Document of
The World Bank

Report No:ICR0000366

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IBRD-46140)

ON A

LOAN

IN THE AMOUNT OF US$50 MILLION

TO THE

REPUBLIC OF PERU

FOR THE

SECOND RURAL ROADS PROJECT

June 5, 2007

Sustainable Development Department
Bolivia, Ecuador, Peru, Venezuela Country Management Unit
Latin America and the Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective June 5, 2007)

Currency Unit = Peruvian Nuevo Sol

3.175 PEN = US$1

Fiscal Year

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AADT	Average Annual Daily Traffic
CAS	Country Assistance Strategy
CBA	Cost Benefit Analysis
CEA	Cost Effectiveness Analysis
CND	*Consejo Nacional de Descentralización* (National Decentralization Council)
CVR	*Comité Vial Rural* (Rural Road Committee)
ERR	Economic Rate of Return
ESW	Economic and Sector Work
FM	Financial Management
GIS	Geographic Information System
HDM	Highway Development and Management (model)
IBRD	International Bank for Reconstruction and Development
ICR	Implementation Completion Report
IADB	Inter-American Development Bank
ISR	Implementation Status Report
LAC	Latin America and Caribbean region
LDW	Local Development Window
MDG	Millenium Development Goal
MEF	Ministry of Economy and Finance
MEMV	*Micro-Empresas de Mantenimiento Vial* (Micro-enterprises for Road Maintenance)
M&E	Monitoring and Evaluation
MTC	*Ministerio de Transporte y Comunicaciones* (Ministry of Transport and Communications)
NGO	Non-Governmental Organization
NMT	Non-Motorized Transport
NPV	Net Present Value
PAD	Project Appraisal Document
PDO	Project Development Objective
PII	Provincial Infrastructure Institute
PPS	*Plan Piloto Selva* (Pilot Plan for the *Selva* macro-region)
PRI	Provincial Road Institute
RED	Roads Economic Decision (model)
RIPA	Road Institute for the Province of Arequipa
SIAF	*Sistema Integral de Administración Financiera* (Nacional System of Public Investment)
SIGAT	*Sistema de Gestión Administrativa y Técnica* (System for Technical and Administrative Management)
SIM	Sector Investment & Maintenance loan
SNIP	*Sistema Nacional de Inversión Publica* (National Public Investment System)
SUNAT	*Superintendencia Nacional de Administración Tributaria* (National Agency for Tax Management)
WB	World Bank

Vice President:	Pamela Cox
Country Director:	Marcelo Giugale
Sector Manager:	Jose Luis Irigoyen
Project Team Leader:	Nicolas Peltier-Thiberge

Peru

Second Rural Roads Project

CONTENTS

A. Basic Information

Country:	Peru	Project Name:	SECOND RURAL ROADS PROJECT
Project ID:	P044601	L/C/TF Number(s):	IBRD-46140
ICR Date:	06/05/2007	ICR Type:	Intensive Learning ICR
Lending Instrument:	SIM	Borrower:	GOVERNMENT OF PERU
Original Total Commitment:	USD 50.0M	Disbursed Amount:	USD 48.2M

Environmental Category: B

Implementing Agencies:
Provias Rural, renamed Provias Descentralizado in 2006

Cofinanciers and Other External Partners:
Inter-American Development Bank (IADB)

B. Key Dates

Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	02/23/2000	Effectiveness:	12/20/2001	12/20/2001
Appraisal:	10/23/2000	Restructuring(s):		
Approval:	06/19/2001	Mid-term Review:	04/19/2004	04/19/2004
		Closing:	06/30/2005	11/30/2006

C. Ratings Summary

C.1 Performance Rating by ICR

Outcomes:	Highly Satisfactory
Risk to Development Outcome:	Moderate
Bank Performance:	Highly Satisfactory
Borrower Performance:	Highly Satisfactory

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)

Bank	Ratings	Borrower	Ratings
Quality at Entry:	Highly Satisfactory	Government:	Satisfactory
Quality of Supervision:	Highly Satisfactory	Implementing Agency/Agencies:	Highly Satisfactory
Overall Bank Performance:	Highly Satisfactory	**Overall Borrower Performance:**	Highly Satisfactory

C.3 Quality at Entry and Implementation Performance Indicators			
Implementation Performance	Indicators	QAG Assessments (if any)	Rating
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	No	Quality of Supervision (QSA):	None
DO rating before Closing/Inactive status:	Satisfactory		

D. Sector and Theme Codes

	Original	Actual
Sector Code (as % of total Bank financing)		
Central government administration	1	2
Micro- and SME finance	2	2
Ports, waterways and shipping	4	2
Roads and highways	90	90
Sub-national government administration	3	4
Theme Code (Primary/Secondary)		
Access to urban services and housing	Primary	Primary
Municipal governance and institution building	Primary	Primary
Participation and civic engagement	Primary	Primary
Rural non-farm income generation	Primary	Primary
Rural services and infrastructure	Primary	Primary

E. Bank Staff

Positions	At ICR	At Approval
Vice President:	Pamela Cox	David de Ferranti
Country Director:	Marcelo Giugale	Isabel M. Guerrero
Sector Manager:	Jose Luis Irigoyen	Danny M. Leipziger
Project Team Leader:	Nicolas Peltier-Thiberge	Jose Luis Irigoyen
ICR Team Leader:	Nicolas Peltier-Thiberge	
ICR Primary Author:	Julie Babinard	

F. Results Framework Analysis

Project Development Objectives (from Project Appraisal Document**)**
Improve the access of rural poor to basic social services, market integrating infrastructure and income-generating activities with gender equity, to help alleviate rural poverty and raise the living standards of rural communities. Specific objectives are: (a) to integrate poorly accessible zones to social services and regional economic centers; (b) generate employment in rural areas; and (c) strengthen local institutional capacity to manage rural roads on a sustainable basis and launch community-based development initiatives.

Revised Project Development Objectives (as approved by original approving authority)
None

(a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Beneficiaries in the project area who are interlinked by a reliable and affordable transportation system (million people)			
Value (quantitative or Qualitative)	0	3.5 million		3.5 million
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The project end target had been met (the rural population of the 12 departments where the project has been active amounts to 3.5 million).			
Indicator 2 :	Decreased travel time to markets and district centers after rehabilitation of project road			
Value (quantitative or Qualitative)	0	-40%		-53%
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The project end target has been exceeded. Achievement: 132%			
Indicator 3 :	Increased availability of freight and passenger transport services (volume)			
Value (quantitative or Qualitative)	0	+30%		+115%
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The project end target has been exceeded. However, the statistical significance of this result is low. Traffic has increased by 132% and this figure is statistically significant at 10%. Achievement: 383%			
Indicator 4 :	Reduced cost of freight and passenger transport services			

Value quantitative or Qualitative)	0	-15%		Freight: -18% Passengers: -78%
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The project end target has been exceeded. The freight's figure has a low statistical significance, but the passengers' figure is statistically significant at 5%. Achievement: 120% and 520%			
Indicator 5 :	Number of one-year equivalent seasonal unskilled jobs generated by road rehabilitation works			
Value quantitative or Qualitative)	0	10,000		27,514
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The project end target has been exceeded. Achievement: 275%			
Indicator 6 :	Number of one-year equivalent permanent unskilled jobs generated by road maintenance works			
Value quantitative or Qualitative)	4,618	5,500		5,997
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The project end target has been exceeded. Achievement: 109%			
Indicator 7 :	Number of community organizations and/or micro-enterprises which are engaged in local development initiatives/income-earning undertakings identified through the Local Development Window (LDW), with participation of women above 30%			
Value quantitative or Qualitative)	0	300		167
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The figure presented corresponds to a more restrictive definition of initiatives identified through the LDW since it corresponds to initiatives that reached "feasibility stage". Otherwise, it jumps to 850. Achievement: 55%			
Indicator 8 :	% of provincial municipalities co-financing with Provias the maintenance of the rural road network rehabilitated in their jurisdictions through the arrangements set up under the project			
Value quantitative or Qualitative)	0	100		93
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	This target had to be reached for each Peruvian fiscal year and was measured by the proportion of municipalities that signed a financing agreement with Provias for road maintenance. In 2006, the target has been partially met.			

	Achievement: 93%			
Indicator 9 :	Number of provincial municipalities graduated under the program and assuming full responsibility for execution of project activities			
Value quantitative or Qualitative)	0	12		99
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The project end target has been exceeded. This is one of the most significant project achievements, particularly in the broader context of Peru's decentralization reforms. Achievement: 825%			
Indicator 10 :	Number of micro-enterprises engaged under contracts to deliver quality maintenance			
Value quantitative or Qualitative)	340	470		532
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The project end target has been exceeded. Achievement: 113%			

(b) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Rural roads rehabilitated to an adequate level of trafficability (km)			
Value (quantitative or Qualitative)	0	3,225		4,039
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The project end target has been exceeded. Achievement: 125%			
Indicator 2 :	Connecting primary and secondary roads rehabilitated to "good" condition (km)			
Value (quantitative or Qualitative)	0	350		653
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The project end target has been exceeded. Achievement: 186%			
Indicator 3 :	Roads routinely maintained at project standards by micro-enterprises formed and trained under the project (km)			
Value (quantitative or Qualitative)	11,295	13,500		14,750

Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The project end target has been exceeded. Achievement: 109%			
Indicator 4 :	Community tracks for non-motorized transport improved (km)			
Value (quantitative or Qualitative)	0	3,100		3,465
Date achieved	09/30/2001	11/30/2006		11/30/2006
Comments (incl. % achievement)	The project end target has been exceeded. Achievement: 112%			

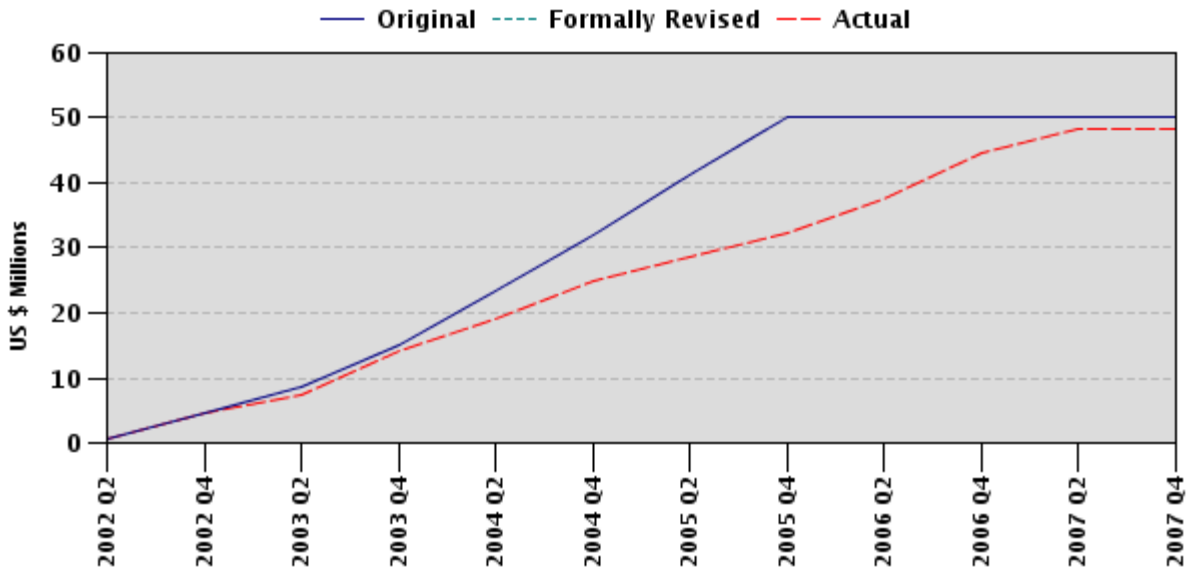
G. Ratings of Project Performance in ISRs

No.	Date ISR Archived	DO	IP	Actual Disbursements (USD millions)
1	08/07/2001	Satisfactory	Satisfactory	0.00
2	05/28/2002	Satisfactory	Satisfactory	4.53
3	11/27/2002	Satisfactory	Satisfactory	6.48
4	02/26/2003	Satisfactory	Satisfactory	10.40
5	05/30/2003	Satisfactory	Satisfactory	12.86
6	11/13/2003	Satisfactory	Satisfactory	19.15
7	05/25/2004	Satisfactory	Satisfactory	23.68
8	11/29/2004	Satisfactory	Satisfactory	27.16
9	04/04/2005	Satisfactory	Satisfactory	30.78
10	10/27/2005	Satisfactory	Satisfactory	34.99
11	06/06/2006	Satisfactory	Satisfactory	42.65
12	12/04/2006	Highly Satisfactory	Highly Satisfactory	48.19

H. Restructuring (if any)

Not Applicable

I. Disbursement Profile



1. Project Context, Development Objectives and Design:

1.1 Context at Appraisal:

Country background. The overarching objective of the Country Assistance Strategy (CAS) in Peru has been to support the Government of Peru in achieving economic growth and a sustained and continuous reduction of poverty. The primary elements of the anti-poverty program have consisted of raising the quality and improving the access of the poor to productivity-increasing human capital, market-integrating infrastructure, and the full rights and opportunities of private ownership. The Peruvian Government also engaged in a large scale decentralization process to improve both the coverage of rural infrastructure and the quality of public expenditures.

The project was presented in the context of the 2001 CAS Progress Report, which aimed to assist the Government in reviving the country's economy following the chain of adverse exogenous shocks that hit the country in the 1997-2000 period. In contrast to the significant growth period of the early 1990s (at 5.7 percent per year between 1991-1997), Peru experienced a severe economic recession during the 1997-2000 period (with an annual economic growth rate of 0.9 percent during 1997-2000), partly due to external shocks such as the Asian and Russian crises, the devaluation of the Brazilian currency, and El Niño. During that period, the economy stagnated, the fiscal deficit increased as did the rate of poverty (the poverty rate was estimated to have risen again to 54 percent by 2000), and private investment declined.

Main sector issues. Poverty in Peru had been heavily concentrated in rural areas, with over half of the rural Peruvians considered extremely poor, living on less than US$1 a day. The incidence of poverty has varied across regions; with poverty rates in the *Sierra* (highlands) and *Selva* (jungle) nearly double that of coastal regions. More than half of the extremely poor population resided in the rural sierra, although it had less than a quarter of the national population. Indigenous people comprised an estimated 15 percent of the population but had a poverty rate of 70 percent.

Further reduction of rural poverty rates was constrained by a number of rural transport sector issues. Lack of an effective road network in Peru had kept rural communities and the poor living in remote areas isolated and without opportunities for accessing markets, jobs, and socio-economic services. Road density in Peru was lower than in most South American countries or in countries with a similar level of development, with density of 6.7 km of asphalt roads per 1000 square kilometers or just over one-third of neighbors such as Chile and Brazil. Peru's road network consisted of about 78,000 km with a large unknown number of unclassified tracks that connected the dispersed population to the rural road network. Despite a successful rural road program implemented with the support of the WB and the IADB in the year 1995-2000, (which rehabilitated 8,900 km of rural roads), about 80 percent of the 47,000 km of the rural road network was still in very bad to barely acceptable condition which, combined with poor maintenance practices and a lack of adequate drainage systems, made traveling a challenge for the nearly three million people living in isolated villages in Peru's difficult mountainous terrain.

Under these conditions, the level of motorized transport remained low, with only a few vehicles venturing to reach rural communities and making the provision of transport services unreliable. Vehicle ownership for most of the poor rural households remained limited to only the most affordable types of non motorized vehicles. A large number of communities relied exclusively on non-motorized transport for travel outside of their settlements, often through neglected and unsafe paths.

The 1995 Rural Roads Program implemented by the Government of Peru, with support from multilateral organizations, aimed to upgrade the condition of the rural road network through the rehabilitation of existing infrastructure and to establish mechanisms for the maintenance of this infrastructure on a sustainable basis. The Peru Rural Roads Project, which constituted the first phase of the program with a WB loan of US$90 million, aimed to alleviate poverty and raise living standards in the 12 departments that ranked highest in rural poverty, 10 in the *Sierra* (Ancash, Apurimac, Ayacucho, Cajamarca, Cusco, Huancavelica, Huanuco, Junin, Pasco, and Puno), and 2 in the *Selva* (Madre de Dios and San Martin). The project improved rural accessibility in 314 districts by rehabilitating about 11,200 km of rural roads and key secondary roads connecting them to regional centers, and about 3,000 km of paths for non-motorized transport. This first phase demonstrated that the rehabilitation of rural road infrastructure, when immediately followed by sustained maintenance performed through community-based organizations, was a cost-effective way of restoring basic rural accessibility and could stimulate poverty alleviation in the rural highlands of Peru. Rural communities realized that without maintenance, and regardless of how well roads were rehabilitated, passage is compromised and with it a wide array of services that affect their social and economic livelihood. This first phase also provided important insights into the constraints faced by central agencies to implement rural development programs.

The Second Roads Project was built on the impressive results of the first rural roads project with the aim to deepen the impact of its activities in the same 12 departments. The project aimed to focus investments in areas with high levels of poverty and emphasized labor-intensive maintenance methods as a means to generate employment in those areas. In this manner, the project would help improve the access of rural communities to markets, on- and off-farm economic opportunities, and social services, thereby bringing these communities into the economic mainstream—the essence of any poverty alleviation program. The project also aimed to strengthen the institutional and financial sustainability of rural road maintenance in order to enable a gradual transfer of responsibilities to local governments. Finally, the project also piloted rural transport interventions customized to the specific conditions of the Peruvian *Selva* and introduced a new mechanism (the "Local Development Window") aimed at facilitating the emergence of productive activities in the areas where transport conditions had improved.

Strategic choices for the project components were developed on the basis on cross-sectoral dynamics that were identified as contributing to the persisting poor living conditions of rural households:

- *Improving rural accessibility through rehabilitation of transport infrastructure.* The inefficiency of the transport system continued to represent a significant constraint on the ability of rural households to access social and government services, such as health, education, justice, policing, and public registries. The project aimed to emphasize the connection of the benefited rural communities with a well-integrated and reliable road transport system through rehabilitation and maintenance of a "core" road network composed of rural roads and connecting primary and secondary roads. This strategy would help remove the bottlenecks constraining transport services in rural areas, maximize the population benefited and, overall, have a greater social and economic impact than in the case of isolated road improvements. Through improved road access, the project would also permit easier coordination among other rural development programs. Finally, by introducing local governments to the principle of "network" management (including the informal network of non-motorized tracks), it would significantly improve transport services.

- *Integrating rural communities and producers to markets and business opportunities.* Lack of a reliable transport system, reflected in high transport and transaction costs, hampered the capacity of rural farmers to access markets while influencing production costs, crop marketing decisions and ultimately farm income. Building on a strategic partnership with civil society, the project aimed to stimulate the creation of local business opportunities integrated with markets, combining the provision of technical assistance to community-based organizations (including road committees and micro-enterprises that participate in the maintenance of rehabilitated rural roads and tracks) with a communication and community organization strategy to facilitate the realization of productive gains from the improvement of the rural roads network. This strategy aimed to develop more formal relationships between rural producers and markets through improved access to information and organization skills and strategic partnerships.

- *Facilitating the empowerment of local organizations and vulnerable groups.* Lack of mobility hindered opportunities for enhancing people capabilities and collective action for mutual benefit (referred to as “social capital”). The project aimed to enhance social capital building by establishing a "local development window” which would lead to positive changes in many aspects of women daily life, by supporting the following measures to engender project activities and promote women empowerment: (i) providing training on gender issues to program staff, majors and community leaders through the institutional development component; (ii) fostering implementation arrangements that will gradually but effectively contribute to gender mainstreaming; (iii) supporting through the "Local Development Window" specific programs and productive undertakings that would improve women’s access to resources; and (iv) tracking gender impacts through the project’s social and impact monitoring system to clarify what gender-differentiated project outcomes can be anticipated, and how different local realities might affect women’s participation in project activities and benefits. While the project would not set "quotas", women’s participation in micro-

enterprises would be monitored to ensure that the application of the methodology for selecting micro-enterprise members was not biased against women.

- *Strengthening the framework for decentralization and for rural road maintenance in particular*. Peru's decentralization agenda aimed to develop capabilities and institutions at the local level and the transfer of resources to local governments. In support of this agenda, the project aimed to prepare local governments to manage, on a sustainable basis, the maintenance and upgrading of the rural road infrastructure under their jurisdiction (the municipal responsibility over rural transport infrastructure had been confirmed by the recently approved Transport Law). The project introduced local governments to key principles for systemic management of their rural road networks (including the informal network of non-motorized tracks) and supported: (i) a strong institutional strengthening component, with specific targets regarding the use of more effective management structures and tools; (ii) further deconcentration of project activities to project field units to explore arrangements for delegating responsibility through performance agreements; (iii) a pilot on decentralized management of provincial road networks to test the use of institutional and financial models, information reporting systems and appropriate mechanisms for the flow of funds; and (iv) a "graduation" policy to encourage the transfer of direct responsibility to local governments, under which municipalities that have assimilated the policies and practices supported by the project would become eligible for direct execution of project activities in subsequent phases of the rural roads program.

Rationale for Bank assistance. The Bank's key role in designing the Rural Roads Rehabilitation and Maintenance Program had been well appreciated by the Borrower. Bank involvement brought several "best practice" approaches such as the NMT component, which were highly innovative and positive in their outcomes. Bank assistance during the second phase sought to continue bringing global experience to further and also increase the sustainability of rural road sector reforms, deepening the consideration of social issues in alleviating rural poverty, and enhancing coordination with other rural development programs. Also, the Bank could bring considerable knowledge and experience as a result of its extensive worldwide involvement in the transport sector and its analytical rigor in relating transport interventions with poverty reduction. Finally, through its wide participation in most of Peru's poverty alleviation programs in rural areas and its extensive involvement with civil society representatives, the Bank had accumulated a substantial amount of knowledge on the large number of programs presently underway and the issues that needed to be addressed to improve their effectiveness.

1.2 Original Project Development Objectives (PDO) and Key Indicators:

Overall Goal. The overall purpose of the proposed project was to increase access to basic social services and economic and income-generating activities with gender equity, to help alleviate rural poverty and raise living standards of rural communities in Peru. The project was the second phase of the Rural Roads Program launched in 1995 to provide a

well-integrated and reliable rural road system in the rural Sierra of Peru that could complement the Government's multi-sectoral poverty reduction program. To do so, it aimed to emphasize the creation of development opportunities through concerted local interventions in order to enhance the impact of rural accessibility improvement on poverty reduction. It also sought to strengthen the institutional and financial sustainability of rural road maintenance in order to enable a gradual transfer of responsibilities to the local government environment.

Specific Project Objectives. The specific project development objectives were to: (a) integrate poorly accessible zones to social services and regional economic centers; (b) generate employment in rural areas; and (c) strengthen local institutional capacity to manage rural roads on a sustainable basis and launch community-based development initiatives.

Key performance indicators. The key development outcomes and performance indicators selected to measure achievement at the end of the project were as follows:

1. Poorly accessible rural zones integrated to social services and regional economic drivers:

- 3.5 million beneficiaries in the project area interlinked by a reliable and affordable transportation system;
- travel time to markets and district centers decreased by 40 percent after rehabilitation of project roads; and
- the availability of freight and passenger transport services increased by 30 percent and their cost reduced by 15 percent with respect to the levels reported in the baseline studies, three years after completion of road improvements.

2. Employment generated and creation of further income-earning activities stimulated in rural areas:

- 10,000 one-year equivalent seasonal unskilled jobs generated by road rehabilitation works;
- 5,500 one-year equivalent permanent unskilled jobs generated by road maintenance works;
- 300 community organizations and/or micro-enterprises engaged in local development initiatives/income-earning undertakings identified through the Local Development Window (LDW), with women participation above 30%.

3. Local institutional capacity strengthened to manage rural transport infrastructure on a sustainable basis and launch community-based development initiatives:

- 100% of provincial municipalities co-finance with the Rural Roads Program the maintenance of the rural road network rehabilitated in their jurisdictions through the arrangements set up under the project;
- At least 12 provincial municipalities graduated under the program assume full responsibility for execution of project activities;
- 470 micro-enterprises engaged under contracts to deliver quality maintenance.

