank's assistance in the development process by guiding project implementation and helping Government focus on those actions that will produce the long lasting benefits expected from the project. In this project, loan covenants were designed to assist the Borrower in speeding up the strengthening of its institutional and operational capacity (para 50).

xvi. Incomplete and poor engineering studies were one of the most critical factors that delayed and led to cost increases in the execution of the works financed under this project. In 1993, INVIAS adopted new terms of reference and guidelines for engineering studies; bidding for construction is now delayed until the engineering studies are made available (para 51).

xvii. Institutional changes. The institutional changes had a toll on the productivity of the agencies affected by the reform process. The new organization structure was not easily understood and hindered day to day operations by those having to interact with it (para 52).

IMPLEMENTATION COMPLETION REPORT

COLOMBIA

LOAN 2829-CO

I. PROJECT IMPLEMENTATION ASSESSMENT

1. STATEMENT OF OBJECTIVES

1. The project was designed as a Sector Project. It included a policy reform and institutional improvement Action Plan, which provided the framework for an investment component financed under the project. As described in the Loan Agreement, the main objective of the project was to assist the Borrower in the execution of its 1987-1993 highways Program by: (a) financing the execution of technically and economically feasible subprojects; and (b) providing technical assistance[1].

2. ACHIEVEMENT OF OBJECTIVES

2. The achievement of development objectives was marginally satisfactory. With its strong sector policy content, the project contributed to shaping key institutional reforms in the sector, making Government policy makers focus on the need for reform and its potential advantages (paras. 3-8). Though some of the reforms are yet under implementation and will take some additional time to see their results, the project's achievement in this respect is indeed satisfactory. However, the achievement of MOPT's internal efficiency improvements (paras. 9-13) and the upgrading of the condition of the national highway system (paras. 14-16) fell short of expectations, producing mixed results.

3. **Overview of Major Reforms in the Transport Sector**. Between 1988-1993, the Colombian Government embarked on a series of reforms designed to modernize transportation operations through restructuring the management, planning, coordination and control functions in the transport sector, and reorganizing the execution of public works. These efforts were substantiated in support of a policy of opening the economy to international competition and lowering protection for national industries and services,

---

[1] As described in the SAR the main objectives of the projects wer to:

(a) Formulate Sector policy reform (1) improving equity in recovery from road users, (2) easing transport regulation and trade facilitation, and (3) improving resource allocation;

(b) Improve MOPT's internal efficiency through strengthening (1) procedures for preparation and monitoring of transport expenditure programs, (2) road maintenance management, (3) civil works contract administration, and (4) personnel training;

(c) Upgrade the condition of the national highway network reducing overall transport costs through financing a time-slice of MOPT's 1987-1993 highway program, predominantly in road rehabilitation, maintenance, paving, and safety.

which increased export and import volumes between 1988-1990 by 31 and 12 percent, respectively. In the ports subsector, COLPUERTOS, the public entity in charge of the operation of the five public ports was liquidated in 1991 (Ports Law) and replaced by a three-tier structure: (1) the *Superintendencia de Puertos* as the regulatory agency for the subsector, (2) the *Sociedades Portuarias* as independent port administrators with more than 70 percent in private hands, and (3) the *Operadores Portuarios*, private sector companies which undertake port operations. Stevedoring costs are said to have gone down from about S$21 per ton to around US$9/10, and port tariffs have dropped by more than 40 percent. Flag law protection, applied in Colombia in the last decade, was also eliminated. The railway sub-sector was reorganized replacing the Colombian National Railways (FEN) with (1) FERROVIAS, a public entity responsible for the infrastructure and the awarding of operating rights to private operators, and (2) private operators, who are charged a toll for the utilization of the tracks. The latter reform did not materialize in sub-sector improvements because of differences between the public utility and the private operators on the operational gains realized or to be realized through the rehabilitation and maintenance programs carried out by FERROVIAS.

4. In 1992, Government passed Decree 2171 (1) transforming the Ministry of Public Works and Transport (MOPT) into a Ministry of Transport (MOT), responsible only for planning and policy making, not its execution, (2) eliminating the National Highway Fund (FVN) and entrusting to a new autonomous agency --the *Instituto Nacional de Vias* (INVIAS)-- management of a well-defined network of import/export corridors and trunk roads, (3) eliminating the National Institute for Transport (INTRA, partly responsible for road transport regulation and enforcement), and by end-1995, the Rural Roads National Fund (FNCV) as well as MOPT's field districts (the latter in support of a policy to contract out all works, including maintenance).

5. Subsequently, in 1993, Congress approved the Transport Law which provided the legal framework for the redistribution of responsibilities over transport infrastructure among central government, departments and municipalities. The law (1) mandates central government to transfer to the departments responsibility over a substantial portion of the national road network (about 14,000 km) and all rural roads currently managed by FNCV (about 20,000 km), in total about 32 percent of the road system, as well as the resources needed to maintain or improve these roads through a new *Road Co-financing Fund*, (2) establishes the policy that transport user-charges should guarantee the full recovery of infrastructure maintenance, operation and development, and gives ample powers for departments and municipalities to charge tolls, tariffs, betterment levies and surcharge taxes on gasoline prices, for the sole financing of transport infrastructure, (3) allows the departments to restructure their road agencies, including the possibility of establishing autonomous private/public entities with capacity to issue bonds, contract loans, etc., and (4) provides the basic framework for the franchising of infrastructure facilities to the private sector. The devolution of roads to the departments requires careful planning (the law establishes a three-year timeframe) because the departments have varying road management capabilities and resources, and the transfer process must be undertaken along with the restructuring and definition of road maintenance financing mechanisms.

6. **Reforming Road Sector Policy**. Cost-recovery from road users was substantially improved through increases in gasoline prices and road tolls. Tolls have been raised in nominal terms on an annual basis, and since 1989, a new category for heavy vehicles with five or more axles was introduced to improve equity. Still, there is an imbalance between user charges contributed by light and heavy vehicles and the road damage they produce, in favor of the latter. Highway expenditures used to be funded through the National Highway Fund, which mainly consisted of proceeds of the tax on fuel products (61 percent in 1991), highway tolls (20 percent) and external loans, until it was abolished in 1991 when the new Colombian Constitution suppressed the earmarking of taxes. Presently, road user charges exceed current expenditures in the sector but will cover only 90 percent of the total cost of maintenance, rehabilitation and improvement of the national public road network needed to support an increase in road investments from 1 percent of GDP in 1990-94 to around 2.5 percent for the period 1995-98; conversely, at the subnational level, revenue would merely cover 15 percent of the projected needs. A study on road funding strategies and user charges is underway to enhance the structure of road user charges in order to meet the requirements established under the Transport Law.

7. Government eased trade and transport regulations. The Trade Code was modified with regard to transport and insurance, introducing multimodal transport of goods (decree 01/90). As a result of improvements, imports of heavy trucks (mostly trailers) increased 200 percent in 1992, adding to the efficiency of the fleet. Government restructured the National Customs Agency streamlining export and import procedures in support of the opening up of the economy, and passed new legislation which eliminates port and in-route inspections, thus facilitating the use of containers. Also, legislation passed in 1990 restructured INTRA into a normative organization in transport and transit. Furthermore, Decree 2171 of 1992 eliminated INTRA, passing its responsibilities on to the restructured Ministry of Transport.

8. To improve allocation of public investments, MOPT hired consultants to develop the Transport Master Plan. Because of delays in the recruitment of consultants and completion of the preparatory works and models, the plan was developed too late to implement it within the project's time-frame. The Master Plan Model and database system is appropriate for strategic planning purposes and supports the prioritization of investment in a long term perspective. It has also served to initiate inter-subsectoral coordination and the development of a comprehensive transport database. However, additional effort is required to make the system suitable for short term investment decision analysis, policy analysis, and basic display of information for use in the monitoring, coordination and regulation of the transport sector, which are also part of the responsibilities entrusted to the restructured Ministry of Transport. Due to transformation of MOPT into MOT most of the people familiarized with the operation of the transport models have left MOT. On-going efforts to train personnel in the implementation and routine operation of the computerized transport models should continue. Furthermore, additional efforts should also be made to achieve the sustained inter-subsectoral coordination entrusted to MOT.

9. **Improving MOPT's Internal Efficiency**. MOPT's internal efficiency improved slightly during the project execution. The main actions envisaged in this regard covered improvements in MOPT's (1) sector managerial and budgetary processes, (2) road maintenance management, (3) civil works contract administration, and (4) personnel training.

10. Development of the computerized management information system for monitoring the subproject portfolio, pluriannual rolling expenditure and funding programs took much longer than anticipated. The consultants were deployed late and it was not until April 1994 that most of the system was ready for implementation. The follow-on Loan 3453-CO is financing implementation of the system and its adjustment to the new institutional setting. Very little progress was made with regard to improving accounting and internal control systems (see para. 21).

11. A highway maintenance unit (GAM) was established within MOPT to prepare annual maintenance plans and monitor their implementation. The unit's staff was trained to keep up with the road inventory and formulate performance maintenance programs involving microenterprises to carry out labor-based activities and force account and contractors to carry out equipment-based activities and drainage improvements. The unit has been producing these annual programs since 1992, and regularly monitors compliance with them on a quarterly basis. In addition, the unit was charged with operating the HDM-III model to conduct economic evaluation and prioritization of road investments for MOPT's Planning Office. The unit now is part of the core team under the Directorate of Maintenance created within INVIAS. On the other hand, improvement of quality control for road maintenance operation was not fully achieved. These efforts are being pursued under technical assistance funded through Loan 3453-CO. Contracting out of maintenance activities was substantially increased. Moreover, as part of the reform launched in December 1992, about 10,000 workers are being retrenched in the three-year period allowed by legislation; MOPT's equipment fleet is being sold mainly to new small-enterprises formed by former workers with a view to contracting out their services to undertake road maintenance. Though some fixed and portable scales were purchased to control truck overloading, only one station has been in operation in a consistent manner. An adequate strategy to address road traffic overloading is still lacking.