In addition, the project's contribution towards the goal of reducing rural poverty and improving living standards was to be measured at the project's end in terms of:

- an overall reduction of the incidence of poverty and extreme poverty by 1 and 2 percentage points, respectively, in the areas benefited by the project;
- an overall reduction of the poverty gap by 1.5 and 2.2 percentage points in areas served by the rehabilitated rural roads and non-motorized tracks, respectively;
- an increase in the number of visits to health posts and hospitals by 20 percent, reflecting both greater access and consumption capacity; and
- a gradual diversification of the income-generation structure and more dynamic labor markets in areas benefited by the project (e.g., percentage of wage-earned income/time earning wage increased, percentage of non-agriculture income increased).

1.3 Revised PDO:

There were no revisions to the project objectives.

1.4 Main Beneficiaries:

Three main groups were identified as beneficiaries of the project: 1) Rural population of 3.5 million living in the 12 departments targeted, representing about 70 percent of the rural population of Peru and about 20 percent of the total. In these rural communities women were expected to constitute a major beneficiary group because of expected better access to social services, such as schools and hospitals, and their potential involvement in road work activities; 2) Small enterprises and community groups, which would be formed or strengthened as a result of their involvement in the execution of the works financed by the project. Workers employed by the project would improve their skills and qualifications, thereby increasing their chances for employment after project completion. Small firms and micro-enterprises created under the project would develop their entrepreneurial and organizational skills, making them more competitive with greater access to a reliable cash-flow; the Local Development Window would also promote the emergence of productive activities and also strengthen the entrepreneurial capacity of the targeted rural areas; 3) The nearly 110 provincial municipalities and their respective district municipalities, which would be exposed to institutional and financial arrangements for a more cost-effective management of their rural roads networks in the broader context of the decentralization reforms.

1.5 Original Components:

The project included the six following components:

Component 1: Rehabilitation of Rural Roads and Connecting Primary and Secondary Roads. This component aimed to finance the rehabilitation of about 3,575 km of roads in the 12 participant departments in order to improve accessibility to rural areas as well as restore operating conditions along regional economic road corridors. About 3,225 km of rural roads were envisaged to be rehabilitated (with a traffic pattern ranging from a few

vehicles a day up to 15-20 vehicles on peak market days, mostly micro-buses and 3 ton trucks). Primary and secondary roads that give access to the rural road systems were also to be rehabilitated and connected with markets and economic centers. These were unpaved roads that carry traffic in the range of 50 to 200 vehicles per day and were left in deplorable condition due to lack of regular maintenance. *Provias* had already rehabilitated about 2,300 km of primary and mostly secondary roads during the first phase of the Peru Rural Roads Program, so the 350 km planned under the project consisted of carefully selected roads that were critical to integrating into consolidated networks all the roads restored under the program. Most of the works were to be contracted out to small local contractors, to make use of the labor force available from, and to increase farm incomes for, the benefited communities during periods of reduced agriculture activity, notably between March and September in the Sierra, which is the dry season when most of the works were to be carried out.

Component 2: Routine and Periodic Maintenance of Rural Roads and Connecting Primary and Secondary Roads. This component sought to give continuity to, and further strengthen, the routine maintenance system set up during the first phase of the program. It entailed maintaining about 11,300 km of roads at the beginning of the project to about 13,495 km at the end of the project. The road network in most of the *Sierra* region first had to receive rehabilitation before maintenance activities could begin. Subsequent routine road maintenance would consist of simple works regularly performed throughout the year to maintain the drainage systems (ditches, culverts, vegetation) and the running surface (filling potholes and ruts, maintaining the surface camber), supplemented from time to time with spot interventions to restore passage, which is needed typically during the rainy season between December and April.

Routine maintenance of the roads rehabilitated through the project would be co-financed by local governments, through a specific arrangement (The Maintenance Cofinancing Mechanism). The project would finance these activities, taking into consideration that most Peruvian municipalities have very limited resources available for recurrent expenditures, especially in the poorest areas which are the main target of the project. However, other roads could also be included if local governments committed themselves to supporting these activities. Maintenance of roads built or rehabilitated by other rural development programs could also be eligible for project support, provided they were linked with or in the vicinities of road sub-projects implemented under the project.

The project extensively relied on the provision of services through the private sector. However, municipalities and associations of municipalities capable of setting up an efficient plant pool could be eligible up to a certain amount to undertake periodic maintenance works under agreements that would set out program targets and quality standards to be met, as well as the standard rates to compensate the municipalities upon completion of the agreed works.

Component 3: Improvement of Non-Motorized Rural Transport. This component provided local governments and communities with a tool to assist them in the formulation of coherent programs for the management and maintenance of village level infrastructure

and improvement of transport technology. To this end, this component was to finance: (i) technical assistance for village-level infrastructure management. Participant communities would be a determinant in the selection, planning, implementation and financing of the proposed works. The project would continue relying on NGOs with an established reputation in the area to design, organize the community into road committees, and supervise the works. District authorities would oversee the programs and organize at least twice a year "*faenas comunales*" to maintain the improved paths; (ii) physical works aimed at removing unsafe spots and other bottlenecks constraining the use of the intermediate means of transport and facilities aimed at improving rural transport services and conditions, including "*tambos*" for people to rest and keep safe animals and goods during long journeys. The project was to finance 70 percent of the total cost estimated by *Provias* for the proposed works based on standard designs and unit costs. This was to fully cover the cost of materials, equipment and skilled labor, while part of the unskilled labor would be contributed by the community.

It was anticipated that the project would have a positive indirect impact on making rural transport more efficient and affordable by raising awareness of the importance of transport services over the unclassified village network through this component, helping design ad-hoc local programs to mobilize additional financial aid for this or other purposes (see the local development window in component 6.4), and generating supplemental income through implementation of the road components.

Component 4: Provincial Road Management Pilot. The proposed pilot aimed to test an institutional model for managing the rural road network at the provincial level, in which the municipal authorities of the province (provincial and district municipalities) would jointly assume responsibility over the development and condition of a core provincial road network. This would prevent the current institutional and financial segmentation hindering municipalities from undertaking integrated initiatives or responsibilities. The province of Arequipa was chosen to start the pilot on account of the strong commitment demonstrated by the provincial authorities to the pilot goals and the availability of basic institutional capacity on which to build on to carry out the up-front work and implement the pilot later on with greater chance of success.

The pilot was designed building on a series of participatory workshops that involved provincial and district officials as well as key representatives of the business community with vested interests in good roads. Municipal authorities agreed upon the institutional and financial set up to carry out the pilot and on the provincial road plan with the core investments proposed for funding. The Assembly of Mayors of the province issued the ordinance establishing the Road Institute for the Province of Arequipa (RIPA), a decentralized public agency with the specific mandate to act on behalf of all the participating municipalities with autonomy to contract out works and services (which may extend beyond the boundaries of a specific district) and administer the resources channeled from various sources (i.e., central government through *Provias*, participant local governments), and with its own budget separate from those of other provincial organizations.

As part of the proposed Pilot, the project would finance pre-investment studies and works for rehabilitation of about 200 km of priority roads, and co-finance on a declining basis their subsequent routine maintenance costs for up to three years. Carried out under close monitoring by *Provias*, these activities would serve as a controlled test of a model for decentralized road management, with the expectation to expand to other provinces the model and implementation arrangements tested under the pilot, once they prove to be adequate and once other provinces achieve the basic institutional and financial capacity to implement them.

The pilot would also help *Provias* develop skills and tools in areas such as supervising the execution of provincial agreements for decentralized management of rural road programs, setting goals and time frames for transferring responsibility to other participant provinces, and ultimately overseeing the performance of rural road systems and the local agencies that manage them.

Component 5: River Transport Improvement Pilot. This pilot aimed to develop a strategic framework for improving rural accessibility in the Selva region and thereby enable sustainable social and economic development in these areas. The pilot sought to ascertain the set of technical, institutional, social, environmental and economic guidelines needed for putting in place an effective inter-modal transportation system, capable of: (i) addressing the current accessibility constraints faced by the impoverished communities living along or near the rivers, in terms of access to basic services, regional markets, income-earning activities, (ii) averting the potential direct or indirect negative impacts induced by such system on the fragile ecosystems of the Peruvian Amazonia; and (iii) assisting local governments in creating economic opportunities that could lead to a more sustainable and poverty reducing development of these areas.

The pilot was to be carried out in a purposely limited area, in just three locations along the Ucayali river between Pucallpa and Atalaya: Masisea, Bolognesi/Nueva Italia and Nueva Requena (the latter actually along the Aguaytia river) and entailed: (i) completion of environmental, social and economic impact assessments for each of the areas selected and the corresponding engineering studies; (ii) construction of safe moorings (small wharves) and durable landing facilities to improve cargo handling and make passenger and workers' access safer and easier; (iii) spot rehabilitation of the existing rural roads that connect communities to the improved landing facilities; (iv) rehabilitation of non-motorized tracks that connect with landing facilities and rural roads rehabilitated under the pilot; (v) design and implementation of a participatory monitoring and evaluation system to keep track of outcomes and medium term direct and indirect impacts; and (vi) establishment of partnerships for concerted interventions in the pilot area beyond the transport sector.

Riverside communities that were consulted prior to the project believed that only more ambitious road investments would solve their integration problems and get out of poverty. Thus, the pilot supported a more holistic view of development interventions, in which the proposed transport improvements were to be accompanied by: (i) technical assistance in areas such as land use planning and marketing or commercialization

strategies for local products; (ii) strategic partnerships to strengthen local organizations and obtain technical and financial support to develop productive projects; and (iii) interventions in other sectors such as water, sanitation, health and education.

The monitoring and evaluation of positive and negative changes as a result of each location was to take place at two levels. Satellite imaging would be used for monitoring changes at a regional or meso-level, such as land use, deforestation, fire points, and agricultural crops. Surveys, interviews with focus groups, and community workshops would be used for monitoring local changes and conflicts at an intra and inter-village level. The system envisaged intense involvement of civil society, community organizations, and the population at large in the planned monitoring activities.

Component 6: Institutional Development. This component aimed to further develop the institutional building program started under the first phase and was organized into the following four streams:

1) Improving rural transport policy and strategies at a central level. The project would strengthen MTC's capacity to: (i) formulate a policy framework and strategy for rural transport (infrastructure and services) consistent with the progress made on the decentralization and poverty reduction agendas and the various regulations mandated by the Transport Law (approved in October 1999); (ii) engage in a collaborative dialogue with other Ministries on national priority themes whose domain cuts across sectors (i.e., decentralization, poverty reduction); (iii) program investments in coordination with other agencies within and outside MTC (including those in charge of poverty reduction programs, especially relevant for the project); (iv) monitor the performance of the sector and of the rural transport system in particular, and compliance with those investment programs critical to improving rural transport services.

This component would also assist *Provias* in further strengthening the road maintenance system and would incorporate into the system best practices and productivity gains observed during its application under the first project, establish different standards and costs in accordance with road characteristics and usage, and transfer more responsibility to local governments in line with the phasing in of the maintenance co-financing mechanism.

In addition, *Provias* staff would receive training on areas that either demanded new skills or would receive more attention during the second phase of the program, such as handling the dialogue with municipalities, approaches to strengthening community organizations, and gender issues. This training would facilitate the accomplishment of other activities planned under the project to encourage gender equality in rights, resources and voice.

The project would also help *Provias* widen its contacts with civil society and Peruvian think-tanks involved in rural development research activities. The workshops and surveys carried out under the project would contribute to establishing a "forum", where project activities and the data gathered through them could support further research activities by

public and/or private organizations, and where researchers and think-tanks could contribute through their knowledge and findings of their own research activities to a better understanding of rural poverty links and the formulation of more effective strategies for a sustainable reduction of rural poverty.

2) Improving Planning and Management of Rural Roads. The project aimed to provide technical assistance to provincial and district municipalities to strengthen their capacity to: (i) manage the core road network under their jurisdiction through efficient participatory planning and accurate road inventories; (ii) carry out and increasingly finance road maintenance operations (routine and periodic); and (iii) help the communities in their jurisdiction to organize and maintain the network of community tracks and paths that serve them through faenas comunales and other forms of collective action.

The institutional program would expose all participating municipalities to the organizational shortcuts, the simple planning and budgeting systems, and the extensive use of labor-based methods and contract arrangements promoted under the project. The program would set up a demand-driven, flexible assistance agenda for provincial municipalities to becoming eligible for direct execution. It would also finance consultant services, participatory planning and evaluation processes, and provide training on-the-job only in those municipalities who request the assistance and therefore their majors are committed to leading the program. Finally, the program would involve road users and other stakeholders in the road management process to increase municipalities' accountability.

3) Developing community-based micro-enterprises for road maintenance. The project would finance all activities related to: (i) promoting the development of micro-enterprises among leaders of the communities and base organizations; (ii) assisting micro-enterprises throughout their constitution, including legal and technical advice; (iii) contracting out to micro-enterprises maintenance of all roads rehabilitated under the project; (iv) putting in place adequate contract arrangements and payment systems; (v) providing on-the-job assistance training on technical, work organization, financial management/accounting, and business administration skills until micro-enterprise members develop entrepreneurial capacity; (vi) supervising and monitoring maintenance works and micro-enterprise activities to ensure smooth implementation of the program; and (vii) supporting a dissemination campaign among local governments to sensitize them about the benefits of the micro-enterprise program.

4) Strengthening rural communities and households' capacity to create and engage in social and economic development opportunities. This component would establish a "local development window" (LDW) through a network of strategic partnerships with civil society, government and donor organizations in order to: (i) to strengthen the rural population’s relationships with dynamic networks of markets and institutions (e.g., industrialists, traders, organizers of production networks) that can mediate their access to productive resources and to wider, higher-value markets and chains of production; (ii) to assist community organizations and individuals in identifying, structuring and financing

local initiatives and productive undertakings that are better linked to market demands through demand-driven technical assistance and partnerships between technical assistance providers, regional business operators, financial intermediaries, investors and donors; (iii) to empower community grassroots institutions and individuals by building up the basic human and social capabilities (i.e., skills, social capital) needed to take a proactive role in initiating or expanding development activity and become agents of change in their communities; and (iv) to establish a private sector-led vehicle for coordinating, and channeling specialized assistance, and monitoring its results, without overwhelming *Provias* with activities that demand expertise in diverse fields and time consuming contacts with actors and grassroots groups at the local level, which are far beyond the reach of *Provias*. The LDW would mobilize demand-driven technical assistance for identification of opportunities and design of micro-businesses and productive projects.

To facilitate interactions between rural communities, grassroots groups and key external actors, it was agreed that the LDW would be coordinated by an NGO with an established reputation in working with communities and micro-enterprises in rural areas, and capable of operating in a highly decentralized manner. In this context, CARITAS-Peru was selected based on its ability to perform the role of coordinator with its 48 diocesan organizations spread over the country, and for its experience in participatory social and needs assessments and the structuring of local development initiatives.

1.6 Other significant changes:

None

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design, and Quality at Entry:

The project was built on the successful experience and as a continuation of the first rural roads project, taking into consideration the experience developed by the Bank to improve rural road access while strengthening the framework for decentralization and for rural road maintenance in particular.

Lessons from Bank experience on rural roads. Review of past Bank experience on rural roads projects demonstrated that the principal problems in achieving sustainable results had been: institutional weaknesses and inadequate coordination, leading to delays in implementation and incomplete execution of the works; inadequate monitoring of results; weak sustainability, as the necessary institutional and financial frameworks were rarely addressed. Bank-wide experience resulted in the following advice for the design of the rural roads program: (i) a strong government commitment and beneficiary participation in defining priorities and funding for maintenance to ensure the sustainability of services and infrastructure; (ii) a central focal point should be established for formulating and reviewing rural roads policy, for project planning and execution, and for coordination between the Ministries of Agriculture, Interior and Transport; (iii) a strong and dedicated

project management team should be created to assure timely implementation and adequate monitoring of the project; (iv) the capacity for labor-based methods and intermediate means of transport should be developed; (v) the methodology to screen road subprojects should be agreed with the Borrower and based on sound economic analysis (including social benefits estimation and cost-effectiveness approach for basic access); and (vi) a system to monitor the benefits of road subprojects during and after implementation of the project should be established early in the implementation period. Linking poverty with transport operations also became a strong underlying objective of the road program, following the realization that transport operations can contribute to poverty reduction both through direct or indirect approaches.

Lessons from the first phase of the road program. The overall success of the first phase of the road program, combined with strong support from the various levels of government, facilitated the preparation and design of the second phase of the program and was also critical in confirming the validity and strategies underlying its design. The first phase surpassed the investment targets agreed upon appraisal and fulfilled critical institutional strengthening factors such as micro-enterprise development. *Provias Rural – now Provias Descentralizado*, the specialized unit in charge of implementing the project, played a positive role in achieving success by continuously seeking a more comprehensive response to rural poverty and community development issues. Labor-intensive methods in road work, where relatively low wages make them cost-effective, provided a sustainable source of supplementary employment for the poor, especially in rural communities. Also critical for success throughout the implementation of the project was the participatory approach in subproject generation as well as the extensive involvement of NGOs, the use of micro-enterprises for maintenance and the inclusion of a pilot for non-motorized transport. In particular, the following lessons were relevant for the design and implementation of the second phase: (i) despite its potential risk, beneficiary participation invigorates project sustainability without compromising the quality and standards of interventions; (ii) the fragile dynamics of local development calls for close monitoring of the distribution effects of the benefits; (iii) side social benefits, such as the ones derived from the continuity of the micro-enterprise program, when clearly demonstrated and appreciated by the parties become powerful engines in the drive for sustainability; (iv) the improvement of non-motorized transport tracks and trails are one of the most strategic interventions of the project to alleviate rural poverty, as it enables the project to reach the most vulnerable.

Risk identification and mitigation measures. Sustainability issues and risks identified during project preparation were largely counterbalanced by the successful implementation as well as the sensible financial and institutional aspects developed during the first phase of the road program. Key elements to ensuring the sustainability of project activities include in particular the micro-enterprises (MEMV) -based road maintenance mechanism.

Participatory processes: A key lesson from the first project was the relevance and importance of beneficiaries in the various phases of the project (including subproject generation, design, implementation and maintenance) in order to achieve the intended

objectives of alleviating poverty and building up local institutional capacity for sustainable maintenance. Various participatory mechanisms designed for the poor to voice their transport needs were carried out during the implementation of the first project, and included surveying existing problems and needs, establishing explicit participation in collaboration or partnership with NGOs, and enabling expression through open markets. The participatory approaches were continued under the second phase of the project and further strengthened with the introduction of various measures identified in the context of the social assessment completed in 2000. The participatory approach envisaged would aim to: (i) improve the identification of key stakeholders based on beneficiary profiles and outlining an outreach strategy when relevant; (ii) retool the participatory mechanisms as necessary to ensure active involvement of the most vulnerable groups; (iii) address possible issues that may arise from a planned expansion to poor areas in the *Selva* region; and (iv) refine the project impact monitoring system to ensure that stakeholders participate in a systematic and organized manner in ascertaining the project outcomes through household surveys, focus groups, etc.

2.2 Implementation:

Project implementation has been consistently satisfactory or highly satisfactory at both central (*Provias Descentralizado*) and local (regional offices and municipalities) levels. Neither significant project change nor restructuring of initial project design was performed. However, fiscal constraints slowed down implementation and required two extensions of the closing date (for a total of seventeen months) to be processed. Two amendments to the loan agreement were also needed to accelerate disbursements and address minor operational issues (see also 2.4).

In 2005, *Provias* received an award for "best government practice" in the category "promotion of economic growth". This award was granted by members of the Peruvian civil society[1] who organized a competition aiming at rewarding good performing governmental initiatives (*Buenas Prácticas gubernamentales*). Outcomes that were particularly highlighted in the case of *Provias* included: (i) sustainability; (ii) employment generation; (iii) community participation; (iv) complementarity with other rural development initiatives; and (v) linkage with decentralization. The project also received an IDB excellence award in 2002. The first Road Rehabilitation and Maintenance Project had received the World Bank President's Award for Excellence in 2001.

Key factors positively affecting project implementation included:

(a) *Consistency and continuity of Peruvian rural roads policies:* Project design built on the lessons and achievements of the Peru - Road Rehabilitation of Maintenance Project. The Second Rural Roads Project furthered or scaled up many of the

[1] The competition is organized every year by a Peruvian NGO (*Asociación Ciudadanos al Día*). In 2005, 350 initiatives applied, 77 were short-listed and 20 were finally rewarded. Awards were granted in 7 categories: (i) services to citizens; (ii) promotion of economic growth; (iii) simplification of procedures; (iv) transparency; (v) citizens' participation; (vi) rule of law; and (vii) organization and processes.

reforms of the previous operation (e.g. NMT, routine maintenance) and introduced new concepts or mechanisms (*Plan Piloto Selva*, provincial road institutes, local development window, gender action plan). The first project had created a favorable environment from which the second project could benefit. In particular, the first project had provided strong evidence that (i) the combination of low-cost rehabilitation standards with sustained and efficient routine maintenance was a cost-effective solution; (ii) force account activities were not needed; and (iii) local governments were able to play an active role in rural roads management. With the third operation scheduled to be implemented during the period 2007-2012, [2] the Peru Rural Roads Program has demonstrated during more than a decade a remarkable capacity to constantly innovate and streamline efficient rural roads policies, building on thorough evaluation of past achievements.

(b) *Decentralization reforms:* Implementation benefited from the momentum created in Peru after 2002 by the decentralization reforms. For the preparation of the Annual Transfer Plans (*Planes Anuales de Transferencia*), the GoP was looking for initiatives that were concretizing a process of transfer of responsibilities with corresponding budget resources to municipalities. Initiatives aiming at strengthening the institutional capacity of sub-national governments were also welcomed in order to facilitate the accreditation process that had been put by MEF to condition the transfer of new responsibilities to sufficient capacity at the municipal level. The Second Rural Roads Project fulfilled these two requirements and has been regularly mentioned by the GoP as one of the most successful examples of effective and efficient decentralization in Peru. In return, this momentum has helped *Provias* to advance and scale up the "Provincial Road Institute" model and to negotiate with MEF the permanent transfer to municipalities of specific budget resources to finance routine road maintenance.[3]

(c) *Learning process and diversity of staff:* Openness to innovation has been an important factor to successful implementation. Project objectives went well beyond the technical aspects of rural roads' management and implementation has been characterized by an active involvement of *Provias Rural* (*now Provias Descentralizado*) in areas as diverse as: institutional reforms linked to the decentralization process, municipal finances, rural development, rural institutions, community participation, and even gender. In all these areas, implementation became a learning process that allowed deepening and furthering the initially-envisaged reforms. Thorough monitoring of results and evaluation of outcomes was (see also 2.3) retrofitted into implementation and in strategies and contributed to the greatest extent to this learning process. Unlike other road agencies, *Provias* could also count on a diverse staff constituted, from not only engineers but also economists and social scientists. Such diversity contributed to the strengthening of an institutional culture and vision that goes well beyond roads and facilitated the establishment of cooperation with other strategic partners.

[2] Decentralized Rural Transport Project approved by the World Bank Board on December 19, 2006
[3] Decreto Supremo No. 017-2006-MTC.

Table 1: Composition of *Provias*' staff

Description	Classification		Total
	Professionals	*Assistants and technical staff*	
Executive Direction	14	14	28
Institutional Control	7	3	10
Administration Department	28	10	38
Planning and Budget Department	12	4	16
Legal Department	7	3	10
Planning Department	45	1	46
Department of Promotion and Decentralization	15	5	20
Maintenance Department	13	6	19
Unidades Zonales	70	21	91
Total	**211**	**67**	**278**

Source: Provias Descentralizado.

(d) *Strategic alliances:* Implementation has been facilitated by the capacity of *Provias Descentralizado* to establish alliances with strategic partners. A very important partner has been MEF through which the streamlining of economic evaluation procedures for individual road investments[4] and the permanent transfer to municipalities of specific resources for routine road maintenance was particularly achieved. Other key strategic partners include municipalities. Unlike other central agencies which have reluctantly supported the transfer of responsibilities to decentralized entities because it was perceived as a loss of power from the central level, *Provias* has refocused its strategic role as a facilitator of the decentralization process, formalized through specific agreements (*convenios*) signed with municipalities. *Provias* also partnered with knowledge institutions (engineering schools and universities, think tanks like *Grade* and *Cuanto*) with the objective of improving processes (technical standards), monitoring (program of *monitores viales*) and impact evaluation. Another strategic partner has been *Caritas Peru* which successfully handled the implementation of the Local development Window. More recently, *Provias* has signed a Memorandum of Understanding with other institutions involved in rural infrastructure, with the objective of promoting complementarities across the various sectors and enhancing effectiveness through concerted or combined interventions. This partnership will be furthered by the follow-on project which includes a "rural infrastructure pilot".

Key factors negatively affecting project implementation included:

Fiscal constraints: Fiscal impact constraints have delayed implementation, requiring two extensions of the closing date to be processed. These constraints

[4] Given the cost-effective technical solutions (gravel roads) and the sustainability arrangements (routine maintenance) promoted by the project, MEF agreed that the entire project would qualify globally under the national public investment system (SNIP) and that individual assessment would not be necessary.

related to the management within the Ministry of Transport and Communications (MTC) of either the indebtedness ceiling (as in 2003 and 2004) or the counterpart funds (in 2005) granted by MEF. As a consequence, a disbursement gap appeared at the end of 2003 and widened in 2004 and 2005. During the same period, *Provias* had a pipeline of investment and sufficient processing capacity to absorb much higher levels of resources. Disbursement finally caught up in 2006 as a result of a number of corrective actions agreed between *Provias*, MEF, the IDB and the Bank. These include: (i) the preparation by MEF of a multi-annual disbursement schedule for 2005-2009 (including the 2nd Rural Roads Project as well as the follow-on operation); (2) the processing of an amendment to the Loan Agreement increasing the Bank disbursement ratio for works from 50 to 70 percent; [5] (3) the release by MEF of additional counterpart funds in the last year of implementation; and (4) intensified activities by *Provias* in 2006 order to absorb the additional resources.

Key factors having a mixed effect on project implementation included:

Political transition: The project was prepared during the transition between the Fujimori, Paniagua and Toledo administrations. Activities were mostly implemented under the Toledo administration, with the exception of the last 6 months under the Garcia administration. The project strongly benefited from the priority given to decentralization under the Toledo administration. Perspectives under the Garcia administration remain positive, given the focus on infrastructure, regional development, decentralization and rural growth (as illustrated for example by the *Sierra Exportadora* program). However, the austerity measures imposed by the new administration caused the cancellation of an international seminar on rural transport that was scheduled to be held in Lima in October 2006. This cancellation was an unfortunate loss of opportunities to disseminate results and share experiences with other countries from LAC and other regions. [6] In August 2006, five months before completion, the new Peruvian Minister of Transport decided to merge *Provias Rural* and *Provias Departamental* into *Provias Descentralizado*. The transition is still in process and is made complicated by the necessary restructuring and contraction of staff (phasing out of *Provias Departamental*'s force account activities in particular). However, the merging is expected to bring significant benefits in the medium term, with in particular greater synergies between the decentralization processes at regional and local levels.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization:

The PDO and the three specific project objectives have been monitored through a framework of indicators specifically designed for that purpose. All key performance

[5] The IaDB agreed to reduce their disbursement ratio from 50 to 30 percent, provided they would finance 100 percent of expenditures (without taxes) during the period between the Bank's closing date and their own closing date scheduled 6 months later.

[6] Representatives from China and Georgia had expressed strong interest in attending the seminar.

indicators are comprehensive and closely linked to these four main project objectives. The impact evaluation study which had been conducted at the end of the first phase of the project helped the team to: (a) design realistic project objectives by estimating the main expected effects of this type of project; (b) set realistic target values for the indicators by assessing the impacts of phase I. The PAD also includes a number of comprehensive output indicators linked to each component of the project. The design of these indicators and their respective target values has also been facilitated by the impact evaluation study of phase I.

Data collection has been conducted as initially forecasted in the PAD. A mix of monitoring instruments has been used in parallel with regular impact evaluation studies to assess the effects of the project and the values of the different key performance indicators and output and impact/outcome indicators at every stage of the project. For outputs, the following tools have been used: *Provias*' project information system and *Provias*' monitoring database; MTC's road inventory; annual, biannual and quarterly progress reports; registry of micro-enterprises, contractors and consultants; activity reports issued by coordinator of LDW. Data collection has also been facilitated by the implementation of the Integrated System for Technical and Administrative Management (SIGAT in Spanish), which has been co-financed by the project and which was not initially forecast in the PAD. This system integrates all the various computerized information systems used by *Provias Descentralizado* to manage logistics, staffing, accounting, finances, disbursement, budget, assets management control and contracts. The SIGAT is connected to the information systems used by other Peruvian institutions such as MEF (SIAF) or SUNAT (PDT and COA). Information is sorted by financing institution and is now accessible to *Provias'* regional offices (*unidades zonales*). This system will be improved during phase III.

In addition to these monitoring instruments, impacts have been assessed by three impact evaluation studies: one conducted at mid-term, one at the end of the project and one first study conducted ex-post at the end of phase I in 2001. The main results of this last study were that the project had a noticeable impact on transport conditions and access to social services, but a limited one on unemployment and poverty alleviation. This study also served as a baseline for the mid-term study of phase II (2004). For this second impact evaluation, a more elaborate and accurate methodology had been used: the double difference technique. This second study also served as a baseline for the end-of-the-project impact evaluation (which has the same methodology), whose results are detailed in Annex 5. Two impact evaluation studies will be conducted during the follow-on project (phase III), one at mid-term and one at the end of the project, using a priori the same methodology and ensuring the sustainability of M&E arrangements.

This M&E framework not only permitted the Bank to regularly track the project implementation progress, but also provided the GoP with an instrument to assess the implementing agency's performance and gave *Provias Rural* a tool that helped for planning and programming activities. In addition, the various monitoring instruments, as well as the results of the first two impact evaluation studies, facilitated the design of the project (in particular the assessment of indicators and their target values) and illustrated

the good performance of the project. It also demonstrated that rural transport projects have an impact on poverty that differs between rural roads and NMT tracks, while their effects on transport conditions and access to markets and social services is more direct. Finally, the M&E framework constituted an active learning process for Provias, given that the implementing agency collected a lot of information on the project and its effects from the various monitoring tools and impact evaluation studies.

2.4 Safeguard and Fiduciary Compliance:

Procurement. The management of procurement processes by *Provias Descentralizado* has been satisfactory overall. Three ex-post procurement reviews were performed in September 2003, March 2005 and May 2006. Reviews formulated recommendations that helped improve the management of procurement processes, including: (i) archiving of procurement documents; (ii) information included in the procurement plan; (iii) training of procurement staff; (iv) reception of bids; (v) consultancies to be performed by individual consultants or firms; and (vi) harmonization of procurement methods described in the Operational Manual and in the Legal Agreement. In response to the conclusions from the ex-post reviews, a number of corrective actions were taken, including: (i) the contracting in 2005 of a consultant specialized in archives; [7] (ii) the organization of a training of *Provias*' staff in Bank procurement guidelines; (iii) the revision of bidding documents with a view to increase competition by limiting the number of firms disqualified at the time of bid opening; and (iv) the processing of an amendment to the Legal Agreement (with retroactive application) so as to harmonize methods described in the Operational Manual and the Loan Agreement. Finally, it is worth mentioning that specific harmonized procurement documents had been agreed with the World Bank and the IaDB for the purpose of the Second Rural Roads Project at a time when the two banks had different procurement policies.[8]

Financial Management and Disbursement. The management of financial management and disbursement processes has been satisfactory. External auditors (*Rodolfo Retamozo y Asociados*) were designated in November 2001 by the *Contraloría General de la Republica*. They were renewed for the following years except in 2003 when the firm *Iwashita Nue y Asociados* was selected. Audited financial statements were sent to the Bank and filed for each year of implementation. Audit reports were generally sent to the Bank on time (except for year 2003 when a 6 month delay was observed). Audit reports were reviewed by the Bank's FM team who concluded that: (i) reports had been prepared in accordance with Bank guidelines; (ii) auditors issued unqualified opinions on the Statement of Sources and Uses of Funds, on the Statement of Cumulative Investments, on the Statement of Expenditures, and on Special Account Statement; (iii) in general, the auditors found that the Second Rural Roads Project complied with the terms of the agreement and the applicable laws and regulations; and (iv) internal controls had been evaluated as satisfactory. However, clarifications were required by the Bank FM team in 2005 with regard to the insufficient availability of counterpart funds and its impact on disbursement levels. To address this issue and accelerate disbursements, an amendment

[7] Terms of Reference approved by the Bank on September 12, 2005. Contract extended in May 2006.
[8] Since 2004, the World Bank and the IaDB have adopted harmonized procurement documents.

to the Legal Agreement was processed to increase the Bank's disbursement ratio for works from 50 to 70 percent (see also 2.2).

Environmental Assessment. Compliance with Bank environmental safeguards has been satisfactory. The project had been rated as "Category B", since no major environmental issue had been anticipated from project works. Environmental procedures followed those agreed during project preparation, as specified in the Operational Manual. Specific procedures were applied in the case of the *Plan Piloto Selva*, since these activities were performed in a very sensitive area from both a social (indigenous peoples) and environmental perspective (see Annex 2).

Indigenous Peoples. Compliance with Bank social safeguards has been satisfactory. OD 4.20 Indigenous Peoples Policy was triggered and Indigenous Peoples Plans were prepared in consultation with the native communities of the Amazon basin for the preparation and the implementation of the *Plan Piloto Selva* (PPS). For the *Sierra* region, the project implemented a strong participatory approach, including the creation of road maintenance micro enterprises that included and benefited Indigenous and non Indigenous farmers. In both areas an extensive consultation process was carried out to ensure feedback from communities. The preparation of the safeguard aspects for the PPS can be considered as best practice. The process included the preparation of a Socio-Environmental Study (ESS) and Action Plans by a consortia compounded by an environmental and a social firm. The ESS included a socio-economic assessment as well as a physical and biological evaluation, while the Action Plans included Indigenous Peoples Plans, an environmental protection plan and a monitoring and evaluation plan. The studies included an intense participatory approach with the local communities, Indigenous and settlers, as well as the involved municipalities and the regional and local authorities.

Cultural Property. Although Cultural Property Bank safeguards had not been activated at the time of appraisal, three cases of works with potential impact on sites of archaeological significance were reported during implementation by *Provias Descentralizado*. The Bank provided *Provias* with applicable safeguards' policies. These cases were dealt with, according to the Peruvian national legislation on cultural property which is consistent with the Bank safeguards' policy on Physical Cultural Property. The cases were as follows:

(a) In Amazonas, *Tingo - Kuelap and Leymebamba - Laguna los Cóndores*: the first one is under implementation and the second one awaits bidding. Both include studies regarding archaeological monitoring, and the first one has obtained the CIRA (Certificate of Inexistence of Archaeological Remains) provided by the Peruvian Cultural Authority (INC). The CIRA for the *Leymebamba* segment is pending.

(b) In Ancash, *Acovichay - Paria - Yanacancha - Llupa - Nueva Florida*: this track already includes the archaeological monitoring study while its implementation is pending.

(c) In Cusco, the rural road to *Choquequirao*, includes the archaeological monitoring study and has obtained the CIRA from INC, the work has been completed.

2.5 Post-completion Operation/Next Phase:

A key objective of the arrangements envisaged in the post-completion phase of the project was to strengthen the institutional and financial sustainability of rural road maintenance and to ultimately enable a gradual transfer of responsibilities to the local environment. This objective was achieved with specific measures being taken by the GoP in the broader context of the decentralization agenda, and in the context of the following specific reforms: (i) the Supreme Decree No. 017-2006-MTC making permanent the transfer of specific resources to municipalities to finance routine road maintenance; and (ii) the creation of specific decentralized institutions (Provincial Road Institutes) in charge of managing the rural roads network.

Transition arrangements during post-completion phase. Due to the special nature of the statutes of the rural road program, its duration was in principle limited to the execution of the proposed project. The Government, jointly with IDB and the Bank, reviewed the need to continue with the road program after completion of the project, taking account of the progress made in the decentralization agenda. MEF and MTC agreed that the role of the program would in the long run shift from execution to monitoring and provision of technical, institutional and financial assistance for programs carried out by a diverse number of executing agencies, including regional entities and municipalities.

In addition, in order to scale up in a timely manner the positive results of Second Rural Roads project, the decentralized rural transport project was prepared in 2005-2006 and is scheduled to become effective in the first semester of 2007.

Sustaining reforms and institutional capacity. On the institutional side, the project exposed local governments to organizational shortcuts based on contracting out most of the works and services to local consultants, small contractors and community-based organizations using work methods tailored to their capacity. Early involvement of beneficiaries and the reliance on solutions well-adapted to the working environment of municipalities increased capacity and built pressure on local governments for continuous road maintenance. Sustainability of the project was also ensured through continuous dialogue with the Government of Peru regarding the mobilization of local resources and revenue-sharing mechanisms for road maintenance, thereby reinforcing the Government's decentralization agenda. On the financial side, long-term project sustainability was linked to the establishment of a financial mechanism for the municipalities to undertake road maintenance activities. In order to increase and sustain road maintenance resources, the following actions were taken: (i) investment resources were shifted to current expenditures like maintenance; (ii) revenue generation was improved; and (iii) intergovernmental transfers aimed to increase road maintenance resources were increased to ensure a sustainable source of funds for road maintenance and management. In 2006, the intergovernmental transfer was made permanent through the publication of the Supreme Decree No. 017-2006-MTC.

Follow-up operation: The decentralized rural transport project will constitute a follow-up to the second phase of the rural road program by scaling up to the entire country the

decentralized rural roads policies that have been successfully developed during the first two rural road projects. The project will also provide a comprehensive institutional strengthening package at the local and central levels, in the broader context of decentralization reforms. It is expected to coordinate closely with the Bank-funded Peru Rural Electrification project and the National Rural Water Supply and Sanitation project, particularly regarding the design and implementation of the rural infrastructure pilot and to coordinate with the other Bank-funding projects and initiatives in the area of decentralization (particularly the Institutional Capacity for Sustainable Fiscal Decentralization Technical Assistance Loan). Finally, coordination would also be ensured with the Sierra Rural Development Project (under preparation).

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation:

The Second Rural Roads project was well-aligned with the priorities of the GoP and with the Bank's Country Assistance Strategy (CAS). Both development agendas stressed the importance of promoting a more inclusive growth, through greater infrastructure investments in rural Peru (particularly in the *Sierra*) and through decentralization as a means to empower local stakeholders and improve the management of public expenditures.

The project addressed these issues through an ambitious program focused in the rural areas of the poorest departments, combining a set of transport-related policies with a social development agenda that became particularly relevant in the context of the decentralization reforms initiated by the GoP after 2002. In particular, the participatory planning instruments, but also the institutional model of the Provincial Road Institute and the cooperation arrangements it implied between provincial and district municipalities, made a significant contribution to the Peruvian decentralization process.

The original design of the Second Rural Roads project could also build on the achievements of the former Rural Roads Rehabilitation and Maintenance project and on the results of the 2000 impact evaluation. This evaluation led in particular to the concept of the "Local Development Window" to enhance complementarities between transport and entrepreneurial initiatives and accelerate the effect on reducing rural poverty.

Finally, quality at entry was enhanced by the multiple consultations and participatory processes involving local stakeholders and vulnerable rural populations (e.g. women). These consultations illustrated the relevance of Non-Motorized Transport (NMT) infrastructure to target the poorest and most vulnerable segments of the rural population. The gender action plan was also prepared in this context to enhance benefits for poor rural women, through greater empowerment and direct participation in some project components (Local Development Window, micro-enterprises for road maintenance).

3.2 *Achievement of Project Development Objectives:*

The project aimed at improving the access of the rural poor to basic services, market integrating infrastructure and income-generating activities with gender equity, to help alleviate rural poverty and raise the living standards of rural communities.

The three impact evaluations that were performed illustrated the effects that improved rural roads help rural population access basic services, particularly education: according to the 2006 evaluation, school enrollment for boys aged 12-18 increased between 2004 and 2006 from 84 to 94 percent (7 percentage points, accounting for the counterfactual), while primary school enrollment for girls increased from 93 to 99 percent (5 percentage points, accounting for the counterfactual). However, no impact on access to education services was observed in the case of NMT tracks. The evaluation also showed several positive effects on employment and income generating activities: per capita monthly income was found to increase by 25.6 percent over the period 2004-2006 in the areas benefiting from NMT tracks. This income effect is likely to be linked to the improved productivity of the agriculture sector in NMT areas, itself caused by the increased availability of informal labor force (unpaid family workers). The cultivated area was also found to have increased by 22 percent in the areas benefiting from improved rural roads, although this did not seem to translate in greater household income.

On the other hand, the ultimate effect of project interventions on poverty is mixed: Between 2004 and 2006, poverty decreased from 83.1 to 74.4 percent in areas benefiting from improved NMT tracks, most likely as a result of increased agricultural productivity and improved access to local markets. This illustrates how simple solutions to bring or improve access can help relieve bottlenecks to poverty alleviation in the most remote rural areas of Peru. However, this poverty effect is not significant in the case of rural roads rehabilitation, suggesting that improved rural transport alone is not sufficient to tackle rural poverty in these less remote places. Rural road improvements are still an important element of rural poverty alleviation strategies provided they are combined with other types of infrastructure, in order to enhance impact. This conclusion reinforces the relevance of initiatives such as the Local Development Window or the Rural Infrastructure Pilot scheduled in the follow-on operation (Decentralized Rural Transport Project).

Finally, PDO achievement is reinforced by the greater project outputs (4,039 km of roads rehabilitated and maintained, compared to an initial objective of 3,225 km), as well as by the successful results of the other project components in ensuring technical sustainability (road maintenance), institutional sustainability (provincial road institutes) and complementarities with entrepreneurial initiatives (local development window).

3.3 Efficiency:

Several economic evaluations of the project's road improvement activities were performed before and after the implementation phase. While the ex-ante economic evaluation analyzed a sample of 36 sub-projects completed under the first phase of the program using the producer's surplus approach, the ex-post economic evaluation: (i) reviewed the CBA and the Cost Effectiveness Analysis (CEA) presented on a sample of

423 feasibility studies prepared during the project implementation, and (ii) performed representative ex-post CBA and CEA evaluations considering actual road works costs and results of the latest impact evaluation study prepared during the implementation of the project.

Economic evaluation framework. An economic evaluation framework for all road investments made by the project was defined at appraisal. This framework considers the stage of development of the sub-project area of influence: (i) sub-projects in a first stage of development, in areas with a high percentage of poverty, serving a social function and typically with very low traffic (less than 15 AADT) or only non-motorized traffic (tracks), are analyzed on the basis of social considerations (cost effectiveness approach); (ii) sub-projects in intermediate stage of development, typically with traffic between 15 and 30 AADT and serving agricultural and livestock production, are evaluated using the producer's surplus approach; and (iii) sub-projects at a more advanced stage of development, typically with high long distance traffic (higher than 30 AADT) and serving an economic function, are evaluated based on benefits to road user costs compared to the rehabilitation and maintenance costs following the application of the Roads Economic Decision Model (RED).

Ex-ante economic evaluation. The ex-ante economic evaluation of the rehabilitation of rural roads was done evaluating, with the producer's surplus approach, 36 sample sub-projects completed under the first phase of the program, totaling 1,563 km and US$ 20.34 million of investment costs (representing 20% of the investments and the number of kilometers rehabilitated of this component). The results of the ex-ante analysis yields an economic rate of return (ERR) of 25% and a net present value (NPV) of US$ 20.27 million at 10% discount rate, which is equivalent to US$ 12.75 million at 14% discount rate, which is the prevailing discount rate in Peru during the project implementation period.

Economic evaluation in feasibility reports. During project implementation, feasibility studies were performed at the sub-project level for each identified road investment in order to quantify the rehabilitation needs of the project road and evaluate its economic or social justification. Non-motorized tracks and rural roads with traffic less than 15 AADT were subject to CEA and rural roads with more than 15 AADT were subject to CBA using the producer's surplus approach. A sample of 124 rural roads feasibility studies was reviewed totaling 2,128 km (42% of the total program of 5,018 km), of which 47 feasibility studies (984 km) included CBA and 77 feasibility studies (1,144 km) included CEA.

For the 47 roads subject to a CBA, the total NPV is US$ 6.75 million, at 14% discount rate and the ERR is 23.6%. These CBA evaluations were done adopting the producer's surplus approach by comparing the project costs and economic benefits derived from increase in agricultural and livestock net production value as a result of productivity increase linked to the road improvement. A detailed review of 12 feasibility studies shows that in year 3 on average the total agricultural and livestock production benefits (profits), net of production costs, are 15% higher with the project compared with the

without project scenario, which is broadly in line with the ex-ante economic evaluation assumptions.

For the 77 rural roads subject to a CEA: (i) the average rehabilitation cost is US$ 14,439 per km; (ii) the total rehabilitation cost is US$ 17.62 million; (iii) the average cost per beneficiary indicator is US$ 46 per person; and (iv) the average total population served is 594 persons per km, of which 390 persons are direct beneficiaries. The CEA cost per beneficiary indicator was computed dividing the present value of the road agency costs over a 10 year evaluation period by the total population served (direct plus indirect beneficiaries). Moreover, a sample of 299 non-motorized tracks improvements feasibility studies were reviewed totaling 2,636 km (73% of the total program of 3,607 km), on which CEA was performed. For these tracks: (i) the average improvement costs is US$ 2,500 per km; (ii) the total improvement cost is US$ 6.6 million; (iii) the average cost per beneficiary indicator is US$ 27 per person; and (iv) the average total population served is 295 persons per km of which all are direct beneficiaries.

Ex-post economic evaluation. The ex-post economic evaluation was done considering actual road works unit costs and results of the latest impact evaluation study prepared during the implementation of the project. First, a producer's surplus model was developed to replicate the results of the ex-ante economic evaluation, and then the actual road work costs and the updated assumptions of the project benefits were entered into the model to produce the ex-post evaluation results. The producer's surplus model was developed taking into account information collected from the feasibility studies related to representative agricultural and livestock characteristics in the area of influence of the project roads.

Estimated, contract and actual costs. In order to determine the actual rehabilitation costs of rural roads unit and to compare them with the feasibility estimates and the contract costs, different samples were reviewed: (i) 35 rural roads projects subject to CBA and (ii) 58 feasibility studies subject to CEA. For the first sample, contract costs are 23% lower than estimated costs and actual costs are about the same as contract costs; while for the second one, contract costs are 36% higher than estimated costs and actual costs are about the same as contract costs. Regarding NMTs, 277 projects were reviewed, showing that contract costs are 5% higher than estimated costs and actual costs are 38% lower than contract costs. Similarly, the review of 231 periodic maintenance contracts shows that actual costs are 4% higher than contract costs. Ultimately, a review of 2,180 routine maintenance contracts demonstrates that actual costs are 29% higher than contract costs, mainly reflecting the expansion of contracts' duration.

Ex-post evaluation assumptions. The ex-post economic evaluation considered the results of the 2006 impact evaluation study that evaluated the impact on roads rehabilitated or improved between 2004 and 2006. The ex-post economic evaluation has been readjusted to take into account the positive impacts showed by this study on the network condition, the total motorized traffic on rural roads, the agricultural area and the number of livestock. Based on these figures, this evaluation was done considering the following assumptions:

- no adjustments were made in the number of livestock;
- an increase of 22% (to take place in year 2) in the overall agricultural area for key agricultural products in the area of influence of the sub-projects;
- no adjustments were made to the costs of production for either agricultural or livestock-related products;
- no adjustments were made to the agricultural yields or to farm prices;
- average rehabilitation cost of US$ 12,813 per km;
- average routine maintenance cost of US$ 647 per km per year;
- program network length of 5,018 km for a total investment of US$ 64.29 million;
- a discount rate of 14% that was the prevailing discount rate in Peru during project implementation.

A high efficiency project. The results of the ex-post analysis yield an economic rate of return (ERR) of 31% and a net present value (NPV) of US$ 64.05 million, at 14% discount rate. Two sensitivity cases were also performed. All of them lead to the same conclusions and demonstrate that the rehabilitation of rural roads component was well justified considering the actual investment costs and the updated assumptions on the producer's benefits. The ex-post net benefits are higher than the benefits evaluated at appraisal due to the lower actual road works costs and the higher than expected impact of the project on the area of agricultural production. Table 2 summarizes the economic evaluation results.