12. Contract administration remained weak. MOPT revised the cost adjustment formulae used to compensate for price escalation due to inflation. Though the new system is adequately tailored to reflect local costs, contract escalation continued to be a major issue due to the frequent need to amend contracts in order to include additional work quantities. The intended streamlining of bidding and contract administration practices was not achieved. Coordination between MOPT's Technical Secretariat and Legal Office also remained weak. MOPT hired consultants to update design standards and technical specifications, but the resulting manuals were rejected by MOPT and local professional agencies. A task force is now revising them in the context of the on-going Loan 3453-CO. The study on sources of road construction materials was not carried out, but MOPT

contracted the Universidad Nacional to prepare an inventory of landslides along the highway network.

13. Training of MOPT's staff was carried out partially, mostly through short trips abroad and training courses in Colombia organized by local universities and MOPT. However, this was an area that received very little attention before 1990. In 1991 MOPT decided not to remodel the training center in Bogota because its location was not appropriate for training activities, and decided instead to strengthen coordination with external sources. Several education and training programs are now being delivered through agreements with local universities (most notably a comprehensive program run by the University of Cauca which also includes research in the area of pavement materials behavior). Only US$0.5 million was spent on training out of the US$2 million estimated in the SAR. Under INVIAS, the new road organization, much more attention has been assigned to training.

14. **Upgrading the Condition of the National Highway Network**. MOPT's 1987-1993 road investment and maintenance program was overly ambitious and its formulation was not based on reliable cost data. Though its implementation no doubt contributed to improving the condition of the road network, it did not meet the planned targets. The Bank loan was to finance only about 11 percent of this program. SAR estimated targets entailed (1) rehabilitation of about 800 km of paved roads and 3,000 km of gravel roads, (2) paving of about 1,000 km of gravel roads, and (3) periodic maintenance over about 2,400 km of paved roads.

15. The under-estimation of costs due to the poor quality of the engineering surveys available to determine actual work quantities was a major constraint for budget planning. This was compounded by the fact that the scarce budgeted funds were spread too thin to finance a great number of on-going road sub-projects as well as start new subprojects without securing the funds needed to complete them on time. To help MOPT cope with the resulting shortages in counterpart funding and avoid further delays, the percentage for disbursement against road works under the loan was increased from 42 percent to 70 percent. As a result, about 740 km of paved roads were rehabilitated (or 94 percent of the initial target), and 575 km of gravel roads were paved (or 57 percent of the initial target). Rehabilitation of gravel roads and periodic maintenance were partially undertaken directly by MOPT with its own funds.

16. INVIAS prepared for this ICR, an ex-post evaluation of the Internal Rate of Return (IRR) of a sample of 16 subprojects (out of 83 subprojects) carried out under the loan to assess the consequences of the cost increases and delays experienced in completing road rehabilitation works. The analysis considered three scenarios: (1) without the project, (2) with the project executed as planned in SAR (execution time and cost) and (3) with project, considering actual cost and construction time (on average, construction time was 3.2 times that of the appraisal and actual cost 2.1 times the appraisal estimate). The operational costs of vehicles were estimated using the HDM-III model and taking into account the actual geometric features of the road (including vertical profiles and

horizontal alignment), traffic information for each road section, and estimated initial and final pavement roughness. Keeping in mind the limitations of these data, the evaluation shows that on average the IRR was reduced by half when compared with appraisal estimates. In all cases, shortfalls in budget allocations were reported as the main causes of the delays and related cost overruns (para. 17).

3. MAJOR FACTORS AFFECTING THE PROJECT

17. A total of 83 road subprojects, encompassing about 3,500 km of roads, were partially funded under Loan 2829-CO. Several factors converged to produce cost increases and delays in the execution of most of them. Rather than conventional cost overruns, these cost increases involved changes in the physical targets of the original contracts, including among others, changes in subproject's length, in road alignment, and in the number and type of bridge structures to be built. The average per km cost used in the SAR for road rehabilitation and paving were unrealistic, because most of the road subprojects entailed betterment works (such as roadway widening, improvements to the alignment of the roads, and bridge replacements) which justify higher costs than those expected for rehabilitation and paving alone. A participatory diagnosis involving MOPT officials as well as consultants in charge of work supervision was conducted in 1992 to identify the main factors accounting for cost increases and construction delays as well as the remedial actions to be undertaken to avoid their recurrence. These factors are grouped into four categories:

(a) Contract administration practices. MOPT's contract administration practices and especially its traditional budgetary programming has been by far one of the most significant causes of delay in work progress, with high impact on more than 76 percent of the subprojects. The lack of consistency between budgetary programming and civil works execution resulted in a chronic shortage of funds to finance the works, in delays in processing payments to contractors, and finally, in adjusting work progress to budget allocations substantially extending construction periods and increasing supervision costs accordingly. In addition, MOPT's past tendency to over-contract works resulted in many cases in awarding contracts that from their very beginning were not intended to cover all the components needed to complete the subproject, or the work quantities were limited to a specific portion or section covered under the contract. Poor engineering designs, and partial and outdated studies contributed largely to this problem. In general, the quality of the engineering studies available prior to construction was very poor --in some cases only preliminary designs were available. As a result, cost estimates were underestimated and the budget allocations underfunded creating a vicious cyclical problem.

(b) Changes during construction. Changes in engineering standards introduced during construction account for work increases in 93 percent of the subproject analyzed. Overlay and rehabilitation subprojects are very

sensitive to delays in work execution, as the further deterioration of the pavement condition may lead to significant work and cost increases. Changes of borrow pits and quarries accounted for significant cost increases in 56 percent of the subprojects. Starting in 1993, more stringent environmental regulations which affect the selection and cultivation of quarries and the disposition of waste materials as well, have also increased road construction costs. Implementation delays caused by delays in the acquisition of land were reported in 56 percent of the subprojects, most notably in those where changes in the road alignment were introduced during construction.

(c) Emergencies. Colombia's mountainous topography makes road construction difficult. Slope slides and erosions are particularly rampant. Additional costs for the removal of landslides were needed in 56 percent of the subprojects, generally with medium to large effect on work progress and cost. In addition, *force majeure* situations were reported in 17 cases, out of 83, including both temporal suspension of works due to security reasons in the area and serious damage to the contractor's equipment or the work already carried out as a consequence of such problems.

(d) Contractors capacity. In about 10 subprojects out of 83, the contractor's capacity was inadequate for the job size, affecting adversely work progress. Contractor limitations referred to both lack of operational capacity --mainly shortages in equipment fleet-- and financial constraints.

18. In spite of the fact that the project started financing 43 road subprojects carried over from the previous Loan 2171-CO, project execution was behind schedule and the pace of disbursements was slower than anticipated. The pace of project disbursements rapidly increased after the Bank agreed to amend the percentage of financing for road works set forth in Schedule 1 of the Loan Agreement, increasing it to 70 percent. Subsequently, the Bank approved 100 percent financing for payments in respect of advances to contractors who were awarded construction contracts for new roads. This amendment was inopportune as it promoted contracting of new works instead of focusing on the completion of the ongoing road work's. Completion of about 38 road supbrojects is still underway under the follow on Loan 3453-CO.

19. The consultant services for preparation of the Transport Master Plan and the Computerized Management Information System were deployed too late to enable implementation of their recommendations within the project timeframe. MOPT's Planning Office was the recipient of these assignments. Implementation of both studies faced strong budgetary constraints (in spite of the fact that the Planning Office was the unit in charge of preparing MOPT's budget). It was not until early 1995 that implementation of the Computerized Management Information System gained support from INVIAS top management.

20. The price contingencies estimated in SAR for the period 1988-1994 were about 16.75 percent in constant US dollars of 1987. The rehabilitation and paving contracts were paid in local currency. During the period of high disbursements, the SAR price contingency estimates were lower than actual local cost increases. Consequently, availability of loan funds for road rehabilitation and paving were about 16.2 percent less than required.

21. Auditing of MOPT financial statements and the Loan special account was done by *Contraloria General de la Republica*, usually with substantial delays. No opinion was given by auditors for the years 1989 to 1991; an adverse opinion was given for 1992; and again, no opinion was given for 1993 project accounts, attesting to the fact that the project accounts were below acceptable standard and in need of improvement. Supported by the ongoing Loan 3453-CO, consultants are assisting INVIAS in putting in place proper accounting systems.

4. PROJECT SUSTAINABILITY

22. The institutional reforms initiated in the transport sector, no doubt, will bring more efficiency to the sector. However, at this stage project sustainability remains uncertain because the reform agenda is not yet settled and the new institutions are still making adjustments to their organizations to better discharge their functions. This is evident in the railway sub-sector where FERROVIAS is being restructured to allow for private concessionaires to undertake rehabilitation, maintenance as well as operation of railway infrastructure, and in the road subsector, where INVIAS has yet to solve some organizational bottlenecks and overcome part of the recurrent problems of the past, namely the deficiencies in budgeting, work programming and contract administration practices.

23. In the past, MOPT was regarded as a technical organization intimately involved with engineering; it was staffed and managed by technical personnel. With this function passed on to INVIAS, the restructured Ministry of Transport has to develop new staff skills and more sophisticated planning tools to discharge its role in policy making, monitoring performance of, and ensuring coordination among transport modes. The Transport Master Plan is now perceived as a key tool for MOT to discharge the above functions in an appropriate manner, and efforts to train the staff in MOT's Planning Office were resumed after the retrenchment and transfer of staff left this unit substantially eroded in its capacity to implement the Plan. At present, there appears to be a risk that the technical character of MOT may be understated and people lacking suitable experience be appointed to key positions, leading to eventual politicization of its ranks, which in turn may affect sustainability of the reform. In fact, MOT has to position itself between the various parastatals under its jurisdiction (INVIAS, FERROVIAS, the Superintendency of Ports) and the National Planning Department (DNP). These risks might be reduced by channeling technical assistance to both MOT and INVIAS, and ensuring that both institutions are successful in retaining well qualified personnel to coordinate consolidation of the on-going reforms. Loan 3453-CO carries an institutional strengthening component to support the final establishment of INVIAS.