Table 2: Economic Evaluation Results

	Ex-ante	Feasibility Studies	Ex-post
Length (km)	1,563	984	5,018
Investment (M US$)	20.34	16.39	64.29
Investment / km (US$/km)	13,017	16,657	12,813
ERR (%)	25%	24%	31%
NPV at 14% Discount Rate (M US$)	12.75	6.75	64.05
NPV at 14% Discount Rate / Investment	0.63	0.41	1.00

3.4 Justification of Overall Outcome Rating:

Rating: **Highly Satisfactory**

The project was rated highly satisfactorily for the following reasons:

- Higher-than-expected project outputs (km of roads and NMT tracks rehabilitated due to excellent implementing capacity of *Provias Descentralizado* and lower rehabilitation costs. Implementation delays (17 months extension) were caused by GoP's fiscal space policies and not by project performance.
- Project's high economic efficiency (see above).
- Results from final impact evaluation surveys illustrated project benefits in terms of improved transport conditions, increased access to social services (for rural roads), and increased income for rural households (for NMT tracks). While ultimate impact on rural poverty is less measurable than initially anticipated (except for NMT tracks), important lessons were drawn in terms of how improved

rural transport modifies the living conditions of the rural poor. These conclusions (need for greater complementarities with other types of interventions like rural infrastructure) were integrated in the design of the follow-on operation (Decentralized Rural Transport project).

- Institutional arrangements to ensure project sustainability, and in particular the micro-enterprises for road maintenance (MEMV) and the Provincial Road Institutes (PRI).
- Contribution to the decentralization process through: (i) enhancing the planning capacity at the local level while empowering rural stakeholders; (ii) improving municipalities' management capacity (with the PRIs); and (iii) fostering greater municipal cooperation at the provincial level, thus overcoming the fragmentation of Peru's municipal sector.
- The Project inspired other reforms initiated in the transport sector in Peru. In particular, the MEMV road maintenance model was experimented by *Provias Rural* on 2,706 km of connecting secondary roads which were then transferred to regional governments. The model was then streamlined through another Bank-supported operation (Regional Transport Decentralization project). The micro-enterprises model is also currently being adapted to the national network within a program financed by the IaDB.
- Positive spillover effects from other project components: employment generation from MEMV, results of gender action plan, effect of LDW and MEMV on enhancing entrepreneurial capacity in rural areas, lessons drawn from *Plan Piloto Selva*.
- Learning process initiated through the Project's sound M&E framework that was retrofitted in the design of follow-on operation.

3.5 Overarching Themes, Other Outcomes and Impacts:

(a) Poverty Impacts, Gender Aspects, and Social Development

Poverty: The project had two poverty-related initial objectives: (1) Overall reduction of poverty and extreme poverty by 1.0 and 2.0 percentage points, respectively; and (2) overall reduction of the poverty gap by 1.5 and 2.2 percentage points in areas served by the rehabilitated rural roads and non-motorized tracks respectively. This was not an over-ambitious objective, considering that many poverty-focused programs in Peru display poverty reduction targets of 5 percent or more in targeted areas.

According to the final impact evaluation survey, between 2004 and 2006, poverty decreased by 8.7 percentage points in areas benefiting from NMT tracks (statistically significant at 10 percent). This decrease seemed equally distributed between non-extreme and extreme poor. However, the statistical significance of this last observation is low.

These results suggest that the actual effect of the project on rural poverty was different than initially expected: NMT tracks interventions are likely to have had a greater-than-

anticipated effect. On the other hand, rural roads' investments were not found to have a significant impact, at least over project lifetime. This does not diminish the relevance of rural roads programs as an important element of development strategies for rural areas but it suggests that they must be combined with other types of interventions (e.g. in rural infrastructure or through the local development window) in order to enhance impact.

A "threshold-based" interpretation, further discussed in Annex 5, is that simple interventions like NMT tracks can represent a major improvement for the most rural communities (by making a difference between having no access at all and having basic access) and be sufficient to help relieve key bottlenecks to some income-generating activities. On the other hand, rural roads improvement alone may generally not be sufficient to alleviate rural poverty (although they can make an important contribution to facilitate access to social services and to diversify the productive base). Finally, no conclusions could be drawn about whether the greatest project impact was on extreme or, rather, non-extreme poverty.

Gender: A detailed gender assessment is presented in Annex 6. Project objectives were in line with the current World Bank gender action plan. Achievements illustrate how intensifying gender mainstreaming in this particular rural transport operation has resulted in improving women's access to product and labor markets. The project also ascertained how the transport sector can contribute to the achievement of the MDG3[9], by developing women's empowerment and promoting gender equity. The project epitomized with successful gender-oriented actions that women are a driving force in poverty reduction (as illustrated by the key role they played in the LDW activities) and that eluding gender concerns in transport policies and projects might constitute a missed opportunity to involve women as potential contributors to economic growth.

Access- The 2005 poverty assessment for Peru argued that social mobility and opportunities depended on improved access. The project made two important contributions in improving access for rural women:

- *Providing physical access* - Small rural infrastructure interventions have impacted the multi-task burden of rural women by smoothing the opportunity cost of their time and increasing their mobility choices. Seventy-seven percent of surveyed women confirmed they traveled more and further and 67 percent felt they traveled more safely The rehabilitation of the NMT tracks, mostly used by women, specifically addressed women's transport needs in rural areas: (i) women's allocation of time is now more efficient as they are freed from wasting their daily time in long trips; (ii) the cleaner and safer tracks encourage them to travel as new opportunities of mobility arise, like selling agricultural products further as well as giving birth in health centers and hospitals and obtaining the birth certificate for further name registration[10] avoiding insalubrious conditions; (iii) women's attendance and participation in community meetings or assemblies is more

[9] Millennium Development Goal 3: Promote gender equality and empower women

[10] Undocumented people continue being a problem in Peru. About 25 % of the population is undocumented, because limited access to name registration, institutional birth delivery, among other reasons. Undocumented people are rural, indigenous, illiterate and women.

frequent, allowing women's voices to be better heard in decision-making for community development.

- *Fostering access to resources*. The Project has contributed to overcoming women's constrained access to economic resources and to income-generating activities, and has removed obstacles to wage employment opportunities. Forty-three percent of women reported the Project enabled them to obtain additional income. Part of this additional income came from road maintenance and from LDW activities. This effect was higher-than-expected and the participation of women in micro-enterprises and LDW activities exceeded initial targets (i) for MEMV, the participation of women reached 24 percent, compared to an initial target of 10 percent, (ii) for LDW projects, women's participation reached 40 percent (compared to an initial target of 30 percent).

Women empowerment: The LDW implemented a specific mechanism (Rapid Rural Poll[11]) to help ensure the inclusiveness of participatory processes, particularly with regard to the gender perspective. The LDW design also took into account women's needs, which resulted in the strong participation of women in the identification and implementation of entrepreneurial activities, as well as in rural roads committees and cooperatives. In the case of the rural roads committees, women participated actively in the identification of NMT tracks to be improved. In the case of the MEMV, many women managed payment certificates and treasury accounts.

Lifting barriers. Rural communities' idiosyncrasy**,** women's shame, modesty and lack of confidence, ignorance of women's opinions, gender unawareness, "machismo" behavior, were, among other, initial barriers to the mainstreaming of gender in this project. However, the Project has prompted a social change where local communities and husbands are pleased with their working-women, and where working-women feel proud of their job and become empowered to transmit their feelings, beliefs and ideas in public spheres. Finally, *Provias*, unlike many traditionally manly transport agencies, became a gender-sensitive institution.

Gender Champions- Gender know-how and expertise was developed by both the appointed gender focal point in the agency headquarters and the consultant hired to design and monitor the Project's gender agenda. Committed managers, staff and beneficiaries also helped mainstream the gender perspective in *Provias*' operations.

(b) Institutional Change/Strengthening:

The Project fostered institutional changes at various levels:

<u>At the national level</u>: through the progressive evolution of *Provias Descentralizado* from an executing agency to a regulating agency in charge of promoting sound rural roads policies, helping local governments implement these policies and monitoring outcomes and impacts.

---

11 Rapid Rural Poll specifically defines the population sample as representative of the community as possible. Therefore, women are an ineludible part of the consulted sample.

At the municipal level: through introducing innovative institutional and planning arrangements (Provincial Road Boards, Provincial Roads Institutes, Participatory Provincial Road Plans), capable of promoting greater cooperation among municipalities around common rural transport policies and of building sufficient institutional capacity in order to ensure the implementation of sound and sustainable decentralized rural transport policies, in the broader context of Peru's decentralization reforms.

At the community level: through the design and implementation of inclusive participatory mechanisms (*talleres de priorización*, local development window) and institutions (rural roads committees, MEMV), that empowered rural stakeholders and better aligned rural transport interventions to their actual needs.

Regarding participatory processes, a shift was observed during project implementation. During the first phase, the emphasis was on a more direct participation, with the involvement of the possible beneficiaries (population) themselves. As the project progressed, along with the deepening of the decentralization agenda in Peru, and the creation of decentralized units (PRIs) and responsibilities, the participation shifted upwards to the legitimate representative bodies, which started to take over the participatory processes (in brief, an increase in the institutionalization of the rural roads sector led to a decrease in the formal participatory processes). At particular junctures, the "older" participatory approaches were used again (perhaps as a way to validate the "legitimate" decisions done by the relevant governmental entities) in the form of "*mesas*" and other initiatives (e.g., workshops undertaken by Provias in the visits to communities). There were also other indirect mechanisms, chiefly through the groups of young engineers ("road monitors") in charge of the supervision of the micro-enterprises. These groups constituted an informal channel for transmitting communities' opinions on the program.

(c) Other Unintended Outcomes and Impacts (positive and negative):

At completion, a study was launched to evaluate in more detail the impact of the Project on rural institutions, participatory processes and democracy. A summary of this study is presented in Annex 6.

Key results include:

- Greater participation in elections: provinces where the project has been active experienced an increase in voter participation, particularly for women.
- Greater accountability of public officials: the proportion of public officials revoked ("*revocatoria*") was greater in the project areas. *Revocatorias* should not be interpreted as an indication that the project promoted local conflicts but, rather, as a sign of greater participation through which local stakeholders could voice their concerns and as an additional incentive for greater accountability.
- Emergence of new leaders: In the 6 departments surveyed in the study, 82 cases of micro-entrepreneurs becoming local leaders were reported. In one case, the

manager of a PRI became president of a regional government. This illustrates how the project contributed to the emergence of new leaders and how management experience gained through the implementation of some project components, was transferred to other areas of public management.

- Recognition of micro-entrepreneurs: Despite some envy because of their salaried work position, micro-entrepreneurs are valued by rural communities for their organization model and their entrepreneurial spirit. MEMVs were found to play an important role for the communities, in particular in cases of emergencies or to perform some voluntary civil works. Some MEMVs implemented a rotation system to give employment opportunities to abandoned women or poor families, thus acting as a safety net without compromising the efficiency of the road works.

3.6 Summary of Findings of Beneficiary Survey and Stakeholder Workshops:

Three impact evaluations were performed in 2000, 2004 and 2006. These evaluations were performed by two experienced Peruvian think tanks (*Instituto Cuanto* and Grade), using household surveys and a "double-difference" comparison between rural populations living nearby rehabilitated roads and non-rehabilitated roads (control group). Key finding are summarized in table 3. A more detailed description is presented in Annex 5.

Results confirmed the significant benefits in terms of transport conditions (reduced travel times, reliability of transport services) and use of transport services (increased traffic). Impact on transport fares varies between light vehicles (cars) for which a sharp decrease was observed and heavier vehicles (e.g. trucks) for which possible oligopolistic behaviors impeded a reduction. However, impact on cost is only significant for the 2000 generation of roads, suggesting this is a longer-term effect.

Better transport helped improved access to social services. For rural roads, school enrollment was found to have increased significantly. This effect is greater for girls accessing primary education (possibly because of the more secure transport conditions) while, for boys, the highest effect is found for secondary education (possibly further away and therefore linked to the reliability of motorized transport). For NMT tracks, a significant effect was on the health conditions of young children (age 0-5), most likely because of the facilitated access for mothers to health centers.

Improved transport also impacted the pattern of productive activities and employment in the rural economy. Better rural roads led to an increase in farmed land area and in irrigated land value. However, the income produced per farmed area decreased, possibly as a consequence of over-production of locally-consumed products. Rural roads also helped populations access more formal job opportunities and facilitated access to credit. On the other hand, NMT tracks had an important effect on agricultural productivity. This is principally due to the participation of unpaid family workers to income-generating opportunities, possibly as a consequence of additional time freed by eased transport. This increased productivity, possibly combined with improved access to markets led to additional income for poor rural households benefiting from improved NMT tracks.

As discussed before, the ultimate effect on poverty is mixed and is principally observed for NMT tracks. A proposed interpretation is that this type of basic infrastructure can represent a dramatic improvement for the most remote rural communities (from having almost no access at all to having basic access) while rural roads alone may not be sufficient to make a measurable difference in terms of poverty reduction, for the less remote rural communities. However, this impact might be enhanced if transport was combined with other types of interventions (e.g. rural infrastructure or rural entrepreneurship programs).

Table 3: summary of key results from the three impact evaluations

Sector	Indicator	2000 and 2004 evaluations		2006 evaluation			
				Rural Roads		NMT Tracks	
		Term *	Effect**	Effect**	Stat.Sign***	Effect**	Stat.Sign***
Transportation	Reduced Travel time	S	H	H	-	H	o
	Increased Traffic rate	S	H	H	o		
	Decreased Fare prices	S-M	M/H	H (cars)	**		
	Decreased Freight prices	S-M	H	Increased? (exc. cars)	**		
	Decreased Road closure	S	M	L	-	H	-
	Increased Reliability transport	S-M	M/H	H (micro)	*		
Access to public services	Increased School Registration	M-L	L	H (boys secondary)	***	H (girls primary)	***
	Increased Health consultations	S-M	M	M	-	H	*
	Increased Judicial causes	S-M	N				
	Increased police interventions	S-M	H (2004)				
Productive activities	Increased Farmed land area	M	L	H	*	Reduced ?	o
	Increased Land value	M	N	H (irrigate.)	o	Reduced ?	-
	Increased Productivity	M	N	Reduced?	o	H	-
	Increased Livestock ownership	M	M	Reduced (horses)	**	Reduced	-
	Increased Farm prices	S-M	H				
	Diverse Crop allocation	M-L	N				
	Increased Market-oriented produce	M	N				
	Increased Access to marketplace	S-M	M				
	Increased Access to credit	M-L	L	H (request only)	**	N	-
	Increased No & income com. ets...	M	L				
	Diverse Income structure	M-L	L	L	-	M (trade & services)	o
Employment	Change Type of occupation	M-L	L	L	-	H (less non-active)	**
	Change Occupation category	M-L	N	L (more formal)		H (unpaid family	*

						workers)	
	Change Productive activity	M-L	N	L	-	H (more agric.; less cattle)	* / o
	Increase Agricultural day's wage	M	M				
	Change Labor force structure	M-L	L				
Migration	Decreased No. of migrants	M-L	N				
	Increased No. returning migrants	M-L	L				
Poverty	Decreased Poverty levels	L	N (2000) L (2004)	L (less extreme)	-	M/H (more non poor)	*
Institutions	Increased No. of new institutions	S-M	M	L	-	L	-
Road safety	Increased No. of traffic accidents	S	L	M	-		
Environment	Increased Use of land	M	N	H	*	Reduced ?	o
	Increased Use of chemicals	M	N	N	-	N	-
	Increased Deforestation	S-M	L	L	-	M	-

*: S: short; M: medium; L: long
**: N: null; L: low; M: moderate; H: high
***: -: significance < 20%; o: significance 20%; *: significance 10%; **: significance 5%; ***: significance 1%

A stakeholder workshop was also organized on March 13, 2007 allowing to receiving feedback from practitioners and beneficiaries. Key conclusions are presented in Annex 6.

4. Assessment of Risk to Development Outcome

Rating: **Moderate**

This part assesses the risk that development outcomes would not be maintained during the remaining useful life of the project, which will be characterized by the next rural roads project. The request by Government for the third phase to consolidate and extend the activities started under this project shows its strong commitment and provides a guarantee that the development outcomes will be maintained and strengthened.

Risk	Risk rating	Mitigation measures to take into account the risks' likelihood of occurrence and possible impacts
The model developed by the Project (gravel roads, routine maintenance by micro-enterprises, participatory planning) is rejected at the local or national level	Moderate	At the local level, information and successful results have been highly disseminated, in particular the fact that this model is the most cost-efficient, and that satisfactory feedback from rural communities is highly positive. The next project will also contribute to the model's sustainability, by including dissemination activities in one of the components. At the national level, the model had been fully adopted by Provias Rural and has inspired the design of the Regional Transport Decentralization project, co-financed by the Bank and the IDB.

NMTs are no longer considered as one of the priorities and all national and local efforts are dedicated to larger roads	Negligible to Low	Although the NMT network is little known, this risk is unlikely to occur. Under the Project, 3,465 km of NMT tracks (initial objective of 3,100km) have been rehabilitated and maintained and 247 road committees have been created and now exist. The mechanism adopted for rehabilitation had proven to have the lowest cost. Other donors and NGOs also finance some rehabilitation works, and the next project includes funds dedicated to NMTs. Moreover, as long a participatory prioritization planning process will be used, the rural poor will be empowered; and the rural poor generally give a higher priority to NMTs.
Lack of local counterpart funds dedicated to routine maintenance	Moderate	Supreme Decree No. 017-2006-MTC (adopted in 2006) made permanent the transfer of resources dedicated to routine maintenance from the national level to PRIs, so that local funds will not be lacking.
Local capacity is too low and weakens future developments	Moderate	The project included institutional strengthening at the local level, with assistance provided to Unidades Zonales, PRIs and micro-enterprises. In addition, Provias has now enough capacity to provide technical assistance at the local level; and the next project includes a local institutional strengthening component.
Lack of institutional capacity at the national level (Provias Descentralizado)	Negligible to Low	Provias has been provided institutional strengthening and has gained capacity for the last 11 years. It has been so successful that Provias Rural and Provias Departamental were merged in 2006 into one single entity (Provias Descentralizado) adopting Provias Rural's structure and processes. Some additional institutional strengthening will be provided in the next operation, including the preparation of a plan turning Provias into a regulatory entity.
With greater decentralization, local elites may capture the benefits of certain elements of the program (e.g. microenterprises, PRIs) and weaken them.	Moderate	The institutions developed under the program (microenterprises, PRIs) have existed for a long time and are subject to control mechanisms broadly involving local stakeholders that reduce the risk of elite capture. For example, microenterprises are subject to the control of the local population, the road monitors, their "*socios*" and of the local governments through their PRI. The PRI are under the authority of the provincial road board and supervised by Provias through its "*unidades zonales*".
The *plan piloto selva* is no longer considered as one of the priorities	Moderate	Successful results and lessons learned have been disseminated (in particular the efficiency of the model finally adopted and the increase of private investment in the implementation area). The plan will still be considered as a priority for the following reasons: (a) some works are still being conducted; (b) the plan has received strong local stakeholder support, with overlooking committees being created; (c) some funds are dedicated to the plan in the next operation.
The decentralization process slows down or stops after several years of road management decentralization	Moderate	A momentum to further the decentralization process was created in 2002 and has been enforced in 2006 with the Supreme Decree No. 017-2006-MTC. The bank will maintain an active dialogue with the GoP through the next operation to make sure that the process doesn't stop.
The environmental risk becomes higher after the end of the project	Negligible to Low	Environmental safeguards satisfactory to the Bank have been applied by Provias for the last 11 years so that they have become part of the rural roads Peruvian culture. Moreover, the nature of the model developed by the Project (rehabilitation of gravel roads), as long as it is used, limits the risks for the environment. The next operation will also ensure that risks for the environment remain negligible.

The institutional model of PRI, created by the Project, is dropped	Negligible to Low	Dropping the model would be a huge step backward, with 121 provinces now engaged in the process and 36 PRIs having reached full implementation capacity, and 72 basic capacity. This component has probably been the most successful of the project and the PRI's model has proved to be very efficient. The next operation will scale up the model to the whole country and turn some PRIs into PIIs (Provincial Infrastructure Institute).
Gender mainstreaming efforts might be lost after the transference to local governments	Moderate	The Decentralized Rural Transport project, will keep promoting the gender agenda under the broader concept of "Social Inclusion"
Insufficient transparency in local bidding endangers the continuity of MEMV conformed under the project	Moderate	The Decentralized Rural Transport project includes institutional strengthening activities in this specific area. Provias acquired important know-how and experience in transferring knowledge to municipalities. However, mitigating this risk will require a huge effort in order to train the new local governments entering the program.
Lack of national and local funds dedicated to road rehabilitation	Moderate	The main risk comes from a possible lack of fiscal space due to the large infrastructure projects that have recently been initiated in Peru. However, the project has beneficiated from high visibility at the national and international level and benefits from a strong commitment from the government. Other donors have dedicated funds to the rural areas affected by the project and the Bank's next operation will ensure that funds are available at the national level.
OVERALL RISK	**Moderate**	

5. Assessment of Bank and Borrower Performance

5.1 Bank

(a) Bank Performance in Ensuring Quality at Entry:

Rating: **Highly Satisfactory**

The Quality at Entry is rated as "highly satisfactory". The project preparation team was able to take stock of all the lessons of the previous operation (Rural Roads Rehabilitation and Maintenance) and include them in the design of this Project. These lessons were described in the learning ICR of the previous operation. One example of lessons that was drawn from the previous operation is the need for an instrument that could accelerate the emergence of productive activities in the areas where transport conditions have been improved, in order to increase the impact on poverty. This led to the design of the "Local Development Window".

Justifications for the rating also include:

- The introduction of a sound monitoring and evaluation system, based on the result of the 2000 impact evaluation study. This study was the first attempt to rigorously

evaluate the actual impacts of rural roads interventions, based on extensive household surveys and the use of a control group. The preparation team was able to convince *Provias* that thorough impact evaluation studies, despite their costs, could facilitate a learning process through which rural transport policies could be disseminated and improved.

- The design of decentralized implementation procedures (in particular the Provincial Road Institutes model), first on a pilot basis but with the mid/long-term objective of scaling up. These mechanisms matched the Toledo administration's strong priorities in terms of decentralization.
- The use of participatory events in order to get a better understanding of the rural transport needs of poor rural communities and vulnerable groups (e.g. women).
- Additional innovations to explore rural transport needs in other environment (e.g. *Plan Piloto Selva*) or to increase social benefits (e.g. gender action plan).
- An excellent cooperation was also established with the IaDB during this preparation process.

(b) Quality of Supervision:

Rating: **Highly Satisfactory**

The quality of supervision is rated as "highly satisfactory". The joint WB-IaDB project performed 2 or 3 supervision missions per year, most of which included field visits together with Provias as well as extensive discussions with beneficiaries and key local stakeholders to get exposure to key issues. The excellent cooperation between the two banks, despite occasional divergence on implementation policies, allowed for mixed-skill supervision teams and cost-sharing. Combination of efforts from the Bank and IaDB sides, coupled together with the specific contributions of a multidisciplinary supervision team involving environmentalists, social development specialists, consultants (gender, impact analysis) contributed to the project's success. As part of the supervision effort, the two banks actively encouraged the exchange of views with think-tanks and NGOs, beyond those directly involved in the project.

An active policy dialogue was sustained between the two banks and *Provias* (as illustrated in extensive aide-memoires), which allowed monitoring results, re-orienting policies and seeking enhanced impact through constant innovation. An example of such innovations that were introduced during implementation as a result of this policy dialogue is the design of specific road rehabilitation standards for the *Selva* (*caminos vecinales menores*) and the revision of the road planning methodology. More broadly, the banks brought new concepts and ideas (e.g. gender, M&E, rural infrastructure) during implementation, through analytical work and targeted advisory services.

The Bank has been particularly active in the analysis of complementarities between roads and other types of rural infrastructure interventions. This analysis, as well as the related recommendations, were summarized in a specific ESW (Peru Rural Infrastructure

Strategy: Effectively Underpinning Local Development and Fostering complementarities), published in 2006. Theses recommendations led to the design of the "rural infrastructure pilot" in the follow-on operation (Decentralized Rural Transport project).