24. The sustainability of the investment component of the project will depend on Government success in (1) consolidating INVIAS into an efficient and dependable organization, (2) implementing a sound strategy for programming and delivering road maintenance services entirely by contract (contractors and microenterprises), and (3) carrying out the devolution of roads to the departments in a manner consistent with the building up of institutional capacity within the recipient departments. Establishing an efficient road organization to manage the trunk road network has demanded more time and effort than that envisaged under Decree 2171 of 1992. Nevertheless, as stated in a recent document issued by the *Consejo Nacional de Politica Economica y Social* on the Road Infrastructure Plan for 1995-1998, Government is committed to furthering the reforms initiated in 1992 in order to put in place more adequate institutional and financial arrangements for sector management (see para. 42).

25. Compliance with the targets agreed under the Road Maintenance Plan has slightly deteriorated in 1994, as a result of reductions in the operational capacity of field districts, whose force account capacity is slated for liquidation by end-1995. The emergencies caused during the last rainy season of 1994 demonstrated the weakness of the new organization as well as the vulnerability of the highway network. However, INVIAS, with the help of international consultants recruited under the technical assistance in road maintenance management being funded through Loan 3453-CO, is now developing new contract administration models for routine and periodic maintenance, and for managing road emergencies. Delivery of maintenance services will be accomplished basically through a combination of micro-enterprises for mostly labor-based routine maintenance, private contractors retained under annual maintenance contracts, and private concessionaires who will be selected to finance and undertake the rehabilitation, maintenance and operation of substantial portions of the road network (about 3,100 km or 25 percent of the trunk road system) under Build-Operate-Transfer schemes (see para. 45). On the other hand there is the potential problem of increased loads transmitted to the road pavement structure by the heavier trucks imported in recent years. These trucks generally operate overloaded causing damage to pavement structures and most notably to old bridges. Passing to private concessionaires the responsibility for controlling traffic loads will eventually reduce overloading, and enable INVIAS concentrate its enforcement efforts over the non-concessioned portion of the network.

26. The devolution of roads to the departments is progressing, though slower than anticipated. The main issue is that the Transport Law expanded the responsibilities of the departments and established a Road Cofinancing Fund to aid the departments meet the cost of such added responsibilities, but it did not secure the levels of funding that will be devoted for this purpose under the Fund. These difficulties are being sorted out through negotiations with each department taking into account the nature and condition of the roads being transferred. A risk associated to this process is that the weakness of the departments may in practice impede INVIAS in concentrating its efforts exclusively on the national trunk road system --a key factor for the success of the new organization.

5. BANK PERFORMANCE

27. The project identification, preparation and appraisal were carried out by the Bank based on previous experiences and knowledge of MOPT (seven highway projects and one highway sector project had been financed previously by the Bank). The SAR was a comprehensive document on sector policy reform, well received by the Borrower, however quite limited and general with regard to the investment components.

28. The strong policy reform content of the project, its most important objective during project preparation, was really innovative and helped Government focus on furthering the reforms, which became quite an endeavor for a country where road maintenance relied extensively on force account, and airports, sea ports, and railways had been owned and operated for long time by government. As mentioned in "Achievement of Objectives", various measures were agreed and undertaken to reform the existing transport sector policies. By being there during project implementation, the Bank played a key role in shaping these initiatives, and continues supporting their implementation through technical assistance provided under the follow on Loan 3453-CO (Third National Roads Sector Project) approved in 1992.

29. The previous knowledge and experience with MOPT's budgeting system was not adequately taken into account. Given that the rigidity of MOPT's institutional structure and budgeting system was identified as a potential risk for a successful completion of Bank-financed projects, a technical assistance component was included in the project to assist MOPT in strengthening its work monitoring and budget programming practices through development of a computerized management system. This was a long-term goal. In view of the large size of the investment program and the rigidities of the budget, more effort should have been given to align the project with the Government's budget cycle and include short-term measures to improve coordination between work programming and budgeting before the computerized systems could be developed and made operational.

30. The SAR did not adequately identify the subprojects or their physical targets whose completion was to be financed under Loan 2829-CO. Instead, the loan was intended to finance a share of MOPT's investment plan. Insufficient funds were allocated to too many road sub-projects. The lack of appropriate engineering designs and the subsequent need to include additional works compounded the budgetary constraints. Average per km cost estimates used in the SAR for road rehabilitation and paving were unrealistic for the type of works planned, which included road alignment improvements, drainage structures, bridge replacements, and slope stabilization. Also, the price contingency estimated in SAR for the period 1988-1994 was lower than local cost increases. As a result some 38 sub-projects were not completed during the implementation of Loan 2829-CO, and their completion is being financed under Loan 3453-CO.

31. Financial aspects relating to the implementation of the road subprojects were not clear. New and on-going road subprojects were added on to the initial implementation

program without a careful assessment of the financial implications and additional funds required through completion. It should be noted, however, that by undertaking the financing of works already started by MOPT/FVN with its own funds, the project avoided building more pressure on an agency whose funding and contracting capabilities were over stretched as a result of the great number of works under execution. This flexibility facilitated project implementation and loan disbursements, but at the expense of financing subprojects that were lacking adequate engineering designs and difficult supervision activities, especially the comparison of physical targets proposed and accomplished.

32. Project supervision utilized 65.3 staff weeks during the implementation period. Eleven supervision missions visited MOPT and later MOT and INVIAS. Back-to-office reports provide for an easy follow-up of project implementation and compliance with legal covenants and action plans.

6. BORROWER PERFORMANCE

33. Government fully supported the project's sector policy reform component. During the 1987-1994 period, Government took actions directed towards the opening-up of the economy, the promotion of exports, the easing up of trade and reduction of transport costs. These measures provided an appropriate framework for the major institutional reforms aimed at decentralizing government and improving its efficiency through increased private sector participation in the running of transport sector operations. The policies adopted were in line with the agreed plan of action.

34. Though the policies adopted for road sector management are well suited and consistent with Bank best practices, introducing these reforms has not been as smooth as desired due to the hastiness that characterized their implementation. Moreover, the experience gained so far through implementation of the follow-on project shows that even with close supervision from Government --the project includes an innovative Performance Contract that spells out the undertakings of the various government agencies involved in the project and by which Government supervises MOT and INVIAS outputs-- there remain structural difficulties with the government's budgetary system that impose severe constraints for adequate management.

35. The weakness of MOPT's contract administration and budgeting practices was evident during project implementation. Cost increases and delays resulted in most cases from the convergence of several factors, namely: i) lack or poor quality of engineering studies prior to initiating the bidding process; ii) frequent changes in design standards and inclusion of additional works without assessing the financial consequences of these changes at both subproject and investment program levels; iii) inadequate contract administration practices which led to spreading thin MOPT's over streched financial and operational capacity over too many subprojects at the same time, extending contracts far beyond their initial duration and value to avoid rebidding, and poor supervision practices; iv) insufficient capacity on the part of some contractors, who lacked the financial and technical capacity to undertake the works; v) lack of consistency between budgetary programming and work execution, resulting in a chronic shortage of funds to finance the

works, in delays in processing payments to contractors, and in turn, in adjusting work progress to budget allocations, substantially delaying work completion and increasing supervision costs accordingly. While certainly the lack of appropriate budgeting and work programming tools has contributed to this problem, its roots can be tracked on to the way the investment budget is presented to Congress for approval, and the significant level of political interference associated with this process; and vi) excessive dependence on the transfer of funds from Treasury. This creates a recurrent shortage of counterpart funds during the first quarter of the year (when Government revenues are low) which coincides with the dry season period, the most appropriate time for road construction.

36. The institutional strengthening component of the project was not perceived as a high priority by MOPT's Technical Secretariat, which was overwhelmed with road construction and maintenance activities. MOPT's External Credit Office, responsible for managing implementation of externally funded projects lacked the resources and empowerment needed to decide on priorities and enforce compliance with legal covenants.

37. The lack of a computerized project information system made practically impossible adequate monitoring of work progress and financial needs through project completion. The difficulty of putting into operation such a system strongly suggests lack of professional interest on the part of those responsible for collecting the data and using the system (including contractors and supervisors). Furthermore, this may likely reflect a desire to keep the *status quo* and to control the flow of information at certain levels of the organization.

7. ASSESSMENT OF OUTCOME

38. Overall, the project's outcome can be considered as marginally satisfactory. The majority of the sector policy objectives were achieved in a satisfactory manner. However, the outcome of MOPT's institutional efficiency component was mixed, with positive improvements in the areas of planning, programming and monitoring of road maintenance, but with modest progress in the areas of budgeting, investment programming and contract administration. The two major studies, the Transport Master Plan and the Computerized Management Information System were completed, though too late to implement them within the project's timeframe. The personnel training program was carried out partially.

39. The achievement of the physical targets envisaged in the SAR was partial, namely about 94 and 57 percent of the targets planned for road rehabilitation and paving, respectively. Although short from the targets planned, the works were carried out much faster than planned and most of the loan was disbursed by end-1990, two years before the closing date. Obviously, by increasing the percentage of Bank financing from 42 to 70 percent, the Bank contributed to speeding up project implementation, but at the expense of not achieving the physical targets stated in the SAR.

8. FUTURE OPERATION

40. Government is taking actions in five areas that will eventually contribute to ensuring project sustainability and maximizing project benefits: i) establishing MOT as a policy making and planning agency for the transport sector; ii) consolidating INVIAS as a dependable road organization; iii) strengthening road sector funding, by increasing investment levels and enhancing the structure of road user charges; iv) increasing the efficiency and effectiveness of road operations, bringing the private sector to finance, build, maintain and operate substantial portions of the trunk road network, and contracting out to contractors and microenterprises periodic and routine maintenance of the non-concessioned portion of the road network; and v) building up road management capacity in the departments to support the mandated devolution of roads and Government decentralization efforts. A possible Bank transport project, tentatively scheduled for FY97, would assist the Government in (1) exploring the possibility of transforming INVIAS into a public corporation, as a means to mitigate political interference, strengthen management capacity, and increase financial autonomy and accountability, and (2) putting in place a better framework for private sector financing and management of road infrastructure, as a means to bring more efficiency to the sector and overcome some of the recurrent problems of the past.

41. The developing of planning skills within MOT is a key priority. The models developed for the Transport Master Plan are an essential tool for the restructured MOT, since long-term investment planning and policy making now are its main functions. A Technical Committee --composed of key officials from DNP, the former MOPT, and its parastatals-- supervised the execution of the studies. However, the high turnover of key staff in MOT's Planning Office after August 1994, may jeopardize the on-going efforts to fully implement the recommendations and models developed by the consultants. Strong leadership within MOT's Planning Office and a core team staffed with technicians fully knowledgeable in the operation of the rather sophisticated models is necessary. An interesting approach to ensure that the models are adequately used and the data periodically updated, is to retain consultants to operate the models and evaluate the investment scenarios defined by MOT under long-term contracts (say 3-5 years). The experience gained so far with the operation of MOT's *Buque Explorador* and the Laboratory of Hydraulic Testing, which are run by consultant firms since 1974, has proven very successful.

42. The existing institutional bottlenecks and deficiencies in road sector management were clearly stated in a recent document issued by CONPES in February 1995. The document outlines a set of remedial actions to be undertaken by INVIAS. Some of them are shown below.

Area	Main Actions
Financial	enhance the structure of road user charges; ensure sustainability of road maintenance; start charging betterment levies;
Operational	put in place a system to manage road emergencies; put in place pavement and bridge monitoring systems; enforce compliance with legal load limits;
Administration	review contract administration procedures within INVIAS to ensure a steady flow of funds to pay contractors; review the budgeting procedures with DNP and the Ministry of Finance; made operational a computerized management information system;
Institutional	strengthen INVIAS technical capacity; and speed up the process for devolution of roads to departments;

43. Also, INVIAS' management has recently adopted some key policies that if carried through the organization, will help correct most of the deficiencies in contract administration. This includes the decisions to: i) shift from a project-based budget structure to a more flexible program-based structure, minimizing possible interference during the approval process; ii) phase out all old on-going contracts by not granting further extensions; iii) improve the quality of engineering designs using revised terms of reference and design standards; iv) redefine responsibilities in work supervision, increasing technical and financial accountability of the consultants retained by INVIAS for this purpose; v) put into effect the computerized management information system developed under Loan 2829-CO.

44. Government plans to substantially increase investments in the road sector from about 1 percent of GDP during 1991-94 to 2.5 percent for 1995-98 in order to clear the existing road infrastructure backlog and accommodate the transport system to present needs. This entails investing about US$7.2 billion between 1995-98, out of which US$6 billion are allocated to the national road network managed by INVIAS, while the remaining US$1.2 billion would be apportioned to support the devolution of roads to departments, mostly through the Road Cofinancing Fund. Rather than launching large new projects, the plan gives priority to rehabilitation and maintenance of the trunk road system. Government is revising the current structure of user charges through a study funded under a Bank project (Loan 3157-CO, Second Rural Roads Sector Project). Presently, at the national level, revenues from user charges exceed the current expenditures but will not support the planned increase in funding. Conversely, at the subnational level (departmental and rural roads) revenue would merely cover 15 percent of the projected needs.

45. INVIAS is seeking private sector participation to bring additional sources of funding to the road sector (about 35 percent of the funding needed according to the plan). It has identified an ambitious concession program, which comprises investments in about

3,200 km of roads worth an initial cost of US$2.8 billion. Seven concession contracts have been awarded so far. The selected private concessionaires will finance the necessary investments, operation and maintenance of the improved facilities throughout the concession period; in compensation, the concessionaires will be allowed to charge tolls to the road users benefiting from the facility. The program covers new accesses to main cities, rehabilitation and maintenance of existing roads, and construction of alternative routes to replace existing roads which have very poor standards. The latter may not be financially viable at reasonable toll rates without some participation of public funding and, possibly, may need some form of credit enhancement to improve prevailing market conditions for private financing. Government requested the Bank to explore the possibility of a Bank guarantee for one of the projects. Preparation of this pilot project is underway.

46. To support the transfer of roads to departments, Government is finalizing the cofinancing matrices and operational procedures for the Road Cofinancing Fund, which will channel grant funds to the departments. The cofinancing arrangements give priority to road rehabilitation and maintenance, as opposed to new construction, by allocating more funds to these programs and requiring lower contributions on the part of the departments. Coordination of the investment plans will be done at the departmental level through specialized units created in 1994. Government and IDB are preparing a project to support this process.

9. LESSONS LEARNED

47. Some lessons can be derived from the implementation of this project that can be applied to the design of future projects in Colombia, and perhaps in other countries as well. Other lessons refer to the issues that came up during implementation of the major institutional reform program launched between 1990-1993.

48. In project design, more attention should be given to defining a set of performance indicators to assess the achievement of the project objectives and a logical framework under which each project component fits and is clearly linked with the stated objectives. Furthermore, there should be consistency between the investments chosen for funding under the project and the project development objectives, concentrating the use of funds in those investments that are essential for achieving the development objectives of the project. As a sector project, Loan 2829-CO financed a small slice of MOPT's investment program (11 percent); in practice this meant partially funding a large number of road subprojects scattered throughout the country, selected more to reflect a regional balance than strategic decisions directed to have a greater impact on transport system performance. For future projects, it is recommended that the number of subprojects be limited to those considered more important in line with the adopted sector policy and/or the development objectives of the project.

49. The rigidity of MOPT's budgeting system was highlighted as a potential risk for project implementation but no safeguards were introduced in project design. The operational aspects of a project (budgeting procedures, flow of funds, accounting) should also receive more attention during project preparation and be candidly discussed with the

various governmental agencies involved before starting project implementation. Indeed, establishing a computerized management information system was a key step to improving coordination between work programming and budgeting, but yet additional measures were needed to overcome some of the "structural" difficulties associated with the budgeting system. Discussions held during the last two years are clearly pointing to two mechanisms that need to be built into INVIAS to address this issue, namely to (1) mitigate (political) interference from outside the agency during the processes of formulating and getting approval of the annual budgets, and (2) secure a steady flow of funds to support the investment program, increasing financial autonomy of the road agency as to accommodate any unexpected shortage of funds during the budget cycle.

50. Loan covenants constitute a key element of the Bank's assistance in the development process by guiding project implementation and helping Government focus on those actions that will produce the long lasting benefits expected from the project. In this project, loan covenants were designed to assist the Borrower in speeding up the strengthening of its institutional and operational capacity. Likely, the number of covenants agreed in the loan agreement, 44 actions are listed in Table 10, was more than needed. A review of the status of these covenants shows that the Borrower was in compliance in 14 instances (or 32 percent), deferred compliance in 10 instances (or 23 percent), achieved only partial compliance in 11 instances (or 25 percent), and was in non-compliance with in 9 instances (or 20 percent). Borrower's commitment to and internalization of the priority of mutually agreed actions are essential.

51. Incomplete and poor engineering studies were, no doubt, one of the most critical factors that delayed and led to cost increases in the execution of the works financed under this project as well as the previous two Bank projects. In 1993, INVIAS adopted new terms of reference and guidelines for engineering studies; more importantly, bidding for construction is delayed until the engineering studies are made available. The new engineering studies are more expensive than those undertaken in the past; in general, the studies have been financed through FONADE because MOPT did not include adequate provisions for studies in its budget. It is clear now that INVIAS has to manage the studies and have enough funds for this purpose in its own budget. A key priority in this regard is the strengthening of INVIAS' technical capacity to review the quality of the studies, especially to ensure consistency between the recommendations of the environmental assessment studies (which are now regularly done) and the proposed engineering designs and cost estimates. In addition, it takes more time for the consultants to complete the studies, and the experience so far has shown that construction costs estimated on the basis of these studies are significantly higher than those initially envisaged and used in the formulation of the budget. Though much can be gained through better scheduling of the implementation of the selected subprojects, again more flexibility is needed in the budget structure as to permit the necessary adjustments once the more elaborated cost figures are available. These efforts, however, should be complemented with similar changes in work supervision practices, since supervisors became used to introducing changes during construction without taking into account the financial implications. To what extent these

lessons have been assimilated will be tested through implementation of the road concession contracts recently awarded to private operators.

52. Finally, it should be noted that the introduction of all the institutional changes had a toll on the productivity of the agencies affected by the reform process. The most difficult part was probably how to communicate the changes to the staff and make them come on board. In spite of the provisions adopted, the retrenchment of personnel also affected the institutional memory of the agency. Especially during the continuous changes that characterized the transition stages, it was not rare to see some unintentional overlapping of responsibilities among the units, that created confusion among staff who did not know to whom report to or under which procedures should their units operate. This confusion also affected consultants and contractors who suddenly were confronted with the need to deal with many new units without understanding the nature of the changes. An new organization structure must be easily understood from the inside, by the staff involved in day to day operations, and from the outside, by those beneficiaries (contractors, consultants, road users as well) that have to interact with it.