Finally, the project team was proactive in dealing with the reduced disbursement levels observed in 2005, through the processing of an amendment – in coordination with the IaDB, to modify the *pari-passu* between the two banks in order to accelerate disbursements.

(c) Justification of Rating for Overall Bank Performance:

Rating: **Highly Satisfactory**

Overall Bank performance is rated "highly satisfactory", taking into consideration the quality at entry, the strong cooperation with the IDB and the sustained policy dialogue with the GoP through a series of three rural transport operations that constitute an exceptional example of how new rural transport instruments could be first tested and then progressively streamlined over a period of more than a decade.

The project is known in the LAC region and beyond as a best practice and its design influenced many other rural transport operations. Various events were organized to disseminate lessons from this successful project. For example, a short video (Connecting Development: Rural Roads in Peru) was produced in partnership with the Bank Operations Services' department. The Peruvian experience about road maintenance micro-enterprises (MEMV) was also described extensively in a micro-enterprises' toolkit, together with the experience of other Latin America countries (Colombia, Honduras).

5.2 Borrower Performance

(a) Government Performance:

Rating: **Satisfactory**

Government performance is rated "satisfactory". This is justified by the strong momentum for decentralization initiated by the Toledo administration and likely to be furthered by the Garcia administration. This momentum coincided with some key project components (Provincial Road Institutes) that were initially envisaged on a pilot basis and could subsequently be scaled up.

The project was highly regarded by other public agencies and by civil society throughout implementation. GoP-imposed fiscal constraints during the years 2004-2005 resulted in lack of counterpart funds or binding indebtedness ceiling during the last years of implementation which delayed implementation, requiring a 17 months extension of the closing date to be processed. However, it should be noted that the project was one of the

least affected by the fiscal constraint among other public programs and that it remained the best disbursement performer in the Bank investment portfolio during that period.

Despite significant fiscal revenues, the Garcia administration imposed (particularly in 2006) a number of strong austerity measures on the public sector. These measures did not affect *Provias*' investment program but led to the unfortunate cancellation of a dissemination event ("international rural transport seminar") that had been scheduled in the last trimester of 2006.

(b) Implementing Agency or Agencies Performance:

Rating: **Highly Satisfactory**

The performance of *Provias Rural*, renamed in 2006 *Provias Descentralizado*, was rated "highly satisfactory". As explained above, this rating is justified by both the robust implementation efficiency of Provias which, together with reduced costs, explain why initial physical targets were exceeded, but also by the excellent catalytic role that Provias played to provide technical assistance to municipalities, in support to the decentralization process. Diversity of staff, openness to innovation and rigor in the management of its monitoring and evaluation system, are other positive elements to be highlighted.

Provias' performance is also confirmed by the international and national recognition it received, as well as by the awards granted by the two banks (IaDB, WB President Award), as well as by Peru's civil society.

Finally, the Project has been a subset of Provias' overall rural transport program. Using the same implementation model, Provias has been seeking and obtaining other sources of funding (USAID, *Fondo Italo-Peruano*, *Fondo Peru-Francia*, but also in some cases private funds such as contributions from mining enterprises to finance specific road maintenance activities) to expand its interventions. This is another illustration of how the model proposed by the Project has been streamlined thanks to the catalytic role of *Provias Descentralizado*.

(c)Justification of Rating for Overall Borrower Performance:

Rating: **Highly Satisfactory**

The overall Borrower performance was rated as "highly satisfactory" to account for the successful results achieved by the implementing agency, and beyond, to the positive interactions between the project and the GoP's broader agenda with regard to decentralization.

Another positive element is the continuity of the rural transport policies engaged by the GoP, through *Provias*, first with the Rural Roads Rehabilitation and Maintenance project, then with the Second Rural Roads project, and now with the Decentralized Rural Transport project. Through this series of three projects, the Peru Rural Roads program

has proved both to be consistent in its strategic objectives (poverty-focus, efficiency in the use of resources with the adoption of low-cost rehabilitation techniques and sustainability with due attention paid to routine maintenance), while bringing key innovations in a timely manner (participatory planning processes, decentralized institutions, complementarity with other types of investments). In this regard, the Peru Second Rural Roads project has played a critical role to bridge key reforms engaged under the first project with a long-term vision of fully decentralized, efficient rural transport policies aligned with the territorial development strategies elaborated by rural stakeholders.

6. Lessons Learned

Continuing a learning process begun with the first phase of the rural road program, the project offers rich lessons about what can ensure the sustainability of both investments and implementation capacity. One of the most striking features of the project relies in its integrated approach through its multi-facets components and how they have been coordinated together in a systemic graduated manner. With six components, covering many aspects of rural infrastructure (rehabilitation, maintenance, institutional strengthening, participation), it could have been difficult to logically articulate and monitor/evaluate them while giving sense to the whole. In such a project starting conditions, flexibility, participation, a robust M&E framework exploited by a learning organization such as Provias were keys.

By including the various stakeholders and engendering the project activities, the project illustrates a new demand-driven paradigm for transport planning and economic development. As part of this new paradigm, the project has allowed to advance knowledge in the design of an interconnected set of elements that reinforce each other, and several of them with built-in structures that create the incentives for adequate and sustained performance. Examples of this are the micro-enterprise model and the provincial road institutes. This paradigm emphasized "gradualism" and research. The project led to the development of innovative instruments for rural road programs through the design and implementation of several pilots (such as a "*Plan Piloto Selva*" that explored ways to customize rural transport solutions, including river-based, to the context of the Peruvian *Selva;* and a "provincial road management pilot" that was successfully replicated for secondary roads). Building on the decentralization reforms, the project also helped the management of rural roads to be progressively handed over to municipalities, making rural roads one of the sectors where decentralization has been the most successful.

Improved transport conditions of rural roads can translate into better access to social services (health, education) and to income-generating opportunities. The three impact evaluations of the rural roads program illustrated the benefits of rural roads interventions on school attendance, visits to health centers but also access to markets and agricultural productivity. These results are a strong advocate for investing in rural roads as part of a poverty reduction and growth strategy for rural areas.

Participatory planning and inclusion can ensure better targeting of resources while better responding to community needs. The project aimed to empower the rural poor in the process of selecting roads that should be rehabilitated. In this context, participatory plans identifying key rural roads and NMT paths (or other rural infrastructure in the case of the Participatory Provincial Infrastructure Plans) ensured that local stakeholders' needs were fully reflected in the prioritization of investment alternatives and helped understand the poverty links as perceived by communities. Various consultations and participatory workshops during the design phase in the targeted villages ensured the engagement and inclusion of all beneficiaries and community members from the design through the implementation phase. A methodology was developed so that local stakeholders could solve key tradeoffs between investment alternatives while limiting the risks of capture of the decision-making process by individual interests. The provincial level was the appropriate compromise between working at a territorial level to create economies of scale and ensuring proper accountability to rural stakeholders.

A maintenance strategy for transport infrastructure can act as a catalyst for developing private sector and entrepreneurial attitudes. The inclusion of micro-enterprises to perform routine maintenance for the upkeep of the road network addressed the difficulties of ensuring central-government maintenance of a myriad of scattered rural roads and the failure of traditional municipal accounts to provide sufficient funds for financing. In addition to being cost-effective, the micro-enterprise program had spillover effects on local development initiatives, creating employment opportunities for the rural populations involved and becoming contact points for extension services, and even mobilizing untapped local resources for local community ventures.

Gravel roads can be a sustainable and cost-effective technical solution to improve rural transport infrastructure. Peru's experience confirmed international evidence that paving roads is not the most cost-effective solution to address transport needs on low-traffic roads (i.e. below 200 vehicles per day). Instead, for rural roads where traffic levels do typically exceed 50 vehicles per day, gravel roads constituted by far the most adequate technical solution in rural Peru. Moreover, under proper maintenance arrangements, gravel roads are both a cost-effective and sustainable option.

Municipalities that are provided with the right mix of technical expertise and financial resources can efficiently manage rural road assets. Decentralization in Peru has been most successful in the rural roads sector. Starting in 1995, Peruvian authorities have successfully designed and implemented a rural road management program through several pilots, which has led to the development of innovative instruments and new rural transport approaches.[12] The inherent institutional and financial weaknesses of municipalities made the initial efforts to decentralize rural road management and to build up local capacity in the rural road sector difficult. These weaknesses were addressed through the creation of Provincial Road Institutes (PRIs), which have proved to be an efficient decentralized model for the management of rural roads, provided they receive adequate technical and management assistance to start them up. The PRIs, established

[12] The first experimental decentralized "Provincial Road Institute" PRI was in Arequipa; there are now 108 PRIs with basic or fully-established operational capacity.

under the authority of the provincial mayors, allowed municipalities to reach sufficient institutional capacity to manage effectively their rural roads assets while being governed by empowered local authorities.

Coordination of road rehabilitation with local productive activities can stimulate development and improve the efficiency and effectiveness of the rural roads project itself. In the fight against poverty, road rehabilitation is generally not sufficient to overcome isolation while promoting local development. Past impact evaluations have shown that significant improvement of transport conditions (reduction of travel times and travel costs, greater availability and reliability of transport services) follow the rehabilitation of transport infrastructures. However, the impact on poverty reduction and local economic development takes much longer. Consequently, the project established an independent structure, the Local Development Window (LDW), to help identify synergies between areas for productive growth, create linkages between local service providers, and coordinate access to key financial services in areas where rural transport conditions were improved. The project showed that, in parallel with the improvement of transport conditions that can make access to local markets easier and more reliable, an implementing agency such as the LDW can promote opportunities for self-employment and income generation activities for both the local and regional economy (see Box 1).

Box 1: Successful activities promoted by the Local Development Window (LDW)

Since 2002, the Local Development Window (LDW) has intervened in 85 districts in the 12 poorest provinces of Peru, identifying the best productive initiatives while reducing transaction costs for potential sponsors. Selected initiatives were presented during "project fairs" (ferias). Between October 2001 and September 2006 and under the active management of CARITAS, the LDW identified 850 initiatives at pre-feasibility stage, of which 167 reached feasibility stage and 72 found a sponsor. Eight regional fairs and one national one were organized, leveraging SDR 7.2 million of financing from various sponsors.

The 'Sweet Hope for the Poor' or Yacon production project in the Junín Department

Selected as one of the activities to be promoted by the LDW, the project supported the cultivation as well as commercialization for both local and world markets of a root called Yacon. At risk of extinction, the crop had traditionally been used for its natural medical virtues since the period of the Inca civilization. The project, managed by an association of producers, benefited 40 families living in the district of Orcotuna (Junín Department).

Fish farms in Sauce, San Martín Department

The community of Sauce (San Martín Department) identified through the LDW the start-up financial resources necessary for the development of tilapia fish farms. Road access between the Lake of Sauce and the provincial market of Tarapoto prevented the community from taking advantage of the economic potential of the lake. In addition to road rehabilitation, which reduced the average time necessary to reach Tarapoto from six to two hours, approximately 61 families benefited from the project, with female participation estimated at approximately 40 percent. The project also led to the creation of a Cooperative composed by a Committee of non-industrial fishermen and a Committee of Dames, which assumes tasks related to product commercialization and coordination with the Sauce Municipality.

Decentralization can improve rural roads programs, which in turn can contribute to strengthening the decentralization agenda as well as territorial development. The national decentralization process that took place in Peru facilitated reforms in the rural roads sector. However, the development of the rural road program and the "Participatory Provincial Road Plans," which were prepared by the key rural provincial stakeholders, also had positive effects on the strengthening of decentralization reforms and resulted in better aligned rural roads investments with territorial development strategies. Likewise, by contributing to participatory planning, budget systems, and contract terms for local municipalities, the LDW helped strengthened municipal procedures and management capability, road maintenance and local development management.[13] More recently, the LDW has started to move its planning methodology at the regional level, with the preparation of the first rural infrastructure plans in the provinces of Arequipa, La Convención and Cotabambas. As the LDW proved to be a relevant instrument to promote rural growth while strengthening community participation and municipalities' institutional capacity, its scaling up has been proposed for the implementation of the follow-up project.

Women's involvement in road project design and maintenance activities can result in social outcomes commonly ignored by traditional road upgrading systems. The project paid particular attention to the role of women, requiring at least 10 percent of the micro-enterprise members and at least 20 percent of road committee members to be women. Women's participation showed that women are keen to provide feedback on how lack of transport services affects their day-to-day lifestyles. It also provided them with economic opportunities linked to road maintenance activities that would otherwise not have been available to them (24% of the micro-entrepreneurs are now women). In direct response to the transport needs expressed by women, phase 2 of the program supported improvements not only to the roads connecting to the communities but also to non-motorized tracks, which are most often used by women and are commonly ignored by road upgrading. In beneficiary communities there was greater openness to women using health centers and going to markets. Overall, the participation of women in the project facilitated the acquisition of new skills, knowledge, and confidence, with a social and personal impact for both women and their families: (i) men and women had a social a more balanced distribution of domestic work at home and in the community; (ii) women improved their self-image and increased their income; (iii) women's participation contributed to the emergence of a new image of gender relations in the social and cultural life of the communities. Women are now more active in community-decision making and accessing leadership positions in local organizations.

Strong cooperation between development organizations such as the Bank and the IaDB can be a factor of success. The experience of the Peru Rural Roads program illustrated how two multilateral entities were able to work together under a framework that emphasizes the adding up of the comparative value of the two organizations' teams

[13] The preparation of territorial development plans was a condition for municipalities to be accredited by the National Decentralization Council (CND in Spanish) and be eligible for increased intergovernmental transfers.

and an open approach to the discussion of topics and the resolution of conflicts. The added value of the project also came from the interest of all stakeholders (the two banks and Provias) in harmonization policies.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

(a) Borrower/implementing agencies:

In its comments, Provías Descentralizado underlined the very positive impacts that the project, and more broadly the three-phase program, had on the rural transport conditions, access to basic and social services, transaction costs, employment, local and regional economies, socio-economic conditions, and poverty in rural Peru. More specifically, the following positive impacts were highlighted (see Annex 7):

- The Second Rural Roads project constituted a very creative and innovative response to the challenges that rural Peru was facing and to the urgent needs of its rural population. Its design stuck to the reality and to the specificities of rural areas and made this project participative, sustainable, supportive of the decentralization process and complementary to existing initiatives.
- The project has been inclusive and has involved the most vulnerable and the poorest segments of the Peruvian rural population. In particular, it provided jobs and sustainable revenues to a substantial number of rural poor and it promoted the participation of women in entrepreneurial activities, mainly through micro-enterprises and the LDW. Women empowerment has proved to have a major impact on family life and in particular on the nutrition and education of children.
- The project, and more broadly the three-phase program, contributed to change the Peruvian old habits regarding rural roads management. The promotion of the triptych construction-rehabilitation-maintenance has helped to substitute the old vicious circle by a new virtuous rural roads management life cycle where a well integrated rural roads network can count on rehabilitation works followed by periodic and routine maintenance activities.
- The impacts of NMTs have been enormous: the project not only contributed to improve their transitability, but also contributed to include the most vulnerable and excluded parts of the rural population by directly involving them in the participatory planning processes. To this extent, the *Comités Viales Rurales* constitute a very powerful integration tool which increased the sense of ownership by local populations with regard to NMTs.
- One of the most positive impacts of the project is the improvement of the local capacity, which has been achieved through the co-financing of routine maintenance, the constitution of PRIs, the implementation of the participatory provincial road plans, the LDW and the constitution of micro-enterprises.
- One of the main lessons learned is that a rural roads program is not only a series of works, but also has to include a number of components that could bring added-value and improve the socio-economic conditions of the targeted populations. To

this extent, the participation of the local population at all stages of the project is key to increase impacts and to ensure the sustainability of the investments.

(b) Cofinanciers:

The IaDB sent comments highlighting the very positive experience of the project, particularly with regard to the following issues (see Annex 8):

- Flexible project design allowed *Provias Descentralizado* to adapt to the evolving needs of rural stakeholders (e.g. the decentralization reforms facilitated the co-financing of road maintenance activities)
- *Provias Descentralizado* proved to be an efficient institution, opened to innovation and eager to "learning by doing". This institutional leadership played an important role in project's success. Through the new operation, it should be furthered in the context of the decentralization reforms and Provias should manage its already-engaged transition from an executing agency toward a regulatory entity. This will require in particular the strengthening of technical aspects such as road rehabilitation norms and road life cycle management.
- Strong coordination between the two banks brought added-value to project design and supervision, particularly with regard to the introduction of new concepts and technical arrangements. This coordination was well-appreciated by the Peruvian counterparts. This coordination could have been furthered in the area of procurement, where the IaDB felt that more flexibility could have been granted to *Provias* in order to customize processes to the specificities of rural areas.

(c) Other partners and stakeholders (e.g. NGOs/private sector/civil society):

No comments were formally received from other partners and stakeholders.

Nevertheless, positive feedbacks were received at multiple occasions during implementation, particularly in 2005, when *Provias* received a "best government practice" award from the Peruvian civil society.

ANNEXES

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in USD Million equivalent)

Components	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
REHABILITATION OF RURAL ROADS AND CONNECTING ROADS	61.70	65.33	105.88
ROUTINE AND PERIODIC MAINTENANCE OF RURAL ROADS AND CONNECTING ROADS	51.80	38.59	74.51
IMPROVEMENT OF NON-MOTORIZED RURAL TRANSPORT	5.65	5.32	94.10
PROVINCIAL ROAD MANAGEMENT PILOT	2.95	1.95	66.00
RIVER TRANSPORT IMPROVEMENT PILOT	5.30	1.62	30.51
INSTITUTIONAL DEVELOPMENT: IMPROVEMENT OF RURAL TRANSPORT POLICY AND STRATEGIES:	1.37	1.77	129.18
* IMPROVEMENT OF RURAL ROAD PLANNING AND MANAGEMENT	3.71	2.92	78.66
* DEVELOPMENT OF COMMUNITY-BASED MICROENTERPRISES FOR ROAD MAINTENANCE	2.80	3.76	134.23
* STRENGTHENING LOCAL CAPACITY TO ENGAGE IN SOCIAL AND ECONOMIC DEVELOPMENT INITIATIVES (LOCAL DEVELOPMENT WINDOW)	0.72	0.76	106.19
* PROJECT ADMINISTRATION	14.00	14.89	106.36
Total Baseline Cost	150.00	136.43	90.95
Physical Contingencies	0.00	0.00	0.00
Price Contingencies	0.00	0.00	0.00
Total Project Costs	150.00	0.00	0.00
Project Preparation Fund	0.00	0.00	0.00
Front-end fee IBRD	1.00	1.00	100.00
Total Financing Required	151.00	137.43	91.02

(b) Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower		51.00	43.76	85.80
Inter-American Development Bank		50.00	45.48	90.96
International Bank for Reconstruction and Development		50.00	48.19	96.38

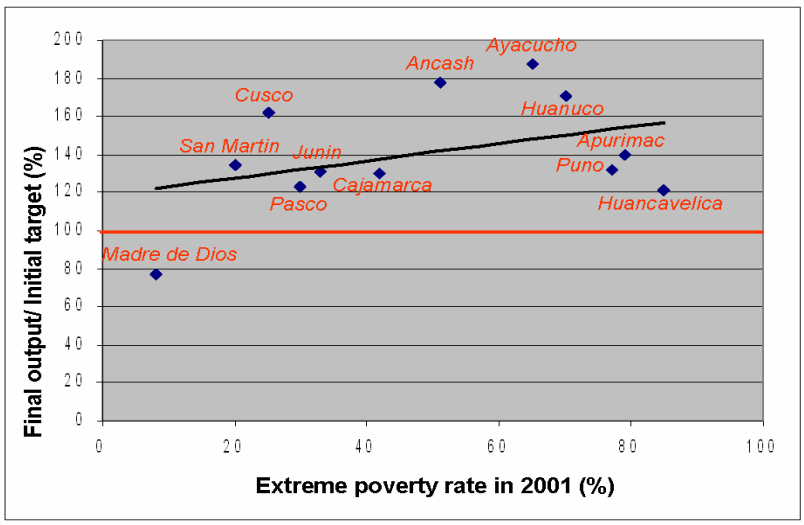
Annex 2. Outputs by Component

The project has been implemented in 121 provinces (573 districts), mostly belonging to the twelve poorest Peruvian departments (representing about half of the country). Over the project's lifetime, the poverty ranking of those departments has remained stable and these 12 departments still belong to the countries' 16 poorest.

Most of the physical targets set for the project were surpassed by its closing date on November 30, 2006. The provincial decentralization pilot (component 4) also exceeded very significantly its initial target and proved to be perfectly aligned with Peru's agenda for greater decentralization at the municipal level.

In all departments but *Madre de Dios*, the final output of rehabilitated roads was higher than the initial target. The additional output of rehabilitated roads benefited, to a significant extent, to the departments where the 2001 extreme poverty rate was the highest (see Figure 1).

Figure 1: Stock of rehabilitated roads vs. extreme poverty levels



Key outputs by component are described below:

Component 1: Rehabilitation of Rural Roads and Connecting Primary and Secondary Roads

At closing, the program had rehabilitated 4,692 km of roads, compared to an initial objective of 3,575 km. This was made possible due to a lower-than-expected rehabilitation cost per km (average cost of 14,050 US$ per km compared to an initial estimation of 17,300 US$ per km). Rehabilitated roads include 4,039 km of rural roads and 653 km of connecting primary and secondary roads (compared to an objective of respectively 3,225 km and 350 km).

Adding up the 4,692 km of rural roads rehabilitated under the Second Rural Roads Project to the 8,882 km of rural roads rehabilitated under the Rural Roads Rehabilitation

and Maintenance Project and to the 502 km of roads financed by other donors (USAID, *Fondo Italo-Peruano*, *Fondo Contravalor Peru-Francia*, The Netherlands, *Devida* and *Prodatu*) under the same model, it is a total of 14,076 km of rural roads that have been rehabilitated by *Provias Rural* (now *Provias Descentralizado*) over slightly more than a decade. This represents about 32 percent of the total Peruvian rural roads network. In the twelve departments that have been targeted by the Second Rural Roads Project, it is an average of 49 percent of the network that has been rehabilitated.

As initially envisaged, rural roads were rehabilitated using exclusively low-cost rehabilitation techniques (gravel roads), prioritized by local stakeholders through participatory road planning.

It is estimated that rehabilitation works helped create 27,514 seasonal unskilled jobs (compared to an initial objective of 10,000); 8,258 from rehabilitation of rural roads (1,614 skilled and 6,644 unskilled), 8,126 from the rehabilitation of NMT tracks (615 skilled and 7,511 unskilled) and 11,131 from periodic maintenance (2,566 skilled and 8,565 unskilled).

Component 2: Routine and Periodic Maintenance of Rural Roads and Connecting Primary and Secondary Roads

At closing, the project had extended the routine maintenance system with micro-enterprises from 11,295 km to 14,750 km, compared to an initial objective of 13,495 km. To this end, the number of micro-enterprises had been increased from 340, at project start, up to 532, at closing (compared to an initial target of 470). A greater number of micro-enterprises were needed to maintain the larger network of rehabilitated roads (roads are better maintained when a single micro-enterprise is in charge of 20 km of roads instead of 30 km, as it was initially thought). Out of the 642 micro-enterprises created by *Provias*, the financing of 456 has been transferred to local governments (126 in 2003 and 330 in 2004-2005), 109 to regional governments and 13 to *Provias Nacional*, as a pilot to experiment micro-enterprise-based maintenance on primary roads. Only 58 are still being financed directly by Provias Descentralizado, and 6 have been directly created by the Provincial Road Institute of Arequipa.

The transfer of the financing of the micro-enterprises made in 2003 represents an annual cost of US$ 1.5 million for 2,850 km. Similarly, the transfers made in 2004-2005 represent an annual cost of US$ 6.3 million for 7,678 km of rural roads, for which 40 percent is financed by local governments from their own resources. The rest was financed by the program through a specific intergovernmental transfer to local governments. In 2006, this transfer was made permanent, thus ensuring the sustainability of the maintenance mechanism.

The project also financed the periodic maintenance of 8,598 km of rural roads. Most of these roads had been rehabilitated under the Rural Roads Rehabilitation and Maintenance Project.

The combination of routine and periodic maintenance helped optimize the life cycle of rehabilitated rural roads. It also demonstrated that the gravel rehabilitation standards can be sustainable and be a cost-effective alternative to paving (see Box 2).

Box 2: Life cycle of a rural road near Cusco

The 2nd Rural Roads project constitutes the second phase of a broader rural roads program which was initiated 12 years ago, with the Rural Roads Rehabilitation and Maintenance Project (first phase). Some roads which were rehabilitated during the first phase received periodic maintenance under the follow-on project (second phase).

The road Cusco-Coorca-Totora is a good example of the complementarities of the two projects. This 30 km road located in the district of Cusco (province and department of Cusco), had been rehabilitated in 1996. *Coorca*, the micro-enterprise in charge of the routine maintenance of the road, had been created the same year. It employs 3 people on a permanent basis.

This rural road received periodic maintenance in 2001, under the second phase of the program, for a total cost of 107,000 soles (approximately US$ 32,000). The financing for routine maintenance, was transferred in 2006 to the corresponding local governments by supreme decree N 017-2006-MTC.

This rural road will receive another periodic maintenance under the next phase of the program (Decentralized Rural Transport Project). The combination of efficient and well-planned routine and periodic maintenance activities should allow extending the life cycle of this gravel road (i.e. the delay between two rehabilitations) to more than 15 years! This example illustrates how well maintained, low-cost gravel roads can constitute a sound and sustainable alternative to more expensive technical options (such as paving).

Source: Provias Descentralizado

Micro-enterprises helped creating employment opportunities for poor people from rural communities living nearby the rehabilitated roads. At closing, 5,997 permanent unqualified employment opportunities had been created, compared to an initial objective of 5,500. Thanks to the gender action plan approved in June 2005, the proportion of women in micro-enterprises increased from 4 percent at project start to 23 percent for the micro-enterprises created under the Second Rural Roads Project.

Finally, and although this was not an initial project objective, *Provias Descentralizado* (then *Provias Rural*) helped transferring at the regional level the maintenance model with microenterprises. Provias Rural worked with regional governments and with *Provias Departamental* (at that time, the national agency in charge of the regional road network) to transfer the maintenance model that had been developed on 2,706 km of regional (secondary) roads that had been rehabilitated under the Rural Roads Rehabilitation and Maintenance Project. This helped the preparation and implementation of another Bank-financed project (Regional Transport Decentralization Project) which was approved in July 2005 with the objective of helping the decentralization of regional roads management to regional governments.

Component 3: Improvement of Non-Motorized Rural Transport (NMT)

At closing, the project had financed the improvement of 3,465 km of NMT tracks, compared to an initial objective of 3,100 km. This greater output can be explained by a lower-than expected improvement cost.

The total network of NMT tracks in Peru is little known but, based on the results of thorough inventories that were made in the provinces of *Sihuas*, *Ocros* (both provinces are located in the department of *Ancash*) and *Picota* (department of *San Martin*), it is estimated that it could range from 56,000 to 184,000 km. Based on these assumptions, in the departments were the project has been operating, it is possible to estimate that 4 to 12 percent of the total NMT has been improved.

NMT tracks that were improved were selected by local stakeholders through "prioritization workshops" that were part of the preparation process for the participatory provincial road plans.

The organization set in place for the improvement of NMT tracks involved three actors: the beneficiary population, constituted in "rural road committees" ("*Comités viales*") in partnership with local authorities; local NGOs specialized in rural development, and more particularly in sustainable and participatory processes; and national government through Provias Descentralizado. Each actor brought its own resources and capacity: *Provias Descentralizado* financed 70% of the cost of the works (US$1,750 per km) and provided overall supervision and technical assistance. Local NGOs were responsible for: financing and conducting preliminary studies and socio-economic evaluation of the targeted area (these studies cost US$ 400 per km); promoting, organizing and constituting rural road committees; and making a technical and operational manual, including a cost analysis. Rural Road committees were then contracted by *Provias Descentralizado* and were responsible for the execution of the works. Their contribution in labor represented 30 percent of the cost of the works. Rural road committees received technical assistance from NGOs during the building period which took 4 to 6 months.

The project helped constitute 247 road committees, with the assistance of 31 local NGOs. About 500 rural communities benefited from the component. The cumulated contribution of rural roads committees through their labor force has been estimated to an equivalent of US$ 3.9 million. Rural road committees have been maintaining the improved NMT tracks.

Finally, with the financial assistance of other donors (e.g. French Aid Agency), *Provias Descentralizado* has been improving NMT tracks of tourism significance. An example is the 32 km track that leads to the Inca ruins of *Choquequirao* in Apurimac and Cusco.

Component 4: Provincial Road Management Pilot

This component may be the most successful of all since it was initially envisaged as a pilot and became almost streamlined at the time of closing. The initial objective was to

"test an institutional model for managing the rural road network at the provincial level, in which the municipal authorities of the province (provincial and district municipalities) will jointly assume responsibility over the development and condition of a core provincial network". The component aimed at testing, first in one Peruvian province (Arequipa) and then in at least 12 provinces, an innovative, fully decentralized, institutional model named "Provincial Road Institute" (PRI).

At closing, 36 PRIs had been created and had reached full implementation capacity of which 26 were the most advanced, 72 had reached basic institutional capacity and 13 were in creation. In total, 121 provinces (i.e. the entirety of project area) were engaged, at various stages of implementation, in the creation of a PRI.

Box 3: The Provincial Road Institute of *Yungay*: example of a very advanced PRI

The PRI of Yungay, created in 2002, gathers in one single institution the provincial government of *Yungay* and the 7 local governments of the districts that constitute the province. This institute is responsible for: (i) developing, managing and updating the provincial road plan; (ii) planning and managing the provincial rural road network; and (iii) financing the routine maintenance of the 186 km of rural roads which have been rehabilitated by the former *Provias Rural* (this transfer was made through two supreme decrees in 2004 and 2006). To achieve its objectives, the PRI has signed agreements with each of the 4 districts concerned by the rehabilitation works and has a budget of 640,000 soles (approximately US$ 194,000), with 60% coming from the province and 40% from the districts. Part of the funds comes from the national government and is channeled through the province and the districts: ordinary resources (transferred by the central level to local governments) account for 58%, while *Foncomun* accounts for 42% of the PRI's budget. The PRI is staffed with a manager, an operation officer, a treasurer and one assistant, the two latter being employed by the provincial government of *Yungay*.

As of today, the PRI of *Yungay* finances 7 micro-enterprises, representing 70 permanent jobs, which maintain the 186 km of rural roads transferred by *Provias*. It has also contracted different work studies financed by *Provias*. In addition, the PRI has contracted and executed by itself the reparation and upgrading of 8 small bridges. For the future, it plans to rehabilitate and upgrade 6 rural roads and to conduct the periodic maintenance on one rural road, all works being financed by *Provias Descentralizado*. Regarding its planning function, the PRI is currently updating its provincial road plan which was prepared in 2002. For all these activities, the institute closely coordinates with *Provias*, both at the central and local level, through the *Unidad Zonal*.

Source: *Provias Descentralizado*

The component initially included the rehabilitation and maintenance of about 200 km of priority roads in the pilot province of Arequipa in a fully decentralized manner (i.e. with the direct involvement of the PRI). Early-on in project implementation, 158 km of roads were actually rehabilitated and maintained under this component. With the expansion and streamlining of the PRI model, other works involving PRIs were then financed under component 1.

In a Peruvian context in which the decentralization reforms gained significant momentum after 2002, the institutional model of the PRI had proved to be a very effective tool to empower municipalities and overcome the institutional fragmentation of the municipal sector through the constitution of effective partnership between district and provincial

municipalities. The follow-on, Bank-financed operation (Decentralized Rural Transport Project), approved on December 2006, will build on these achievements by (1) scaling up to the entire country the PRI model; and (2) experimenting in selected provinces a transition from "Provincial Road Institutes" toward "Provincial Infrastructure Institutes" in order to foster greater complementarities across the rural infrastructure sectors.

Component 5: River Transport Improvement Pilot

This pilot (*Plan Piloto Selva* or PPS in Spanish) aimed at developing a comprehensive (institutional, technical, safeguards) model to improve rural transport, customized to the context of the Peruvian *Selva*, and in doing so, improve access to services such as education and health for the Indigenous communities and poor settlers. One related initial objective was to assess the relevance and modalities of improving river-based transport which is the most important transport mode in the Amazon region. To this end, the PPS included: (i) implementation of small inter-modal transport projects to allow access to river and terrestrial transport, including the construction of wharfs; (ii) Rehabilitation of rural roads that link towns to river access and productive areas; and (iii) Improvement of rural roads and NMT tracks that allow villages' access to the rural roads and to the wharfs. Due to the lack of former experiences in the *Selva* region, the PPS aimed at assessing methodologies as well as processes related to all aspects of project implementation. The final objective of the PPS was to extract lessons and assess its potential for replication in other parts of the Peruvian Amazon basin.

To implement the pilot, *Provias Descentralizado* worked hand in hand with the governmental research institute specialized in the Amazon basin (*Instituto de Investigaciones de la Amazonia Peruana* or IIAP) which provided social supervision to the project. The PPS was carried out following best practices standards, including the preparation of an in-depth Socio-Environmental Study (ESS) and Action Plans by a consortia compounded by one environmental and two social firms. The ESS included a socio-economic assessment as well as physical and biological evaluations, while the Action Plans included Indigenous Peoples Plans, an environmental protection plan and a monitoring and evaluation plan. The studies were made with the intense participation of the local communities, Indigenous and settlers, as well as the involved municipalities and the regional and local authorities.

A limited area was selected, including three locations along the *Ucayali* River between the city of *Pucallpa* and the town of *Atalaya*. The PPS was implemented in the Districts of *Masisea Iparia and Tahuania* and benefited communities from two Indigenous ethnic groups, the *Ashaninka* and the *Shipibo-Conibo*, as well as the small towns and settlers' villages in the area.

The methodology implemented in the PPS allowed for the inclusion of activities beyond transport improvement, such as the promotion of strategic partnerships to strengthen local organizations and provide technical and financial advice for developing productive projects, as well as to facilitate coordination and synergies with other sectors (agriculture,

fisheries, etc.) for the preparation of development projects in the area of influence of the PPS.

In total eight road projects were identified through participatory workshops for both districts, totaling around 5 million dollars. As part of the expected synergies these works were to have, 8 development projects were identified to be implemented in the area of influence of the PPS. At closing, a total of 47.63 km of NMT tracks were finalized, which represent 100% completion. In regard to the rural roads, two sets were planned: 1) rural roads and 2) lower standard rural roads. The first set comprised a total of 50.11 km, out of which 18.70 km have started the initial civil works and 25.02 km are still pending. Regarding the second set, out of the initial 138.43 km, 5.76 km have been completed, 55.91 km are in an advanced stage and 76.75 km are still pending. From the last figure, three segments representing 45.28 km are not being considered until the required bridges are built with support from the regional governments, or less costly alternatives are identified. The construction of these bridges is beyond the financial capacity of the PPS. The preliminary works for the 2 wharfs have started and these will be built by the Regional Governments. All the pending works are expected to be implemented during 2007 and finalized by the end of 2008.

The causes behind these delays are related to a number of challenges faced by the PPS before and during construction in great deal due to the climate conditions of the Amazon basin. Before construction the PPS had to face the fact that there were few interested firms in the bidding process. This was due to, among other reasons, the lack of experience in rehabilitating rural roads in the Peruvian Amazon, the risk involved in moving heavy equipment by river for works with small financial scope, and concern due too frequent and heavy rainfall. During construction the following limitations were faced: it was impossible to move heavy equipment on the ground during the rainy season, the firms did not have their own equipment and had to depend from renting from others. The material needed for construction had to be brought from further south and transportation was only possible during the rainy season due to river levels, which coincides with the highest demand for barges because this is the time for logging gathering and transportation.

A Bank mission to the *Masisea* region was organized in April 2007 to assess results from the PPS. The most important lessons learned are related to the relationships between climate seasonal variations and local topography, as well as to the local participation and local and regional government commitment.

On the first issue, the PPS has found out that the development of civil works for road rehabilitation and wharf construction require at least two stages in different seasons. The first stage is for the recollection of construction materials and depending on the topography and location of materials it has to be made either in the dry season or in the rainy season, while actual construction has to wait for the dry season. So in some instances to finalize one of the road projects it could take around a year, and even more, while in other cases it could be done in two seasons. This had cost implications as well as the requirement of a flexible schedule. Overall it clearly showed that working in the *Selva*

region requires much more time than in the *Sierra*. The topography of the areas also showed that the number of small bridges require to complete a road cannot be underestimated due to the terrain prone to flooding.

Another lesson learned is that the bidding process should target firms located in the *Selva* region because those coming from urban settings like Lima lack experience in working in the Amazonian terrain.

As a consequence of the specific challenges of the *Selva* (difficult access, lack of local materials, reduced competition), rehabilitation costs have been found to be much higher than in the rest of Peru. In order to reduce rehabilitation costs, taking also into count the lower traffic levels, road rehabilitation standards could be simplified. One first step in that direction was made by Provias with the design of specific standards (*Caminos Vecinales Menores*) which are an adaptation of regular rural roads design to traffic conditions in the *Selva* (low traffic constituted mostly from "moto-taxis"). Provias plans to continue studying rehabilitation alternatives customized to the *Selva*.

On a second set of issues, the PPS showed that local Indigenous communities as well as settler's towns and municipalities were eager to participate and to have the road projects completed. They set up committees to overlook the civil works, ensure security of the materials and safety of the civil works, and avoid the transit of trucks that work in wood extraction as to protect their forest. Regarding the expected productive projects there has been less financial commitment on the part of the regional authorities than previously expected.

IPDP Sub-projects. For identifying and agreeing on the subprojects to be supported under the PPS, several workshops were carried out in six areas. These included representatives from the Indigenous communities and local authorities. Three areas were identified: productive activities, social infrastructure and capacity building.

(a) Productive activities: fish farms in Lake Imiria; reforestation with native species in Masisea, Iparia and Tahuania; re-population with native fish species in the lakes of Tahuania, Islas Canarias, and Masisea; development of tourist facilities in Lake Imiria. Technical assistance for sugar cane production in Iparia;

(b) Social infrastructure: projects for drinkable water and rural electrification in Masisea. Improvement of the health services in Masisea, Iparia, and Tahuania;

(c) Capacity building: Creation of the Community Reserve in Lake Imiria.

The project on rural electrification and the improvement of health services in Tahuania have been delivered by the Regional Governments.

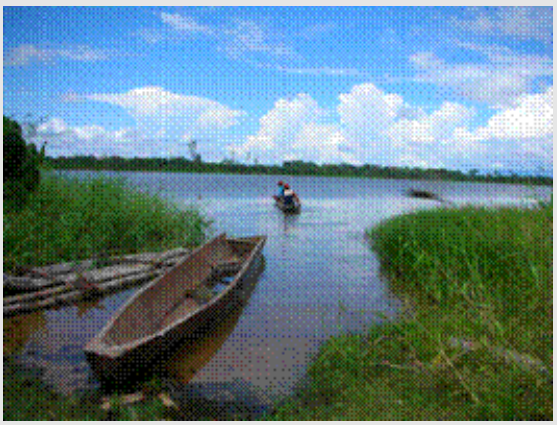
The PPS commitment was to support the local authorities in their efforts to coordinate with the government sectors relevant to the projects listed above, not to directly finance their implementation. Provias Rural considers that these initiatives should be part of *Ventana del Desarrollo* because the PPS is still under implementation and this situation provides an opportunity to further support them.

An unexpected outcome has been the increase of private investment in the area. *Masisea* has become the largest papaya producer in the region with around 2,000 has of this crop, due to land access provided by road improvement.

Box: Plan Piloto Selva

An unexpected outcome of the PPS has been a significant increase in papaya production in the Masisea district, turning it in one of the largest producer's area in the Peruvian Amazon basin.

The PPS has benefited the Shipibo-Conibo of this area. One of the largest Indigenous groups of the Peruvian Amazon basin.



Some of the NMT tracks link small villages with lakes that facilitate access to fishing resources, encourages fishing farm investing and has potential to incentive tourism for the benefit of the surrounding communities.

Heavy road rehabilitation equipments are transported by boat on the Ucayali river.

Component 6: Institutional Development

This component encompassed four activities:

6.1 Improving Rural Transport Policies and Strategies

Key outputs financed under this activity include:

- Strengthen decentralization policies: Within this activity, *Provias Descentralizado* maintained an active dialogue with other Peruvian agencies involved in the decentralization reforms. The program was highlighted in the successive Government's Annual Transfer Plans (*Planes de Transferencia*) as one of the most successful and effective initiatives to transfer new responsibilities to sub-national governments.

- Make the financing of routine maintenance sustainable: Throughout project life time, *Provias Descentralizad*o has been working actively with MEF to make permanent the transfer of specific budget resources to municipalities to pay for routine maintenance and make the micro-enterprise model sustainable. This goal was achieved in 2006 with the publication of Supreme Decree No. 017-2006-MTC which transfers on a permanent basis to municipalities specific resources in order to finance the routine maintenance (and related administrative costs) of rehabilitated rural roads.

- Promote gender: A "gender action plan" was prepared and implemented by an individual consultant contracted under this component. The action plan allowed streamlining gender in various activities, including: micro-enterprises, road committees and Local Development Window initiatives.

- Impact evaluation: Two thorough impact evaluation studies (at mid-term and at the end of the project) were performed under this activity. With the final impact evaluation survey that has been performed at the end of the Rural Roads Rehabilitation and Maintenance Project, three impact evaluation surveys covering about 12 years of implementation have been done, allowing capturing long-term impacts of rural roads investments on rural welfare.

- Transport, rural infrastructure and rural development: Within this activity, *Provias Descentralizado* coordinated closely with other agencies in charge of rural infrastructure and rural development. *Provias Descentralizado* has been an active member of the National Commission of Rural Development and has led an initiative to strengthen coordination with agencies in charge of rural infrastructure. This initiative was formalized through the signing of a Memorandum of Understanding (MoU) between these various agencies and will be furthered through a "rural infrastructure pilot" to be implemented within the follow-on operation (Decentralized Rural Transport).

- Creation of *Provias Descentralizado*: *Provias Descentralizado* was created in August 2006 by Supreme Decree No. 029-2006-MTC, from the merging of *Provias Rural* and *Provias Departamental*. This institutional evolution is a positive step to strengthen the decentralization process by focusing the role of the national government on regulatory responsibilities and assistance to sub-national governments. The merger is also expected to facilitate the dissemination of best practices from rural to regional roads.

6.2 Improving Planning and Management of Rural Roads

This activity aimed at financing a technical assistance package to strengthen the capacity of local stakeholders to efficiently plan and manage their rural road assets.

In particular, a methodology for participatory road planning was developed and improved. Over the project's life time, 71 Participatory Provincial Road Plans were carried out by individual consultants who worked in partnership with the provincial local coordination council. These councils are headed by the provincial mayor and include district mayors and representatives of different communities, associations, enterprises or professions. The goal of the participatory plan was to strengthen the road planning capacity of local authorities in a way that favored the decentralization process by prioritizing all road investments which were to be made in the province in line with the vision that the provincial council had for developing the province.

The process to prepare this plan has been divided in seven steps. The first two steps were preparatory activities (such as the organization of workshops with municipalities or associations, or the preparation of a work program) and the collection of information. The third step was a provincial diagnostic which analyzed different aspects of the initial situation of the province such as its demography, its economy, its social aspects or its road environment. The fourth step was the prioritization of investments through a matrix which constituted the first main output of the plan. This matrix ranked the different rural roads (there is another matrix for NMT) through a process which took into account several criteria divided in five groups: spatial, economical, social, technical and natural resources. Each criterion had a given weigh approved in advance by the local council so as to avoid any further protest. The fifth step was the planning of objectives and the carrying out of a strategy for road network management. The sixth step was the establishment of the provincial investment plan for road infrastructure which ranked all investments by road, type of road (rural or NMT) and type of investment (rehabilitation, periodic or routine maintenance). This investment plan constituted the second main output of the participatory provincial road plan: this ranking set the order of all investments which were to be made in the province. Moreover, suggestions for financing the proposed investments had to be included in the plan. The last and seventh step was the monitoring and evaluation of the participatory plan, with a proposed list of monitoring and evaluation indicators.

The preparation of these plans also included the constitution of road inventories. These inventories were prepared based on registered roads assessed through field surveys. In two provinces, *Provias Descentralizado* piloted the preparation of a more comprehensive inventory with the use of Geographic Information System (GIS) technologies (see Box 5). These technologies, though being more costly than the traditional road surveys, proved to bring an added value in terms of updating the knowledge of the actual network. These benefits justified the scaling up of this approach in the follow-on project (Decentralized Rural Transport Project).

Box 5: Outputs from the GIS-Based Road Inventory Pilot

When preparing Participatory Provincial Road Plans, many consultants noticed that most of rural roads were not registered at the national or local level. It is estimated that the total length of the Peruvian rural road network could reach 100,000 km, about twice as much as the registered network of 47,000 km. A huge number of roads had in fact been built by various entities (communities, municipalities, firms…) which were not required to report these new constructions while no road census has been conducted for years.

In order to tackle this problem of roads registration and to provide provinces with a powerful planning tool, as well as to give a useful regulation tool to the MTC, *Provias Descentralizado* decided to implement a Geographic Information Systems (GIS) pilot in two Peruvian provinces: Yauyos and Huaral. This technology has been chosen because it had been proved to be the cheapest and most rapid one to implement. Once equipment has been bought (US$ 8,000, mostly for GPS system), such a study costs 20,000 soles and takes one month and a half to be conducted (including two weeks on the field). Moreover, the methodology retained is divided in six successive steps: 1) meeting with local authorities and coordinating with them; 2) analysis of the rural road network based on the local contributions gathered in step 1; 3) constitution and preparation of the team; 4) field visits (conducted by consultants) where each road is ridden with GPS and information is collected and computed; 5) results evaluation; 6) disclosure of information. The final product is an interactive map (accessible through special mapping software). For each road, the following details are available: national ID number (if registered, this number is provided by the MTC), condition, surfacing type, length, width and the type of land the road is crossing. In addition, pictures and characteristics of bridges, as well as distances between villages are also available. Other features can be added, if needed. However, NMT are not registered by this system, because of their large number and their changing nature.

Source: Provias Descentralizado

6.2 Developing Community-Based Micro-Enterprises for Road Maintenance

This activity relates to the technical assistance provided to establish and strengthen micro-enterprises performing routine road maintenance on rehabilitated roads (see also Component 2).

An important aspect of this technical assistance has been the recruiting of "road monitors" (*monitores viales*). These recently-graduated young engineers, economists or social scientists were contracted by *Provias Descentralizado* for a period of one year. Each of them has been working with 4 or 5 micro-enterprises, with the objective of: (i) monitoring road conditions and maintenance activities; (ii) providing technical assistance and coaching to micro-enterprises (e.g. technical aspects of maintenance, safeguards aspects, entrepreneurial capacity); and (iii) as needed, bringing targeted social help (e.g. teaching how to read) to communities. At closing, 66 monitors with a civil engineering background and 11 monitors with a social background were active.

6.3 Strengthening Rural Communities and Households' Capacity to Create and Engage in Social and Economic Development Opportunities

This activity consisted in the design and establishment of a specific instrument, named "Local Development Window" (LDW) in selected poor districts, with the objective of stimulating the emergence of productive activities that could spur with the improvement of road conditions.

Over the project's life time, the LDW has intervened in 85 districts in 12 provinces chosen among the poorest in Peru. Operated by CARITAS Peru, the LDW identified the best productive initiative and reduced transaction costs for potential sponsors. Selected initiatives were presented during "project fairs" (*ferias*). Between October 2001 and September 2006, the LDW identified 850 initiatives at pre-feasibility stage, of which 167 reached feasibility stage and 72 found a sponsor. Eight regional fairs and one national one were organized, allowing to leverage SDR 7.2 million of financing from various sponsors. Remarkable initiatives that were supported include for example the construction of a fish farm in the district of *Sauce* (*San Martin* region) or the cultivation of a traditional root called *Yacon* in the district of *Orcotuna* (*Junin* region). In both cases, these initiatives became viable because the improvement of transport conditions made access to local markets easier and more reliable. In addition to promoting the spurring of productive activities, the LDW has worked with municipalities to help them prepare a district development plan that are describing a strategy for the development of their territories. These plans were then used by municipalities to rationalize their public expenditures and to comply with the accreditation requirements put in place by the National Decentralization Council (CND in Spanish). More recently, the LDW started to move its planning methodology at the regional level, with the preparation, to the date, of three provincial development plans. Thus, the LDW proved both to be a relevant instrument to promote rural growth and to strengthen at the same time community participation and municipalities' institutional capacity. An illustrative sample of projects supported by the LDW is presented on the Internet (http://www.proviasrural.gob.pe/).