PART II. STATISTICAL ANNEXES

Table 1: Summary of Assessments

A. Achievements of Objectives	Substancial	Partial	Negligible	Not Applicable
Macroeconomic policies	✓			
Sector policies	✓			
Financial objectives				
Institucional development			✓	
Physical objectives		✓		
Poverty reduction				✓
Gender concerns				✓
Other social objectives				✓
Environmental objectives				✓
Public Sector management				✓
Private sector development				✓
Other (specify				✓

B. Project Sustainability	Likely	Unlikely	Uncertain
			✓

C. Bank Performance	Highly Satisfactory	Satisfactory	Deficient
Identification			✓
Preparation assistance			✓
Appraisal		✓	
Supervision		✓	

D. Borrower Performance	Highly Satisfactory	Satisfactory	Deficient
Preparation		✓	
Implementation			✓
Covenant compliance		✓	
Operation (if applicable)			✓

E. Assessment of Outcome	Highly Satisfactory	Satisfactory	Unsatisfactory	Highly Unsatisfactory
		✓		

Table 2: Related Bank Loans/Credits[1]

Loan	Purpose	Year of approval	Status
Preceding operations			
1. Seventh Highway Project 1471-CO	Rehabilitation of 978 km. priority roads, and improving road maintenance and transport management	June 1977	Completed
2. (First) Highway Sector Project 2121-CO	Upgrade the transport system, adjust sector policies, strengthen MOPT's highway management capacity.	April - 1982	Completed Dec-1988
3. 2nd Integrated Rural Develop. Project 2174-CO	Provided financing for construction of about 700 km of rural roads and improvement of 400 km. FNCV carried out the rural roads component for the Integrated Rural Development Fund (DRI)	June - 1982	Completed Jun-90
4. (First) Rural Roads Project 1966-CO	Support FNCV's 1981-84 Program for rural roads construction and rehabilitate and improve FNCV's managerial performance	March - 1981	Completed Jun-86
5. Rural Transport Sector Project 2668-CO	Support FNCV's 1982-92 Investment and Maintenance Program and improve FNCV's institutional efficiency	July - 1986	Completed Dec - 1986
Following operations			
1. Second Rural Roads Sector Project 3157 - CO	Support FNCV's 1990-1993 program, define road management functions, implement key policies in the rural roads sector (decentralization to local governments).	Nov. - 1989	In Progress
2. Third National Roads Sector Project 3453-CO	Reduce cost of transport, improve project preparation capacity within MOPT, and implement a rolling five year investment plan.	March - 1982	In Progress

[1] Includes projects in the same sector/subsector as this project and adjustment operations with related objectives. A limit of 10 years is observed when listing proceeding operations.

Table 3: Project Timetable [2]

Steps in project cycle	Date planned	Date actual/ latest estimate
Identification (Executive Project Summary)		June 6, 1986
Preparation	Jul-86	July 13, 1986
Appraisal	Feb-86	May 13, 1987
Negotiations	Apr-87	April 1987
Letter of development policy (if applicable)		n/a
Board presentation	May-87	June 9, 1987
Signing		October 8, 1987
Effectiveness		December 21, 1987
Fist Tranche release (if applicable)		
Midterm review (if applicable)		
Second (and third) tranche release (if applicable)		
Project completion		December 31, 1993
Loan closing		December 31, 1993

[2] As provided, for example, in the Staff Appraisal Report (SAR).

Table 4: Loan Disbursement

FY	**88**	**89**	**90**	**91**	**92**	**93**	**94**
Appraisal Estimate	31.0	66.6	102.8	133.3	159.4	179.1	180.3
Actual	11.4	29.7	116.1	156.8	174.5	177.3	180.3
Actual as % of Estimates	36.8	44.6	112.9	117.6	110.3	99.0	100.0
Date of final disbursement	June, 1994						

Table 5: Key Indicators for Project Implementation

I. Key implementation indicators in SAR President's Report	Estimated (For 1993)	Actual
Financial Targets		
Increase of Road Tolls	in line with heavy construction costs	Accomplishment
Force Account Maintenance Ratio	Below 50%	
Investment Targets		
Km of Bridges	0	7
Km of Paving Of Gravel Roads	1000	575
Km of Paved Road Rehabilitation	800	739
Km of Gravel Road Rehabilitation	3000	4000
Km of Periodic Maintenance	2400	19330
Km of Contracted Routine Maintenance[2]	10500 (1)	1590
Km of Horizontal Marking	100 (1)	270
Km of Vertical Signalization	600 (1)	N.A.
Km of Safety Barriers	20 (1)	N.A.
Organizational Targets		
Contracted Maintenance Ratio (%)	29	30-35
Training Courses (No.)	506	N.A.
Trainees (No.)	6300	N.A.

(1) - Yearly average (1988 -1993)
(2) - Target to 1993
(3) - During loan execution (1987 - 1993)

Table 6: Key Indicators for Project Operation
(Not applicable)

Table 7: Studies Included in Project

Study	Purpose as defined at appraisal/redefined	status	Impact of study
1. Road transport regulation	Review of selected regulatory and legal aspects affecting road transport market	Executed	Contributed to furthering the reforms in the transport sector.
2. Investment planning	Review National Transport Plan	Executed	Developed too late to be implemented after the restructuring of MOPT, perceived as a key tool.
3. Budget programing and execution	Development and implementation of computerized management information systems	Executed	Developed too late to be implemented
4. Highway Administration	Technical Assistance for supervision of engineering studies, road material sources, slopes and pavement analysis; review technical specifications and strengthening of maintenance management	Partially Executed	Mixed. Developed capacity for formulating and monitoring annual maintenance program. Efforts in the remaining areas are being pursued through the follow on project.

Table 8A: Project Costs

Item	Appraisal estimate (US$M)			Actual/latest estimate (US$M)		
	Local Costs	Foregin Costs	Total	Local costs	Foregin Costs	Total
1. Highway improvements, road safety and supervision	197.2	132.7	329.9	99.3	167.1	266.4
2. Maintenance equipment and spare parts	5.5	31.5	37.0	0.4	11.4	11.8
3. Consultant services for technical assistance	5.0	2.0	7.0	2.3	1.4	3.7
4. Training	1.84	0.36	2.2	0.1	0.4	0.5
5. Unallocated		12.1	12.1	0	0	0
TOTAL	209.54	178.66	388.2	102.1	180.3	284.3

(1) Based on Pari-passu estimated in SAR

Table 8B: Project Financing

Source	Appraisal esti mate (US$M)			Actual/latest estimate (US$M)		
	Local Costs	Foreign Costs	Total	Local Costs	Foreign Costs	Total
IBRD/IDA	1.64	178.66	180.3		180.3	180.3
Domestic contribution FVN	10.7	197.2	207.9	102.1	0	102.1
Total	12.34	375.86	388.2	102.1	180.3	282.4

Table 9: Economic Cost and Benefits
ICR Loan - 2829-CO
Rate of Return - Cost overruns - Execution delays evaluation
Based on INV Calculations

Road	Type Work (1)	Execution time (months)			Project Cost (Col$ millions)			Rate of Return (%)				Delay Causes (3)
		Planned	Actual	(A/P)	Planned	Actual	(A/P)	SAR	IRR-1 (2)	IRR-2 (2)	2/1	
Honda - Mesones	RH	24.0	102.0	4.3	7,938.6	14,290.1	1.8	NA	25.1	17.4	0.7	B,
Barbosa - Cisneros	P	24.0	59.0	2.5	2,898.4	6,582.5	2.3	59.0	60.8	23.6	0.4	
Guayabal - Mariquita	RH	12.0	44.0	3.7	1,682.1	2,390.2	1.4	NA	NA	15.7	NA	B, CSB, AW
Libano - Murillo	I-P	18.0	50.0	2.8	3,770.5	5,802.8	1.5	NA	13.2	7.5	0.6	B,E
Barbosa - Velez	P	12.0	59.0	4.9	2,851.0	6,582.5	2.3	NA	48.4	34.5	0.7	B,R
Puerta de Hierro - El Carmen	RH	24.0	75.0	3.1	5,581.3	13,834.8	2.5	NA	41.3	32.0	0.8	B,E
La Mesa - Tocaima	RH	24.0	66.0	2.8	3,820.9	8,605.5	2.3	30.0	22.4	12.0	0.5	B,M
Carreto - El Tigre	RH	24.0	80.0	3.3	3,838.8	11,601.3	3.0	32.0	19.8	1.1	0.1	B
Yopal - Rio Unete	P	24.0	61.0	2.5	3,319.0	6,606.3	2.0	NA	56.0	40.0	0.7	B,E
Oiba - Vado Real	RH	18.0	105.0	5.8	4,356.5	12,656.6	2.9	104.0	29.2	5.7	0.2	B,CSB,AW,R
Pto. Colombia - Sta.Veronica	P	18.0	49.0	2.7	2,214.5	3,738.7	1.7	NA	110.4	NA		B,M
Rio Neiva - Algeciras	P	24.0	69.0	2.9	1,815.4	3,877.8	2.1	20.0	44.5	21.3	0.5	B
Tres Puertas - La Felisa	P	24.0	57.0	2.4	3,955.1	6,910.4	1.7	27.0	60.7	50.0	0.8	B,M
Neiva - Rio Loro	RH	36.0	85.0	2.4	12,118.6	24,308.7	2.0	40.0	16.5	11.2	0.7	B
Caimo - Club Campestre	P	24.0	44.0	1.8	3,313.4	6,416.9	1.9	NA	61.6	23.2	0.4	B
Chiriguana - Becerril	P	24.0	65.0	2.7	4,681.6	10,667.1	2.3	NA	70.9	46.0	0.6	B
Average		22.1	66.9	3.2			2.1	44.6	45.4	22.7	0.6	

(1) RH= Rehabiliation

(2) IRR-1 = Internal rate of return under initial conditions (time and cost)
IRR-2 = Internal rate of return under real conditions (time and cost)

(3) B = Budget laks
AW = Aditional Works required CSB = Contract suspension due budget lacks P = Paving
I = Geometry improvements M = Material source E = Equipment R = Rain

Table 10 Status of Covenants
Colombia
Loan (2829-CO)

Agreement	Section	Covenant type	Present status	Original fulfillment date	Revised fulfillment date	Description of covenant	Comments
Loan	2.02 (b)	1	C			Borrower to open and maintain in dollars a special account in Banco de la República.	
Loan	3.01(b)	5-11	CD			Borrower to carry out the project in accordance with the 1987-93 Highways Program and the Annual Highways Program.	Completion of about 44 on-going road subprojects is being financed under the follow-on Loan 3453-CO. Loan proceeds allocated to civil works were totally committed to to expenditures incurred under FVN's 1991 budget.
Loan	3.01(c)	5-11	CD C C CP CD	Not later 9/30 ea. year from 1987. 3/31 ea. year		Borrower to:(i) furnish to the Bank the Annual Highways Program for the following year, including inter alia the detail physical annual program and corresponding detailed financing plans, and an update of the 1987-93 Highways Program; (ii) exchange views with the Bank on the progress of the 1987-93 Highways Program; (iii) submit each subprojects for Bank approval; (iv) carry out Part C of the Project in accordance with the training program; and (v) submit for Bank's approval Terms of Reference for each study under Part D.1 of the project.	* Last update of the Five-Year Investment Plan (1993-1997) was furnished to the Bank in 1993. The program is being revised to take into account the redistribution of jurisdictions that followed the restructuring of MOT. * Last subproject approved in December 1990. * Some components of the training program were not carried out . The program is being updated under Loan 3453-CO. * Truck domestic Assembly and Import Policy Study not carried out (see MOPT's Action Plan)
Loan	5.01(a)	1	NC			Borrower to maintain records, accounts adequate to reflect in accordance with sound accounting practices its operations and financial condition, including separate records and accounts for the project.	The auditor (Contraloria General de la república) has repeatedly pointed out several deficiencies in FVN's accounting procedures. The issue is being addressed under the follow on Loan 3453-CO.
Loan	5.01(b)	1	CD	ea. year 6/87, 5/88 and April ea. year Thereafter		Borrower to: (i) have its records, accounts and financial statements and the records and accounts for the Special Account for each fiscal year audited; (ii) furnish to the Bank certified copies of its financial statements as well as the audit report.	The audit report for financial year 1992 was furnished to the Bank in February 1994. The deadline for submission of the report for 1993 has been extended to end-August 1994, to allow INV correct the deficiencies pointed out in previous reports.
Guarantee	3.02	12	C			Guarantor to: (a) carry out or cause to be carried out the Action plan; (b) through MOPT, exchange views with Bank	Mostly in compliance with. All pending issues are part of the follow-on project (Ln. 3453-CO).
Guarantee		12	C	3/31 ea. year		with regard to the progress of the Action Plan; and (c) through	

Table 10 Status of Covenants
Colombia
Loan (2829-CO)

Agreement	Section	Covenant type	Present status	Original fulfillment date	Revised fulfillment date	Description of covenant	Comments
						MOPT, submit to the Bank for the Bank's approval, the Guarantor's updated Action Plan.	MOPT has not submitted a formal revised version of the Action plan under this project since 1992. However, the major reforms introduced since 1991 in the various transport subsectors are consistent with the goals proposed under the plan, and in many cases they went even a step further.

Table 10: Status of Legal Covenants

Agreement	Section	Covenant type	status	Original fulfillment date	Revised fulfillment date	Description of covenant Objective	Actions	Comments
A. SECTOR POLICY								**Description of covenant**
1. Road User Charges								
Loan	Sched. 5	12	C	December of each year		Improve equity in recovery from users of roads.	Increase tolls for all vehicle categories in line with heavy construction price index and above that, if required, for heavy axle trucks.	Tolls were substantially increased in February 1993 (a new category for heavy vehicles established), and subsequently adjusted to reflect local inflation in January 1994. Toll revenue account for about 25% of FVN/INV's total revenue.
Loan	Sched.5	12	C	Dec. of each year		Ensure that all vehicle categories are charged at least the associated road routine and periodic maintenance cost.	Monitor road costs, fuel costs and prices, and other user charges, and adjust as required.	Under the follow on project (Loan 3453-CO), the Government has agreed to: a) put into effect road user charges sufficient to cover from 62% in 1992 to 100% in 1994 of the total costs of maintenance, rehabilitation and improvement of the public road network. DNP prepared projections comparing user charges against expenditure for 1993-1998, but has yet

Table 10: Status of Legal Covenants

Agreement	Section	Covenant type	status	Original fulfillment date	Revised fulfillment date	Description of covenant Objective	Actions	Comments
								to furnish to the Bank a retrospective review for 1992 and 1993; and b) adjust the retail prices of gasoline and diesel to at least achieve parity between the yearly average price of such products at the consumer level and the corresponding yearly average of their respective border prices. Presently, consumer prices are slightly higher than border prices.
Loan	Shed 5	12	C	July 1989		Adjust the regulatory framework affecting road transport services.	Implement recommendations of road regulation and devices study on the new role of INTRA	Law 53/90 re-structures INTRA as a normative organization in transport and transit , Decree 2171 of December 1992 eliminated INTRA, Passing its responsibilities on to the restructured Ministry of Transport, who will start operating in January 1994, and the departments.
Loan	Shed 5	12	C	July 1989		Adjust the regulatory framework affecting road transport services.	Appoint inter-ministerial task force to review policy for domestic assembly and import of trucks.	Due to the "aperture" policy, imports of heavy trucks increased 200% in 1992. The Truck Domestic Assembly and Import Policy Study was not carried out under the project because a similar study was carried out by FONADE, addressing domestic efficiency and protection related issues objectives. New Customs Code implemented.
							Implement recommendations.	
Loan	Sched	12	CD	Dec/ 1989		Improve efficiency of road fleet.	Rationalize controls affecting storage, handling and traffic of containers.	Government restructured the National Customs Agency and passed new legislation which eliminates port and en-route inspections and streamlines import and government inspection procedures. Nevertheless, further reforms are needed to fully materialize the efficiency gained through privatization of ports administration.

Table 10: Status of Legal Covenants

Agreement	Section	Covenant type	status	Original fulfillment date	Revised fulfillment date	Description of covenant Objective	Actions	Comments
			CP	Dec/87			Normalization of truck bodies, platforms and other transport equipment.	See above.
			CP	December			Operational coordination among	Private ports authorized. Mixed societies with more
				1987			FNC, COLPUERTOS and DGNO	Private capital are operating Colombia's five major ports. FNC was liquidated in 1990; Ferrovias an autonomous public agency is responsible for managing rail infrastructure, while private operators are charged a toll for the use of the tracks. A program is run by
			CP	June 1988			Program for training of personnel in container handling techniques.	COLFECAR (the union of transportists).
Loan	Sched.5	12	C	Dec/1988		Promote Multimodal Transport	Review for adoption of the UN Convention on International Multimodal Transport of Goods.	Decree 01/90 modifies Trade Code in Transport and Insurance, introducing Multimodal Transport of Goods. Decree 1136 of 1992 create the Multimodal Transport Committee. Regulations for Multimodal transport operators will be issue very soon by the Junta del Acuerdo de Cartagena. MOT has recruited consultants from UNCTAD to develop an action plan for multimodal transport facilitation.
Loan	Shed 5	12	C	July 1989		Decrease the risk of transport.	Implement compulsory insurance policy	
				Dec/1989			Revise transport contract consisting in	Complied with. (Decree 01/90).
							Code of Commerce.	
Loan	Shed 5	12	C	Jan. of each year		Institutionalize coordination of facilitation measures.	Report legal, administrative and operational measures undertaken, and work program.	MOPT is about to hire consultants from UNCTAD for a technical assistance in multimodal and international
								trade facilitation. The consultants, among other tasks,

Table 10: Status of Legal Covenants

Agreement	Section	Covenant type	status	Original fulfillment date	Revised fulfillment date	Description of covenant Objective	Actions	Comments
								will prepare the action plan for this purpose refer to under the Third National Roads Sector Project. MOPT will hire an expert to facilitate implementation of such action plan.
3. Public Investment								
Loan	Sched. 5	12	CD	Dec/1988		Improve resource allocation.	Implement National Transport Plan.	Consultants were hired i 1991. The National Transport Plan will be completed by end-July1994. A "Technical Committee", composed by key officials from MOPT, DNP and other sectorial agencies, supervises the execution of the study.
INSTITUTIONAL EFFICIENCY								
1. Managerial and Budgetary Aspects								
Loan	Sched. 5	5	NC C	August 1988 Dec/1989 August 1987 April 1988		Implement coordination between budgeting programming and execution	Design and implement system. Review Price Adjustment Indices.	Consults for the Computerize management information System were hired in 1990. The software was completed in April 1994, but so far no data has been loaded into the system. New escalation formulae, base on nine indices , were introduced for adjustment of unit prices of contracts more than one-year duration.
Loan	Sched. 5	5	CP	August 1987 Dec/1988		Systematic performance budgeting and monitoring of sector parastatals and autonomous agencies under MOPT	Consultants develop and implement a monitoring system.	See above. The consultants completed the design of the system to be used by sector parastatals. However, implementation will depend on paras totals task forces most of this parastatals are being structure as a result
								of Decree 2171 of December 1992.