Annex 3. Economic and Financial Analysis

The ex-ante economic evaluation performed a Cost Benefit Analysis (CBA) of 36 sample sub-projects completed under the first phase of the program using the producer's surplus approach that relates the rehabilitation and maintenance costs of a sub-project with benefits in terms in increases in net agricultural and livestock production (net of local consumption and production costs). The ex-post economic evaluation: (i) reviewed the CBA and the Cost Effectiveness Analysis (CEA) presented on a sample of 423 feasibility studies prepared during the project implementation, and (ii) performed representative ex-post CBA and CEA evaluations considering actual road works costs and results of the latest impact evaluation study prepared during the implementation of the project.

Ex-ante Economic Evaluation

The economic evaluation framework defined for the project at appraisal considers the stage of development of the sub-project area of influence. Sub-project in a first stage of development, in areas with a high percentage of poverty, serving a social function and typically with very low traffic (less than 15 AADT) or only non-motorized traffic (tracks), are analyzed on the basis of social considerations (cost effectiveness approach) identifying the total project costs, the total beneficiary population in the direct and indirect are of influence of the sub-project, and the cost per beneficiary indicator. The maximum project cost was set to US$ 250,000 and the maximum cost per beneficiary indicator was set to US$ 100 per beneficiary. These thresholds were based on the experience of the sub-projects undertaken in the first phase of the program. The direct are of influence includes communities around 500 meters to both sides of the road right-of-way, without considering the most populous city at either end of the road. Indirect area of influence includes communities around a10 km band along the road. When these thresholds were not met, a sub-project had then to be analyzed following any of the other approaches, as listed below.

Sub-projects with more advanced stage of development, typically with high long distance traffic (higher than 30 AADT) and serving an economic function, are evaluated based on benefits to road user costs compared to the rehabilitation and maintenance costs following the application of the Roads Economic Decision Model (RED). This methodology is applied to segments of primary and secondary network that have been identified as critical to allow connection with or among networks of rural roads. The RED model performs the economic evaluation of road investment options using the consumer's surplus approach.

Sub-project in intermediate stage of development, typically with traffic between 15 and 30 AADT and serving agricultural and livestock production, are evaluated using the producer's surplus approach. This methodology entails the definition of certain assumptions about future increases in agricultural and livestock production and productivity as a consequence of the rehabilitation of the roads.

The ex-ante economic evaluation of the rehabilitation of rural roads was done evaluating, with the producer's surplus approach, 36 sample sub-projects completed under the first phase of the program, totaling 1,563 km and US$ 20.34 million of investment costs (representing 20% of the investments and the number of kilometers rehabilitated of this component). The results of the ex-ante analysis yields an economic rate of return (ERR) of 25% and a net present value (NPV) of US$ 20.27 million at 10% discount rate, which is equivalent to US$ 12.75 million at 14% discount rate, which is the prevailing discount rate in Peru during the project implementation period. The ex-ante evaluation considered the following assumptions:

(a) an increase of 7.5% in the number of livestock (to take place in year 3), though maintaining the same level of net benefits per unit of livestock;
(b) an increase of 5.0% (to take place in year 3) in the overall agricultural area for key agricultural products in the area of influence of the sub-projects;
(c) a decrease of 5.0% in the costs of production for either agricultural or livestock-related products (to take place in year 3);
(d) no adjustments were made to the agricultural yields or to farm prices;
(e) average rehabilitation cost of US$ 13,017 per km;
(f) average routine maintenance cost of US$ 1,200 per km per year;
(g) sample network length of 1,563 km for a total investment of US$ 20.34 million; and
(h) discount rate of 10% that was the prevailing discount rate in Peru at appraisal.

At appraisal, the cost effectiveness of the improvement of non-motorized rural transport (tracks) was not quantified in numerical terms.

Feasibility Reports Economic Evaluation

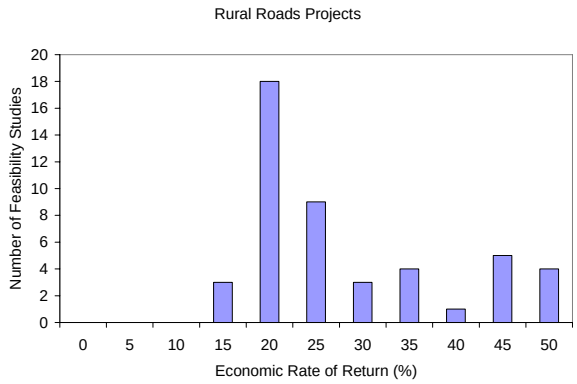
The Regional Governments prepared Participatory Regional Plans to identify the sub-projects investments to could be funded under the project, utilizing a multi-criteria index to rank the road sections and define priorities. Consultants prepared project level feasibility studies for each identified sub-project to quantify the rehabilitation needs of the project road and evaluate its economic or social justification. Non-motorized tracks and rural roads with traffic less than 15 AADT were subject to CEA and rural roads with more than 15 AADT were subject to CBA using the producer's surplus approach. A sample of 124 rural roads feasibility studies were reviewed totaling 2,128 km (42% of the total program of 5,018 km), of which 47 feasibility studies (984 km) included CBA and 77 feasibility studies (1,144 km) included CEA. The overall average rehabilitation unit cost is US$ 15,280 per km and the overall average total population served is 497 persons per km.

Cost Benefit Analysis

For the 47 roads subject to a CBA: (i) the average rehabilitation costs is US$ 16,657 per km; (ii) the total rehabilitation cost is US$ 13.78 million; (iii) the total NPV is US$ 6.75 million, at 14% discount rate; (iv) the ERR is 23.6%; and (v) the average total population

served is 337 persons per km, of which 260 persons are direct beneficiaries (communities around 500 meters to both sides of the road right-of-way). Figure 2 presents a histogram of the ERR for the rural roads projects.

Figure 2: Economic rate of returns of rural roads projects



The CBA evaluations were done adopting the producer's surplus approach by comparing the project costs and economic benefits derived from increase in agricultural and livestock net production value as a result of productivity increase linked to the road improvement. The feasibility studies considered different assumptions regarding the (i) increase in the number of livestock and overall agricultural area for key agricultural products after the project; (ii) decrease in the costs of production for either agricultural or livestock-related products after the project; (iii) and the growth rate of the agricultural area and number of livestock with and without the project. A detailed review of 12 feasibility studies shows that in year 3 on average the total agricultural and livestock production benefits (profits), net of production costs, are 15% higher with the project compared with the without project scenario, which is broadly in line with the ex-ante economic evaluation assumptions. The table below presents a sample of the agricultural and livestock characteristics on the area of influence of the project roads.

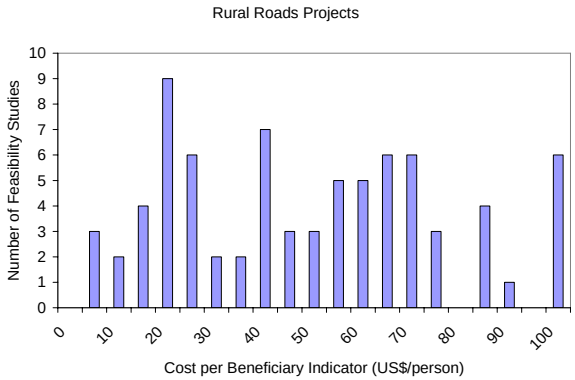
Table 4: Sample agricultural and livestock characteristics

Agricultural Product	Yield (ton/ha)	Production Cost (US$/ha)	Farm Price (US$/ton)
Wheat	1.30	500	300
Amylaceous Maize	1.60	600	320
Beans	1.00	750	360
Rice	1.50	500	220
Yellow Maize	1.60	450	220
Banana	2.00	300	140
Livestock	**Yield (kg/head)**	**Production Cost (US$/head)**	**Farm Price (US$/head)**
Bovine	180	17	125
Goat	35	8	20
Pig	45	5	40
Ovine	20	3	10

Cost Effectiveness Analysis

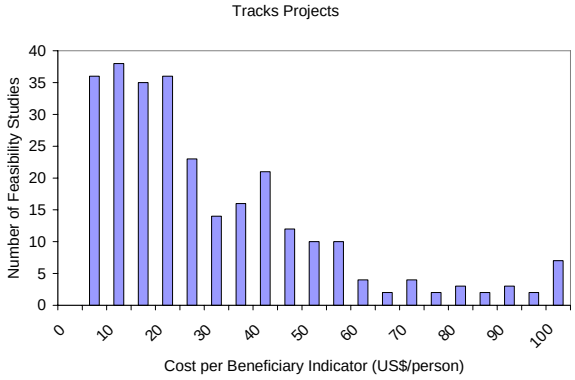
For the 77 rural roads subject to a CEA: (i) the average rehabilitation cost is US$ 14,439 per km; (ii) the total rehabilitation cost is US$ 17.62 million; (iii) the average cost per beneficiary indicator is US$ 46 per person; and (iv) the average total population served is 594 persons per km, of which 390 persons are direct beneficiaries. The CEA cost per beneficiary indicator was computed dividing the present value of the road agency costs over a 10 year evaluation period by the total population served (direct plus indirect beneficiaries). The road agency costs comprise the investment costs, routine and periodic maintenance costs, supervision costs, and environmental mitigation costs. The average routine maintenance costs is US$ 850 per km per year; the average periodic maintenance cost is US$ 2,900 per km executed every 3 years; the average supervision cost is US$ 1.230 per km; and the average environmental mitigation cost is US$ 380 per km. Figure 3 presents a histogram of the cost per beneficiary indicator for the rural roads projects.

Figure 3: Cost per beneficiary for rural roads projects



A sample of 299 non-motorized tracks improvements feasibility studies were reviewed totaling 2,636 km (73% of the total program of 3,607 km), on which CEA was performed. For these tracks: (i) the average improvement costs is US$ 2,500 per km; (ii) the total improvement cost is US$ 6.6 million; (iii) the average cost per beneficiary indicator is US$ 27 per person; and (iv) the average total population served is 295 persons per km of which all are direct beneficiaries. Figure 4 presents a histogram of the cost per beneficiary indicator for the non-motorized tracks.

Figure 4: Cost per beneficiary for NMT tracks.



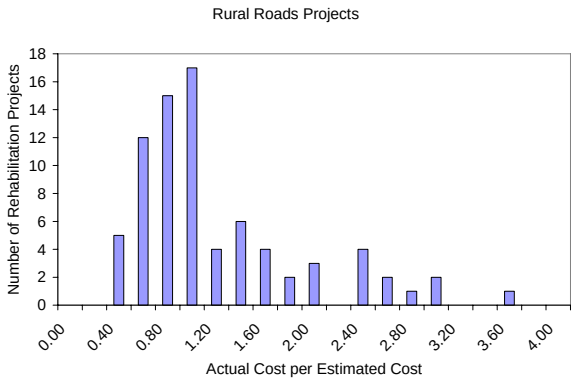
Ex-post Economic Evaluation

Cost Benefit Analysis

The ex-post economic evaluation was done considering actual road works unit costs and results of the latest impact evaluation study prepared during the implementation of the project. First, a producer's surplus model was developed designed to replicate the results of the ex-ante economic evaluation, and then the actual road work costs and the updated assumptions of the project benefits were entered into the model to produce the ex-post evaluation results. The producer's surplus model was developed taking into account information collected from the feasibility studies related to representative agricultural and livestock characteristics in the area of influence of the project roads.

To determine the actual rehabilitation of rural roads unit costs and to compare them with the feasibility estimates and the contract costs, a sample of 35 rural roads projects subject to CBA were reviewed. The average unit costs estimated on the feasibility studies for the rehabilitation works is US$ 16,657 per km and the average contract costs and actual costs is about US$ 12,813 per km. Contract costs are 23% lower than estimated costs and actual costs are about the same as contract costs. The review of 58 feasibility studies subject to CEA shows that the unit costs estimated on the feasibility studies for the rehabilitation works is US$ 8,833 per km and the average contract costs and actual costs is US$ 12,090 per km. Contract costs are 36% higher than estimated costs and actual costs are about the same as contract costs. Figure 5 presents a histogram of the ratio between the actual unit costs divided by the estimated costs for the 93 projects.

Figure 5: Actual vs. estimated costs for rural roads projects



The review of 277 improvement of non-motorized tracks projects shows that the average unit costs estimated on the feasibility studies for the improvement of tracks is US$ 2,500 per km, the average contract costs is US$ 2,630 per km, and the average actual costs is US$ 1,900 per km. Contract costs are 5% higher than estimated costs and actual costs are 38% lower than contract costs. The review of 231 periodic maintenance contracts shows that the average contract costs is US$ 13,963 per km and the average actual costs is US$ 14,505 per km. Actual costs are 4% higher than contract costs. A review of 2,180 routine maintenance contracts covering 49,640 km of routine maintenance works over 6 years shows that the average contract costs is US$ 502 per km-year and the average actual

costs is US$ 647 per km-year. Actual costs are 29% higher than contract costs, due mainly because the duration of the contracts has been expanded.

The ex-post economic evaluation considered the results of the 2006 impact evaluation study that evaluated the impact on roads rehabilitated or improved between 2004 and 2006. The study shows a big impact of the project on the network condition (table below). Travel times on rural roads reduced by 30% and travel times on non-motorized tracks reduced by 58%. The number of months with road closures on rural roads reduced by 11%. The average travel speed before road works is 15.2 km per hour on rural roads and 5.5 km per hour on non-motorized tracks.

Table 5: Road condition impact

	Travel Times (minutes)		Months With Roads Closures (#)
	Rural Roads	Tracks	Rural Roads
Before Road Works	102	157	1.9
After Road Works	72	66	1.7
Difference	-31	-91	-0.2
Percent (%)	-30%	-58%	-11%

The impact study shows that the total motorized traffic on rural roads has increased substantially with the project investments. The weekly total motorized traffic on rural roads increased by 87% (table below).

Table 6: Motorized traffic impact

	Cars	Micro Bus	Bus	Truck	Total
Before Road Works	29.0	14.8	1.6	9.9	55.3
After Road Works	59.7	23.8	3.5	16.4	103.4
Difference	31	9	2	7	48
Percent (%)	106%	61%	119%	66%	87%

The study shows an impact of the project on the agricultural area and the number of livestock but a negligible impact on the production costs. The study shows that the cultivated surface at area of influence of rural road projects increased by 22%, at 10% significance level; and the number of livestock increased by 7% and the production cost increased by 1%, both without a high statistical significance (table 7).

Table 7: Producer's surplus impact

Producer's Surplus Impact

	Agricultural Area (Hectares)	Number Livestock (#)	Production Costs ($/Hectare/year)
Before Road Works	0.9	43.0	905.2
After Road Works	1.1	46.1	918.6
Difference	0.2	3.1	13.4
Percent (%)	22%	7%	1%

The ex-post economic evaluation was done considering the following assumptions:

(a) no adjustments were made in the number of livestock;

(b) an increase of 22% (to take place in year 2) in the overall agricultural area for key agricultural products in the area of influence of the sub-projects;

(c) no adjustments were made to the costs of production for either agricultural or livestock-related products;
(d) no adjustments were made to the agricultural yields or to farm prices;
(e) average rehabilitation cost of US$ 12,813 per km;
(f) average routine maintenance cost of US$ 647 per km per year;
(g) program network length of 5,018 km for a total investment of US$ 64.29 million; and
(h) discount rate of 14% that was the prevailing discount rate in Peru during project implementation.

The results of the ex-post analysis yield an economic rate of return (ERR) of 31% and a net present value (NPV) of US$ 64.05 million, at 14% discount rate. Table 8 summarizes the economic evaluation results.

Table 8: Economic evaluation results

	Ex-ante	Feasibility Studies	Ex-post
Length (km)	1,563	984	5,018
Investment (M US$)	20.34	16.39	64.29
Investment / km (US$/km)	13,017	16,657	12,813
ERR (%)	25%	24%	31%
NPV at 14% Discount Rate (M US$)	12.75	6.75	64.05
NPV at 14% Discount Rate / Investment	0.63	0.41	1.00

Considering that the impact evaluation has found a 7% increase in the number of livestock without high statistical significance, a sensitivity case was performed adding the benefits of the livestock increase to the benefits of the increase in agricultural area (22%). The sensitivity case yields an ERR of 35% and a NPV of US$ 81.48 million. Considering the same ex-ante producer's surplus benefits but adopting the actual investment and maintenance costs yields an ERR of 27% and a NPV of US$ 48.48 million.

The ex-post economic evaluation shows that the rehabilitation of rural roads component was well justified considering the actual investment costs and the updated assumptions on the producer's benefits. The ex-post net benefits are higher than the benefits evaluated at appraisal due to the lower actual road works costs and the higher than expected impact of the project on the area of agricultural production.

Cost Effectiveness Analysis

The CEA of rural roads presented at the feasibility studies yields an average cost per beneficiary indicator of US$ 46 per person. The ex-post analysis considering the contract costs yields an average cost per beneficiary indicator of US$ 60 per person and considering the actual costs yields US$ 62 per person. The CEA of non-motorized tracks presented at the feasibility studies yields an average cost per beneficiary indicator of US$ 27 per person. The ex-post analysis considering the contract costs yields an average cost per beneficiary indicator of US$ 29 per person and considering the actual costs yields US$ 25 per person. The cost effectiveness of the project was satisfactory with cost per beneficiary averages well below the limit of US$ 100 per person defined at appraisal.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Jose-Luis Irigoyen	Lead Highway Engineer	LCSFT	Task Team Leader – World Bank
Rodolfo Huici	Principal Economist	IADB	Task Team Leader - IADB
Aurelio Menendez	Sr. Transport Economist	LCSFT	Transport Economist
Elizabeth Dasso	Sr. Social Development Specialist	LCSSO	NGO Coordinator – Social Specialist
Francisco Wulff	Operations Specialist		
David Varela	Sr. Counsel	LEGLA	Legal Counsel
Paul Sisk	Sr. FM Specialist	LCSFM	Financial Management Specialist
Colin Gannon	Transport Economist		Transport Economist
Carlos Emanuel	Procurement Specialist	LCSPR	Procurement Specialist
Gladys Sakata	Program Assistant	LCSFT	Program Assistant
Vera Vicentini	Environmental Specialist	IADB	Environmental Specialist
Jacob Greenstein	Highway Engineer	IADB	Highway Engineer
Alfonso Tique	Highway Engineer	IADB	Highway Engineer
Supervision/ICR			
Keisgner De Jesus Alfaro	Sr. Procurement Spec.	LCSPT	Procurement Specialist
Rodrigo Archondo-Callao	Highway engineer	TUDTR	Transport economist
Julie Babinard	Economist	TUDTR	Economist
Luz Caballero	Consultant	LCSTR	Gender specialist
Maria Elizabeth Dasso	Sr. Social Development & Civil	LCSSO	Social Scientist
Nicolas Drossos	Consultant	LCSFM	FM Specialist
Melanie Glass	Junior Professional Associate	LCSTR	Social Scientist
Rodolfo Huici	Principal Economist	IADB	Task Team Leader - IADB
Patricia Mc Kenzie	Sr. Financial Management Specialist	OPCFM	FM Specialist
Aurelio Menendez	Lead Transport Economist	LCSFT	Task Team Leader – World Bank (2002-2004)
Isabella Micali Drossos	Sr. Counsel	LEGLA	Legal Counsel
Juan Manuel Leaño	Senior Road Engineer	IADB	Road Engineer
Xiomara A. Morel	Senior Finance Officer	LOAG1	Disbursement Officer
Miroslava Nevo	Senior Road Engineer	IADB	Road Engineer
Nicolas Peltier-Thiberge	Senior Infrastructure Economist	LCSTR	Task Team Leader – World Bank (2004-2007)
Juan D. Quintero	Sr. Environmental Engr.	EASRE	Environmental Specialist
Luis M. Schwarz	Sr. Financial Management Specialist	LCSFM	FM Specialist
Nicolas Serrie	Junior Professional Associate	LCSTR	Financial Specialist
Vera Vicentini	Senior Environmental Specialist	IADB	Environmental Specialist
Evelyn Villatoro	Sr. Procurement Spec.	LCSPT	Procurement Specialist
Marco Antonio Zambrano	Consultant	LCSTR	Environmental Specialist
Alonso Zarzar Casis	Sr. Social Scientist	LCSSO	Social Scientist

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	USD Thousands (including travel and consultant costs)
Lending		
FY99		40.57
FY00	17	133.39
FY01	25	98.06
FY02		1.50
FY03		0.00
FY04		0.00
FY05		0.00
FY06		0.00
FY07		0.00
Total:	42	273.52
Supervision/ICR		
FY99		0.00
FY00		0.00
FY01		0.00
FY02	16	76.99
FY03	10	42.27
FY04	17	83.09
FY05	26	78.65
FY06	33	88.12
FY07	7	19.34
Total:	109	388.46

Annex 5. Beneficiary Survey Results

Three impact evaluations were performed in 2000, 2004 and 2006. These evaluations were conducted by two experienced Peruvian think tanks (*Instituto Cuanto* for the first two evaluations and GRADE for the last one).

Literature review of the impacts of rural roads programs

There is growing evidence in the literature of how road improvement can generate opportunities to improve economic growth and reduce poverty (Khandker, 2006). Rehabilitation and maintenance of existing roads has a higher impact on the living conditions of the rural poor than the construction of new infrastructure. The decrease of transport costs improves labor productivity and generates employment opportunities in the agriculture and non-agriculture sectors, which in turns leads to increased income and higher expenditures in social services. A summary of the literature with regards to the various possible effects is indicated below:

Effects of transport conditions. Road improvement programs have been found to have a direct impact on transport conditions and costs. Improved roads save tires, reduce vehicle maintenance and make travels faster (Lucas, Davis and Rikard, 1996). In Peru, these cumulated costs were found to represent up to 60 percent of passengers' and goods' total travel costs (Ordinola, 1990). In addition, lesser accidents have been reported on improved roads. In rural areas, the most important benefit comes from ensuring all-weather access, since in the absence of a sound road rehabilitation and maintenance program, roads become impassable in the rainy season. Ensuring all-weather access is generally a major objective of rural roads programs (e.g. Levy, 2004 for the Moroccan experience). The ultimate effect on the pricing of transport services depends on the market structure of transport operators. Decreased operating costs may increase competition among transport services providers. However, in certain cases, increased demand for transport services may reduce the effect of increased competition on pricing.

Effects on access to public services. Improved roads lead to reduced travel time to get to markets and public services (education, health, justice and security). In Morocco, school attendance is higher in areas where transport conditions have been improved, particularly for girls (Levy, 2004). This gender benefit can be explained by the fact that girls and their parents are more sensitive to increased security associated with better transport conditions. In Ghana, better access to health services was found to be one of the greatest benefits of rural roads programs (Porter, 2002). Similar evidence was found in the case of Malaysia (Windle and Cramb, 1996) and other Asian countries (Hettige, 2006). In addition to the positive effect on access and attendance, improved transport conditions lead to better human resources and, ultimately, better quality of public services: in Morocco, it was found easier to attract and maintain qualified teachers and doctors[14] in

[14] Absenteeism of teachers and doctors is a major problem in rural areas, particularly in Peru where these professionals are spending their weekends in more urbanized areas or have to travel to cities to receive their payments (Alcazar, et al., 2003).

the areas targeted by a rural roads program, as well as by other government initiatives to increase the availability of social services in rural areas (Levy, 2004). Ultimately, increased access and higher quality of social services should lead to better education (e.g. illiteracy rates) and health (e.g. diseases' occurrence, malnutrition rates) indicators. However, these ultimate impacts depend on a number of factors (other than just improved roads) and there does not seem to exist significant evidence of such ultimate impact of rural roads programs in the literature. Finally, improved roads could mean better access and quality for other public services (e.g. police, justice) although there does not seem to exist empirical evidence for that. Neither there seem to exist empirical evidence on improved access to privately-operated services like television, post and telephone services.