Table 10: Status of Legal Covenants

Agreement	Section	Covenant type	status	Original fulfillment date	Revised fulfillment date	Description of covenant Objective	Actions	Comments
		5	CP	Dec. 1987 Dec. 1988		Improve sectorial coordination and administrative and budgeting procedures in each sectorial agency.	Examine policies and formulate investments.	The National Transport Plan Study and the Com- computerized Management Information System Study are yet under execution. Coordination remains critical
Loan	Sched. 5	1	CD NC	Dec/1988 Dec/1989		Improve MOPT's accounting and auditing procedures	Complete accounting and auditing manuals. Implement computerized accounting system.	Delayed MOPT, assisted by consultants, completed its new Accounting Manual and is improving its accounting information system. Mechanization of accounting procedures delayed until the new procedures are well established.
2. Road Maintenance Management								
Loan	Sched. 5	12	CP	Dec/1988 Dec/1989		Strengthen maintenance organization and planing	Institutionalize the Maintenance Sub-Directorate.	A Highway Maintenance Unit (GAM) was established as basis for the Sub-Directorate. This unit remains in the structure of the recently created Instituto Nacional de Vías. Since all maintenance works will be contracted out and the MOT's districts disbanded, the programs developed by the Maintenance Unit will managed by Task Management Groups responsible for specific road corridors
Loan	Sched.5	5	CP	August 1987 Dec/1988		Improve Maintenance execution and establish quality control.	Review quality standards and set up system for their implementation.	Delayed. MOPT developed maintenance standards a four year performance program for preparation of the follow-on project; technical assistance to implement a maintenance management system will be provided under the new project.
Loan	Sched. 5	12	C	Dec/1987			Increase contracted maintenance and force	Being complied with. Decree 2171 mandates contract-
						resources	account productivity in accordance with	ing out of all works by end 1995. Maintenance of about 19.500 km (75% of the national road network) has

Table 10: Status of Legal Covenants

Agreement	Section	Covenant type	status	Original fulfillment date	Revised fulfillment date	Description of covenant Objective	Actions	Comments
				Dec/1993			targets	been contracted out to micro-empresas, an innovate and cost effective alternative. Compliance with the agreed maintenance program is beginning monitored under the follow-on project.
Loan	Sched 5	5	NC	Aug/1988 Aug/1987 June 1988		Improve costing and accounting of maintenance operations	Systematic accounts Expand systematization of spare parts all districts.	Mechanization of cost accounting delayed till new accounting procedures are established. Computers have been distributed to each district and mechanization of spare parts has been achieved in 70% of workshops. However, the districts will be Eliminated under the new institutional set up.
Loan	Sched 5	5	CP	August 1987		Improve equipment management	Increase systematization of control of availability, utilization and costs of equipment, from 50% to 100%	Although MOT has improved its equipment monitor ring system, mechanization has not yet taken place. Its maintenance fleet, however, is presently slated for liquidation.
Loan	Sched 5	5	CT NC NC	Dec/1988 June 1988 Dec/ 1988		Vehicle weight control	Complete first phase of equipment procurement. Portable scales operational Installation of dynamic scales	FVN?INV purchased 9 fixed scales and 9 portable scales in 1993. Only one portable scale was operational in 1993. It is expected that about 15 will become operational in 1995. Not done. They will be procured under follow-on project
3. Civil Works Contract Administration								
Loan	Sched. 5	5	CD	Dec/1987		Improve quality of engineering studies	Design standards prepared by Consultants.	MOPT adopted new TORs for preparation of road

Table 10: Status of Legal Covenants

Agreement	Section	Covenant type	status	Original fulfillment date	Revised fulfillment date	Description of covenant Objective	Actions	Comments
						and of technical specifications.		engineering studies and is upgrading the technical specifications. Revision of geometric road design standards will completed soon.
			NC	December 1987			Follow-up Study of Material Sources	Not carried out. However, the updating of the inventory of road materials sources was contracted out to the National University in 1991, and data collected from MOPT's districts.
Loan	Sched. 5	5	CD	April 1987		Expedite Bidding and Contracting procedures	Streamline MOPT's bidding and contracting procedures.	New pre-qualification and bidding documents completed for use under the follow-on project.
Loan	Sched. 5	5	CP	August 1987		Strengthen Works Supervision	Implement a policy for rationalization of contracted supervision.	MOPT has recently strengthened its supervision capacity by creating task management teams who are responsible for managing all aspects of work programming and supervision in specific corridors.
4. Personnel Training								
Loan	Sched. 5	5	CP	December of each year.		Implement Training Program	Execute agreed program	Training will continue under follow-on project
			NC	September 1988			Remodel Bogota Training Center	The location of the existing building is not appropriate for training purposes. It was agreed not to remodel the training center.
			NC	December 1988			Install training equipment.	Not implemented.

Key Covenant Types:

1	=	Accounts/audit			
2	=	Financial performance/revenue generation from beneficiaries	8	=	Indigenous people
3	=	Flow and utilization of project funds	9	=	Monitoring, review, and reporting
4	=	Counterpart funding	10	=	Project Implementation not covered by categories 1-9
5	=	Management aspects of the project or executing agency	11	=	Sectorial or cross-sectorial budgetary or other resource allocation
6	=	Environmental covenants	12	=	Sectorial or cross-sectorial policy/regulatory/institutional action
7	=	Involuntary resettlement	13	=	Other
Status					
C	=	covenant complied with	SOON	=	compliance expected in reasonably short time
CD	=	complied with after delay	CP	=	complied with partially
NC	=	not complied with	NYD	=	not yet due

Table 11: Compliance with Operational Statements (Not applicable)

Table 12: Bank Resources : Staff Inputs

Stage of proyect cycle	Planned		Revised		Actual	
	Weeks	US$ (1)	Weeks	US$ (1)	Weeks	US$ (1)
Through appraisal					48.4	
Appraisal-Board					9.6	
Board-effectiveness						
Supervision					56.3	
Completion					9	
Total					123.3	

(1) Information not available

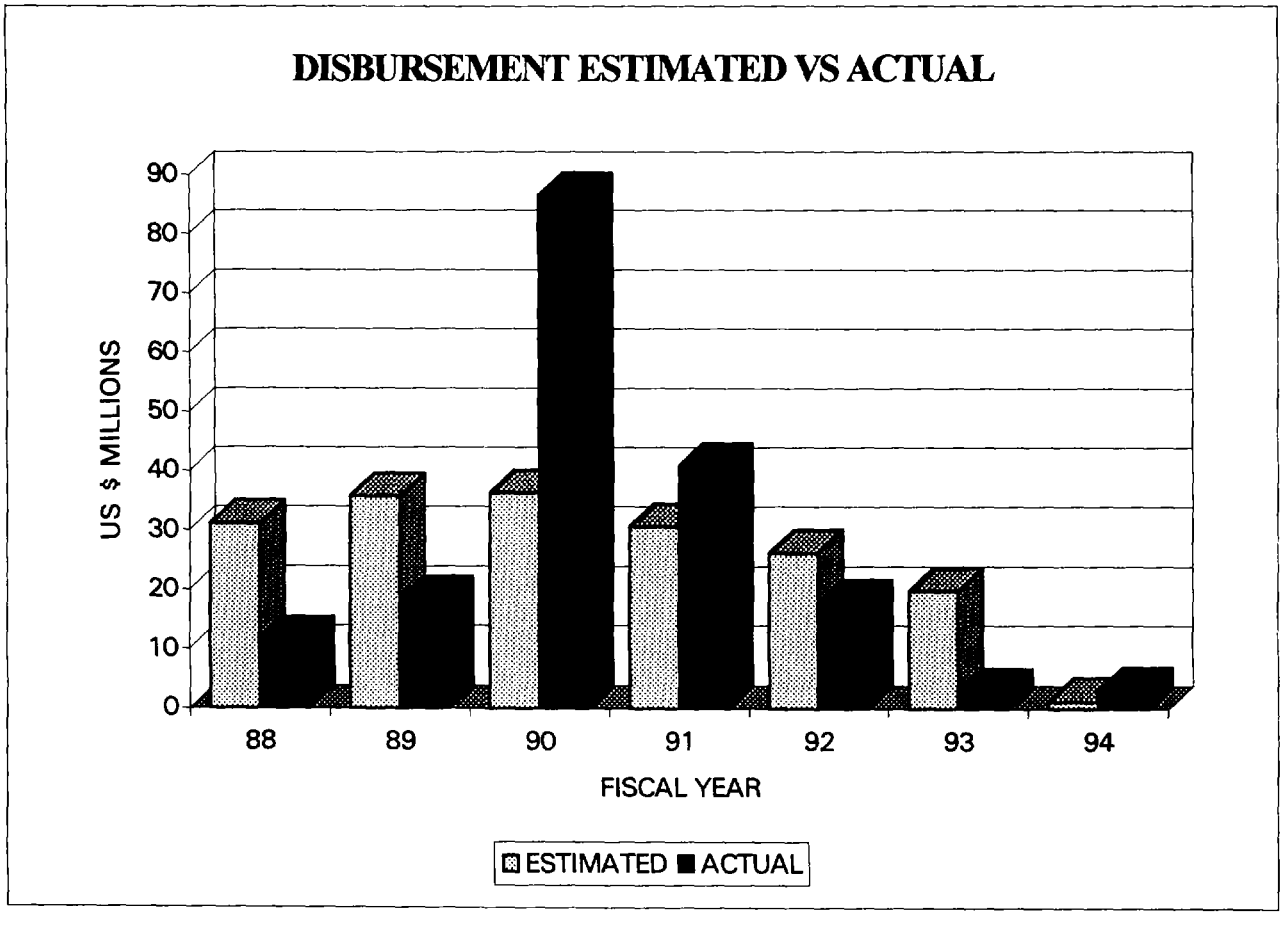
Table 13: Bank Resources Missions

Stage of Project cycle	Month/ Year	Number of Persons	Days in Field	Specialized Staff Skills Represented	Performance rating		Types of problems
					Implementation Status	Development Objectives	
Through appraisal	Mar-86	2	14	TE, HE			
	Jul-86	4	80	TE, HE, C			
	Sep-86	1	6	HE			
	Oct-86	4	104	TE, SA, FA, HE, C			
Appraisal through Board approval							
Board approval through effectiveness							
Supervision	Apr-88	2	24	FA,TA	2		AF
	Mar-89	2	24	FA,TA	2		AF,PM
	Jun-90	4	48	FA, TE, C	2		AF
	Jun-92				2		PM
	Nov-92	3	36	FA, HE, EE,	2		PM
	Apr-93	2	33	HE,TE, C	2		AF,PM
	Aug-93	4	27	HE,TE	2		
	Oct-93	3	20	HE,TE,FA, C	2		AF,PM CLC
	May-94	3	25	HE, EE, C	S		
	Jul-94	5		HE,TE,C	S		AF,PM CLC
Completion	Mar-93	1	6	C			
TOTAL			447				

EE = Environmental Engineer
C = Consultant
FA = Finance Analyst
HE = Highway Engineer
SA = Social Analyst
TE = Transport Engineer
AF = Availability of funds
PM = Project Management perf.
CLC = Compilance legal covenants
(1) = Time shared with other projects in Colombia

Loan - 2829-CO
Disbursements

Fiscal	Disbursement Planned				Disbursement Actual			
Year	US$ million	Acumulated	% Year	% Acumulated	US$ million	Acumulated	% Year	% Acumulated
1988	31.00	31.00	17.19	17.19	11.40	11.40	6.32	6.32
1989	35.60	66.60	19.74	36.94	18.30	29.70	10.15	16.47
1990	36.20	102.80	20.08	57.02	86.40	116.10	47.92	64.39
1991	30.50	133.30	16.92	73.93	40.70	156.80	22.57	86.97
1992	26.10	159.40	14.48	88.41	17.70	174.50	9.82	96.78
1993	19.70	179.10	10.93	99.33	2.80	177.30	1.55	98.34
1994	1.20	180.30	0.67	100.00	3.00	180.30	1.66	100.00



FISCAL Y	88	89	90	91	92	93	94
ESTIMATE	31	35.6	36.2	30.5	26.1	19.7	1.2
ACTUAL	11.4	18.3	86.4	40.7	17.7	2.8	3

INSTITUTO NACIONAL DE VIAS
OFICINA PROYECTOS ESPECIALES Y MEDIO AMBIENTE
SEGUNDO PROYECTO SECTORIAL DE CARRETERAS - PRESTAMO BIRF LN-2829-CO
AVANCE FISICO ALCANZADO CON CADA RECURSO

Sector	Long. Kms	Avance Fisico				
		Rec. Propios Kms	1471-Co Kms	2121-Co Kms	2829-Co Kms	Tipo
Honda - Mesones	70.0			67.7	2.3	R
El Picacho - Pamplona	73.0			47.7	25.3	R
Chiflas - Piedecuesta	29.0		25.3		3.7	R
Barbosa - Cisneros	61.0			12.2	48.8	P
Chiquinquira - Puente Otero	26.0				0.2	P
Chusaca - Girardot	170.0			74.1	37.4	R
Tunja - Vado Real	104.0	32.7	0.00	48.2	22.5	R
Rio Loro - Pitalito	88.0			55.5	2.5	R
Puerto Valdivia - K. 262	96.0			41.9	54.1	R
Bucaramanga - El Picacho	50.0			20.6	23.4	R
Bogota - Honda (K 126 - K 136)	10.0	1.3		0.0	8.7	R
Guayabal - Mariquita	20.9			12.0	8.9	P
Libano - Murillo	22.0	1.6		20.4	0.0	P
Armero - Cambao	23.8	1.4		17.4	5.0	P
Puente Lagunilla	45.0			7.9	37.1	PTE
K. 96 - Ambalema	13.5			11.6	1.9	P
Armero - San Pedro Falan	16.0	0.1		3.3	6.6	P
El Diviso - Ricaurte	47.7			2.0	6.4	P
Barbosa - Bucaramanga (K 136 - K 141)	22.5			2.5	12.0	R
Ricaurte - La Verbena	45.6			0.7	1.7	P
Puerta De Hierro - El Carmen	40.0			0.3	39.7	R
San Roque - Bosconia	90.0				30.0	R
Caimo - Club Campestre	8.4	1.7			6.7	P
Guasca - K 50 Y Paso Nacional	16.7			12.3	4.4	P
Q. Naranjal - Villavicencio	43.0	20.0			21.4	R
La Mesa - Tocaima	39.2			21.7	17.5	R
Tunja - Villa De Leyva	37.9				34.5	R
Chorodo - Puente Corozal	16.4				0.0	R
Barbosa - Velez	16.8			11.1	5.7	P
Bello - Rio Nechi	106.6				48.0	R
Chipaque - K. 68	42.0				30.0	R
Campo Godoy - Puerto Triunfo	27.5				27.5	P
Ortega - C. Olaya Herrera	21.4				21.2	P
Castilla - Coyaima	16.9			9.7	7.2	P
G/ Zamba - Sta. Veronica (K46 - K 64)	18.0	10.1			7.9	P
Sampues - Puerto De Hierro	44.4			4.3	18.9	R
Manglar - Cañas Gordas	18.7				5.6	P
Mesones - Manizalez	58.0				58.0	R
Granada - San Juan De Arama	32.5				19.5	P
Puente Corozal - El Chino	26.6				0.0	R
Pereira - Alcala	19.0				0.6	P
Cumaral - Rio Humea	31.6			0.1	0.0	P
La Linea - Armenia	34.8	28.2			6.6	R

INSTITUTO NACIONAL DE VIAS
OFICINA PROYECTOS ESPECIALES Y MEDIO AMBIENTE
SEGUNDO PROYECTO SECTORIAL DE CARRETERAS - PRESTAMO BIRF LN-2829-CO
AVANCE FISICO ALCANZADO CON CADA RECURSO

Sector	Long. Kms	Avance Fisico				
		Rec. Propios Kms	1471-Co Kms	2121-Co Kms	2829-Co Kms	Tipo
Chitaga - La Legia	36.9	4.8			32.1	P
Chiriguana - Becerril	71.0			39.1	31.9	P
Ocaña - El Tarra	53.0				33.8	P
Carreto - El Tigre	23.8	7.1			15.7	R
Sta. Marta - San Vicente Del Caguan	18.8	11.2			7.6	P
Yopal - Rio Unete	36.0	31.04			4.4	P
La Ye - Sampues	48.7			16.4	24.1	R
Monteria - Aeropuerto	10.6				10.6	P
Chinacota - Toledo	32.2			6.5	25.7	P
Vado Real - Oiba	29.0			15.9	13.1	R
K. 262 - Planeta Rica	76.0			36.3	39.7	R
Pto. Colombia - Sta. Veronica (K64-K7)	11.0	2.9			8.1	P
Rio Neiva - Algeciras	13.5	7.6			5.9	P
Laberinto - Paicol	33.5				33.5	P
Cambao - T. De Viani	45.0			11.7	12.6	P
La Union - La Frontera	18.9			8.4	10.5	P
Bosconia - Valledupar	93.0	60.8			32.2	R
Saldaña - Espinal	28.0	18.9			9.1	P
Tocaima - Girardot	31.6			22.5	9.1	R
Chinchina - La Manuela	7.0	2.3		2.5	2.2	P
Popayan - Patico	18.2			16.3	0.5	P
Plato - Bosconia	112.6			4.4	9.4	P
Ipiales - Gualmatan	22.2			4.5	4.7	P
Monteria - Planeta Rica - La Ye	105.0			67.7	37.3	R
Carmen - Zambrano	40.5				17.5	P
Tres Puertas - La Felisa	41.7			16.2	25.5	P
Florida - Santander	55.6	7.1		25.9	8.0	P
Carmen - Carreto	44.7			2.9	11.5	R
Rio Nechi - Puerto Valdivia	61.0				25.3	R
Remolino - Ciudad Bolivar	17.0				0.0	P
Puente La Rampa	20.6	7.6			13.0	PTE
K. 27 - Pto. Araujo	9.5				4.4	P
Rio San Juan - K. 27	8.1				2.7	P
Caño Alegre - Pto. Boyaca	15.7				15.7	P
La Caro - Ventaquemada	97.0			39.9	30.1	R
Neiva - Rio Loro	99.0			82.9	16.1	R
La Frontera - Sonson	36.4				36.4	P
Remolino - Jardin	49.0				0.0	P
Puente Rio San Juan	50.0	0.3			20.2	PTE
K.81 - K. 102 (Pto. Araujo - La Lizama)	21.0				0.0	P
Puerto Araujo - K. 57	20.5				0.0	P
K.57 - K. 81 (Pto. Araujo - La Lizama)	24.0				0.0	P
Guasca- Gacheta						

INSTITUTO NACIONAL DE VIAS
OFICINA PROYECTOS ESPECIALES Y MEDIO AMBIENTE
SEGUNDO PROYECTO SECTORIAL DE CARRETERAS - PRESTAMO BIRF LN-2829-CO
AVANCE FISICO ALCANZADO CON CADA RECURSO

Sector	Long. Kms	Avance Fisico				
		Rec. Propios Kms	1471-Co Kms	2121-Co Kms	2829-Co Kms	Tipo
TOTAL Kms	**3527.2**	**258.7**	**25.3**	**925.2**	**1326.4**	
TOTAL Mts						

* Se Refiere A Kilómetros Pavimentados

** Metros Terminados

IMAGING

Report No: 14735
Type: ICR