Effects on productive activities. Improved roads also have an effect on the productive activities of rural households, particularly those that relate to agriculture. In particular, improved access impact relative prices and trading conditions. Poor access generally increases the bargaining power of intermediaries who buy products or sell inputs to small producers. When roads are improved, small producers become closer to local markets and trading centers, resulting in reduced information asymmetry on prices[15] and increased bargaining power. Ultimately, these effects have been found to increase the income of rural producers (Liu, 2000 and Escobal, 2000). These effects also tend to favor productive specialization and clustering, easing the development of commercial agriculture as a substitute to low productivity, subsistence agriculture (Devres Inc., 1980; Gannon and Liu, 1997). The effect of improved roads on reduced travel times and increased travel frequency, contributes to reduced post-harvest losses for fragile agricultural products with greater profitability and easier access to processing plants. Increased profitability combined with improved access to credit also facilitates the use of more modern technologies, with an ultimate benefit in terms of productivity (Biswanger, Khandker and Rosenzweig, 1993). However, the empirical evidence of the effects of rural roads program on agricultural productivity is not as strong when more robust evaluation methodologies are being used (ADB, 2001). According to these studies, rural roads programs are in fact most successful when they are complemented by other initiatives to increase agricultural productivity. Finally, these positive effects on small producers have been found greater for the less poor segments of the rural population (Devres Inc., 1980).

Effects on employment. Various studies discussed how rural roads improvement directly and indirectly affects employment opportunities for rural communities (Jacoby, 2000; Smith and al., 2001; Quizón and Sparrow, 2001; de Janvry and Sadoulet, 2001). The increased productivity of agricultural and non-agricultural activities causes both higher wages and increased employment. Road rehabilitation and maintenance works also generate employment. Easier transport conditions favors migration because of improved access to information regarding employment opportunities in neighbor areas. In Peru, the rural roads program was found to generate employment, particularly in the non-

[15] Information asymmetry results in market segmentation for agricultural products. Because of this segmentation and lack of information, small producers generally have to bear the most part when prices are falling and do not benefit as much when they are rising.

agricultural sectors and for the most educated producers (Escobal and Ponce, 2002). Similar results were found in Ghana (Hine and Riverson, 1982). In Nepal, wages were found slightly higher when travel times to markets are decreased (Jacoby, 2000).

Effects on income. The positive effects on productive activities should lead to greater income, although little empirical evidence can be found in the literature. In cases when migration is promoted, remittances should add to the non-agricultural income for poor households for which a member of the family traveled to an area with greater employment opportunities. The lack of observable evidence is generally interpreted by the fact that, in order to be significant, rural roads program need to be complemented by other initiatives. However, in Bangladesh, an increase of 33 percent on total income was reported, with a greater effect on agricultural income for the less poor producers and a greater effect on non-agriculture income for the poorest producers (Ahmed and Hossain, 1990). Although the effect of rural roads to reduce inequalities is expected to be positive due to the higher poverty rates in rural areas, it is possible that benefits are less significant on the poorest segments on the population.

Effects of expenditures, poverty and living standards. In order for households to increase expenditures that could improve their living conditions, they must perceive additional income as permanent. Otherwise, their strategy is generally to increase savings in one way or another (Chen and Ravallion, 2003). In Peru, the initial benefits (prior to 2000) of the rural roads program principally resulted in an increase of cattle, which was interpreted as a saving strategy (Escobal and Ponce, 2002).

Effects on migration. Rural roads' improvement modifies the migration behaviors of rural households (Hettige, 2006). The effect on permanent migration is ambiguous: on the one end, improved transport conditions facilitate exploring other areas and, therefore, provide incentives for temporal or permanent migration. On the other end, improved transport conditions improve rural welfare and rural-urban linkages, which could reduce the incentives for permanent migration. Finally, improved access facilitate the flow of information between migrated and their relatives and families, which could result in the migration of those. There are little studies in the literature about the effect of rural roads programs on migration. Improvement of transport conditions between producing areas and markets has been found to have a limited impact on migration from rural to urban areas (Devres Inc., 1980).

Effects on gender. Few rural roads programs have included the gender dimension in their strategy. The Peru rural roads program gave the opportunity to poor rural women to express their transport needs in participatory workshops, resulting in the inclusion of NMT tracks in the program (Fort and Menendez, 2002).Based on interviews with beneficiaries, Peruvian rural women seem to have particularly benefited from the program, with greater access to markets, less time lost to get food and fuel and greater participation in local politics. In addition, the effect of rural roads program on improved access to health and education services have been found to be greater in the case of women. Women generally are the ones who accompany children to school and old people to health centers.

Effects on institutions/organizations. Rural roads' improvement facilitates access to public services but also help the development/expansion of these services. For example, it can be expected that it will be easier to build a school in an area where transport conditions have been improved. Similarly, bringing access should facilitate the development of private activities (banks, providers of equipment, etc.). Another direct effect is the development of road rehabilitation and maintenance enterprises.

Effects on environment. One possible negative effect of rural roads' programs is that they may favor a more intensive exploitation of natural resources. Intensive agriculture has been found to increase soil degradation and erosion through the overuse of fertilizers and pesticides (Devres Inc., 1980). If productive activities are handled in an unsustainable manner, improved rural transport conditions may also affect the natural equilibrium of targeted areas. For example, bringing access to a forest zone may increase deforestation (Hammer and al., 2000).

Effects on participation. The effect of rural roads programs on community participation and social capital involve complex mechanisms for which empirical evidence is hard to establish (ADB, 2001). One first expected effect is that improved access brings remote households and individuals closer to the rest of society, allowing them to voice their needs and participate more easily in the decision-making process for public policies. However, these benefits could be diminished by some negative effects indirectly associated with rural roads' programs. For example, the fact that the poorest among poor rural communities may not benefit as much as the less poor segments of the population may increase inequities and ultimately increase the income-gap within rural communities. Also, permanent migration to more urbanized areas may reduce the capital social in the targeted communities. Finally, communities may be negatively affected by the introduction of, or greater exposure to, new values brought from the outside, thanks to the improvement of access (Devres Inc., 1980). It is important to note that these possible effects are speculated but that none has been formally reported in the literature.

Effects on safety and security. The effect of improved rural transport on security is also complex and ambiguous and has not been empirically validated. While benefits in terms of road safety may be one of the most obvious positive consequences, improved access could also be thought to bring alcoholism and drug addiction to remote rural communities.

Evaluation Methodology

Impact evaluation is based on the "double-difference" methodology (see Box 6). For each road segment improved under the program, a "control road segment" sharing similar characteristics except the fact that it was not intervened, was selected. [16]

[16] A shortlist of possible "control road segments" was first established, based on the following three conditions: (i) be a type of road similar to the intervened road; (ii) not being scheduled for rehabilitation; and (iii) being independent from the intervened road so that no "spillover benefits" can occur. The final

In the case of the 2006 evaluation, selected road segments included rural roads but also NMT tracks. Populations living nearby the improved and control road segments were then surveyed. Survey questionnaire tried to capture households' socio-economic characteristics, human capital and productive activities, as well as availability of social and economic infrastructure, access to public and private services and presence of key State programs. 108 indicators, classified in 15 categories, [17] were included in the questionnaire.

Box 6: Double-Difference Impact Evaluation

The double difference methodology is a common quasi-experimental technique used to assess the impacts of the intervention of a program. It consists in comparing infrastructure (roads in this case) with and without the intervention of a program, both before and after the end of the project. The difference between the differences (before and after) is then the only difference attributable to the project, and therefore is a good measurement of the impact of the project. This methodology is a second-best but more practical option to assess the outcomes of a project, since the ideal way is to calculate a project's impact is an experimental, randomized design in which interventions are applied to random groups, and withheld from the rest (or the control group). Any difference in the post-program treatment and control groups is then attributable to the project intervention. Since the project target areas have already been selected ex-ante on the basis of their potential, an experimental design would be biased and therefore not possible.

The use of the double difference methodology implies to conduct a baseline study on an ex-ante basis, before conducting the final impact evaluation study ex-post. The quality of the questionnaire is essential. Similarly, the control group has to be chosen carefully as it must not be linked to any aspects of the project and at the same time must share the same characteristics than the treatment group. The methodology relies on the assumption that all time-variant factors that differentiate the treatment and control and controlled for.

The 2006 evaluation distinguished between roads that were improved between 1998 and 2003 ("generation 2000") and roads improved between 2004 and 2006 ("generation 2004"). This distinction allowed differentiating between short-term impacts (noticeable between 0-2 years after road improvement) and mid/long-term impacts (noticeable between 2-8 years after road improvement).

For the purpose of the 2006 evaluation, a panel of 3,763 households was constituted, in 13 *departamentos*. This panel includes 2,061 households surveyed in 2000, minus 688

control road was selected based on the following additional considerations: (i) road length; (ii) size and characteristics of neighboring cities, villages and communities; (iii) climatic and agriculture environment; (iv) main function of road; (v) socio-economic characteristics of population; (vi) public investment programs.

[17] (1) transport conditions; (2) access to public services; (3) access to private services; (4) productive activities; (5) income; (6) expenditures; (7) employment; (8) migration; (9) gender; (10) institutions; (11) environment; (12) participation; (13) safety; (14) poverty/living standards; and (15) households' perceptions.

which were lost, plus 2,390 households interviewed in 2004. Ultimately, 85 percent of these households could be contacted and surveyed (1,218 for 2000 and 1,965 for 2004). [18]

Table 9: surveyed households' distribution per region

Departamento	generation 2000	generation 2004
Amazonas	0	0
Ancash	127	194
Apurimac	122	207
Arequipa	0	68
Ayacucho	94	116
Cajamarca	302	108
Cuzco	126	261
Huancavelica	103	197
Huanuco	81	182
Junín	36	257
La Libertad	0	0
Lima	0	0
Madre de Dios	49	46
Moquegua	0	0
Pasco	35	94
Piura	0	0
Puno	55	145
San Martín	88	90
TOTAL	**1218**	**1965**

GRADE classified the various effects of the program, depending not only on the intensity of the effect, but also on its statistical significance (standard deviation). This is an important improvement to the methodology used by *Instituto Cuanto* for the first two impact evaluations, since, in these, the intensity only was considered.

Finally, it should be noted that some of the lost households of generations 2000 and 2004 are likely to have migrated to other areas. The program may have indirectly contributed to their migration by facilitating transport, and some of these households may have seen their situation improved as a result of their migration to more productive areas. Since these households could not be surveyed, these effects are not considered in the current evaluation and, as a result, program's overall benefits may be underestimated.

Results from the 3rd impact evaluation

Impacts with statistical significance (at least at 20 percent) observed between 2004 and 2006 include the following:

Effects on transport conditions. Results confirmed that the improvement of road conditions had a significant and immediate impact to reduce travel times. This improvement also resulted, though in a differed manner, in an increase of transport use

[18] However, this proportion varies significantly with *departamentos*: less than 70 percent of households could be found in the department of Ayacucho, Pasco and San Martin.

(traffic and transport services frequency). The traffic of lighter vehicles (cars, microbus), which are likely to be more sensitive to road conditions, was particularly increased. There is also evidence that vehicle maintenance costs were reduced and, therefore, all transport service providers benefited from the program through a reduction of their operating costs. The ultimate effect on the pricing of transport services is more mixed: on the one hand, transport prices for car passengers dropped in a very significant way; on the other hand, prices for goods transported by heavier vehicles (microbus, bus and trucks) increased significantly. The drop in car transport prices might be interpreted by the combination of decreased operating costs with increased competition arising from increased traffic. For heavier vehicles (bus, trucks), rehabilitation standards (unpaved rural roads) may not have been a sufficient incentive to increase traffic which could have increased competition and, ultimately, lead to a reduction of transport prices. In addition, the truck industry is well-known in many countries for its sometimes monopolistic behaviors which could explain why the reduction of operating costs was not transferred to users of transport services. The net benefit for rural communities living nearby roads rehabilitated under the program may still be positive since the bulk of traffic increase comes from cars for which transport costs have decreased significantly.

Table 10: key effects on transport conditions (double-difference, percent)

Effect	Generation 2000	Generation 2004		
		Total	Rural Roads	NMT Tracks
Travel times	-12	-53 (*)	-30	-58 (o)
Traffic				
Cars	+132 (*)	+106		
Microbus	+52	+61		
Bus	+185	+119		
Truck	+31	+66		
Transport services frequency				
Cars	+115	+2		
Microbus	+138 (*)	+51		
Bus	+163	-92		
Truck	-93	-78		
Transport prices for passengers				
Cars	-78 (**)	+13		
Microbus	+22	-14		
Bus	-31	+104		
Truck	-61	+24		
Transport prices for goods				
Cars	-18	-15		
Microbus	+121 (**)	-3		
Bus	+114 (*)	-23		
Truck	+386 (***)	+102		
Vehicle maintenance costs	-44 (*)	+26		

(o) significant at 20 percent; (*) significant at 10 percent; (**) significant at 5 percent; (***) significant at 1 percent;

Effects on access to social services. Results confirmed the effect of improved transport conditions on improving access to education and health services. Primary school enrollment rose significantly in the case of roads rehabilitated before 2003. A similar

effect was observed for secondary schools in the case of roads rehabilitated between 2004 and 2006. Important gender differences were also reported: a very significant and immediate effect was observed in the case of girls attending primary schools, while a similar effect was observed for boys but in the case of secondary education. These results are consistent with the interpretation proposed in the literature that girls are more sensitive than boys to sound transport conditions to go to school because of the increased security they ensure. On the other hand while boys might be relatively indifferent to improved transport conditions to go to nearby primary schools, they should be more sensitive to them in order to access secondary schools requiring longer and, possibly more hazardous, traveling. Another hypothesis is that the returns to primary school are high enough to justify paying the cost of traveling to school, but the returns to secondary schools fall relative to the cost of transportation, thus, on the margin, lowering the cost of transport with help to align the cost of transport with the benefits from secondary schooling. Why this may be different for boys and girls may be explained by the fact that, on average, returns for schooling for a girl are lower than that for a boy, given some social discrimination toward employed women or some other reason. Only rural roads seem to play a role in providing improved access to education, while NMT tracks have little impact in this regard and seem to play a different function (see below). Finally, and although these results seem less statistically significant, a decrease of teacher absenteeism was reported in the project areas. Regarding access to health services, a very strong decrease in the number of young children affected from illness or accident was reported among the rural population having access to improved NMTs. This suggests that the access of women, mothers of young children, to health centers was facilitated by improved transport conditions.

Table 11: key effects on access to social services (double-difference, percent)

Effect	Generation 2000	Generation 2004		
		Total	Rural Roads	NMT Tracks
% school enrollment for children				
Age 6-11	+2.8 (*)	+1.4	+2.6	-3.0
Age 12-18	-1.6	+4.2 (*)	+6.6 (**)	-3.7
% school enrollment for boys				
Age 6-11	+4.4 (**)	-3.7	-3.5	-3.8
Age 12-18	-4.0	+7.0 (**)	+9.7 (***)	-0.6
% school enrollment for girls				
Age 6-11	+0.6	+5.3 (***)	+6.7 (***)	-1.5
Age 12-18	-1.2	-0.3	+1.2	-5.7
% people suffering from illness or accident				
All age	-3.3	-2.5	-3.8	+2.1
Age 0-5	-2.9	-8.1 (*)	-6.8	-12.9 (*)

(o) significant at 20 percent; (*) significant at 10 percent; (**) significant at 5 percent; (***) significant at 1 percent;

Effects on employment. NMT tracks' improvement was found to have a significant and short-term impact on employment. However, these new jobs mostly seem to come from unpaid family workers and mostly belong to the agriculture and forestry sectors. One interpretation could be that improved transport conditions allow easier access of other family members (women, children) to cultivated areas where they can therefore

contribute to productive activities. Thus, NMT tracks seem to create employment opportunities that should help raise households' income, but mostly under the most informal types of employment relations (unpaid family work). On the other hand, the effect of rural roads investments is different: they seem to helping rural populations move from informal jobs (unpaid family workers) to formal ones (private workers and public employees). It could be interpreted as a facilitated access of rural workers to more urbanized areas with greater employment opportunities in the formal sector. Better roads might also facilitate the development of public services in rural areas, explaining the increase of the proportion of public employees (e.g. teachers). Job opportunities created under the micro-enterprises' program to ensure routine road maintenance might contribute to that effect. Another feature is the decrease of cattle breeding activities which may be interpreted as a modification of households' strategy for savings assets as a protection against possible future adverse events (see below).

Table 12: key effects on employment (double-difference, percent)

Effect	Generation 2000	Generation 2004		
		Total	Rural Roads	NMT Tracks
Employment situation				
Dependent	+0.1	+0.5	+0.7	+0.2
Independent	+1.1	+0.0	-3.0	+8.8 (*)
Unemployed	-0.3	+0.3	+0.3	+0.5
Non active	-1.1	-1.0	+1.8	-9.0 (**)
Employment category				
Public employee	+0.3	+1.1 (*)	+1.4 (*)	+0.2
Private employee	+0.7	-0.4	-0.2	-0.9 (o)
Public worker	+0.6	+0.3	+0.3	+0.7
Private worker	-3.2 (***)	+1.0	+3.6 (*)	-4.0 (***)
Farmer/Fisherman	-1.6	+1.8	+1.9	+1.2
Other independent worker	+2.1	-1.4	-0.7	-3.2
Unpaid family worker	+1.5	-2.5	-6.0 (**)	+8.4 (*)
Productive activity				
Agriculture/Forestry	+1.6	+2.0	-0.7	+9.7 (*)
Cattle breeding	-1.8	-2.3	-1.2	-5.7 (o)
Commerce and services	-0.5	-0.4	-0.4	+0.1
Others	+0.6	+0.1	+1.3	-3.3 (o)

(o) significant at 20 percent; (*) significant at 10 percent; (**) significant at 5 percent; (***) significant at 1 percent;

Other effects on agricultural and forestry activities. Results show that improved rural roads helped increase the cultivated area to an important extent. However, the net agricultural income per area was found to decrease, though results are significant at only 20 percent. One proposed interpretation is that cultivated products were locally consumed and that overproduction may have resulted in a drop of prices. Regarding NMT tracks, a limited reduction of cultivated area was observed (significant at only 20 percent), as well as a very important drop of expenditures per cultivated or forestry area. This drop is most likely due to the increased involvement of "free labor force" (unpaid family workers). The reduction of cultivated area might be explained by the increased possibility for households to focus on more productive areas, thanks to better transport conditions. An important effect was also found on the price of irrigated land in the case of rural roads.

Better motorized transport conditions might increase the possibility for more mechanized, intensive agriculture, resulting in a greater attractiveness of irrigated land. However, in the long-term (generation 2000), this effect does not seem to sustain. Another long-term effect found is the reduction of horses owned by rural households. The impact of better roads on the traffic of motorized vehicles may, in the long-term, reduce the need for animal-based transport. Finally, in the case of rural roads, it seems that households had a better access to credit services (as measured by the number of applications). The impact on the households who actually got a credit is, however, not statistically significant.

Table 13: key effects on agricultural/forestry activities (double-difference, percent)

Effect	Generation 2000	Generation 2004		
		Total	Rural Roads	NMT Tracks
Cultivated area	+10	+10	+22 (*)	-15 (o)
Expenditures per cultivated/forest area	-31.2 (o)	-3.7	+1.5	-62.3 (o)
Net income per cultivated/forest area	+12.3	-24.0	-57.6 (o)	+88.2
Irrigated land value per area	-52 (o)	10	+41 (o)	-16
Dry land value per area	-5	-17	-17	-26
Owned horses	-50 (**)	+9	+20	0
Households who asked for a credit and received an answer (negative or positive)	-4.7	+12.8 (**)	+15.0 (**)	0.0
Households who received a credit	-1.0	+1.2	+2.1	-1.3

(o) significant at 20 percent; (*) significant at 10 percent; (**) significant at 5 percent; (***) significant at 1 percent;

Effects of income and poverty. Evaluation shows a strong, short-term and significant positive impact on households' income for NMT tracks. On the other hand, households living nearby "generation 2000" roads seem to have undergone a limited reduction of their income. This result should be nuanced (i) by the fact it is significant at only 20 percent, (ii) because the 2004 evaluation reported an increase in income so that the net benefit may still remain positive, and (iii) by the fact that income from people who migrated are not taken into account. In terms of composition of households' income, a sharp decrease in revenues from cattle breeding, as main productive activity of rural households, was observed. As reported in the literature, this diversification could be explained by the fact that households have more confidence in the future (and in the sustainability of transport conditions' improvement) so that they invest less in buying cattle (generally considered a saving behavior). It also seems that the significant income increase for population benefiting from improved NMT tracks comes from a diversification of productive activities outside subsistence agriculture (in petty commerce and other services). In terms of impact on poverty (national definition), a significant short-term increase of non-poor was observed for NMT tracks. This suggests that this type of basic transport infrastructure alone can make a strong difference for the most remote communities, by bringing them access and allowing them to trade their products in local markets. On the other hand, the poverty effect of rural roads' investments is less obvious (results for generation 2000 even suggest that, in the long-term, extreme poverty increases, possibly from as a consequence the migration of the "wealthier households"). One interpretation should be that rural roads alone, despite their other benefits on

bringing access to social services, are not sufficient to have a noticeable impact on poverty and that a combination of rural roads with other types of investments (e.g. rural infrastructure) is needed to overcome possible threshold effects. This conclusion reinforces the relevance of introducing a "rural infrastructure pilot" in the follow-on operation (Decentralized Rural Transport Project). Indeed, other studies conducted in Peru[19] reported evidence that impact on rural households' income is greater when rural transport is combined with other rural infrastructure interventions ("bundling benefits").

Table 14: key effects on income and poverty (double-difference, percent)

Effect	Generation 2000	Generation 2004		
		Total	Rural Roads	NMT Tracks
Per capita monthly income	-9.3 (o)	+9.5 (o)	+6.0	+25.6 (*)
Net monthly income from main activity	-10.2 (o)	+1.6	+4.3	+4.4
from agriculture and forestry activities	+0.6	+3.0	-6.6	+13.0
from cattle	-81.4 (**)	-6.5	+8.6	-43.6
from commerce and services	-26.1 (o)	-1.7	+1.0	+4.6
others	+5.5	+16.1	+26.1	+10.1
Composition of total income				
from agriculture and forestry activities	+6.4 (o)	-3.1	-4.4	-0.3
from cattle	-2.6	+0.2	+1.9	-5.4
from commerce and services	-2.7	+1.6	+0.1	+6.7 (o)
others	-0.7	+1.4	+2.5	-1.1
Poverty rates (percentage points)				
Extreme poverty	8.1 (*)	-4.1	-4.2	-4.0
Non-extreme poverty	-1.8	+1.5	+3.4	-4.2
Non-poor	-6.1 (*)	+2.2	+0.5	+8.7 (*)

(o) significant at 20 percent; (*) significant at 10 percent; (**) significant at 5 percent; (***) significant at 1 percent;

Households' perception. Rural households and local stakeholders (mostly local leaders) were also surveyed to assess their perception of the program and how this perception evolved over time. Rehabilitation works for rural roads led to a strong and statistically significant increase of stakeholders' and households' satisfactory perception. Remaining dissatisfaction is mostly due to stakeholders' expectations that more roads or additional infrastructure need to be rehabilitated. Moreover, this positive perception is stable over time (for roads rehabilitated 3 or more years before), suggesting that road quality is sustainable over time (most likely as a consequence of the maintenance arrangements). The situation is different for NMT tracks where local stakeholders' perception seemed to deteriorate before and after rehabilitation, unlike for rural households for which it increased. This might be interpreted by the fact that local leaders – who may less use NMTs - would have preferred a higher-standard of transport infrastructure (rural roads) while households, as actual users, acknowledged the usefulness of NMTs. Maintenance activities were positively perceived for rural roads (micro-enterprises) but much less so for NMT tracks, which could also be a consequence of the fact that local stakeholders, unlike households using these infrastructure, reject the NMT rehabilitation and maintenance model. This could however also mean that the maintenance arrangements

[19] Escobal, J. and Torrero, M. – *Análisis de los Servicios de Infraestructura Rural y las Condiciones de Vida en las Zonas Rurales de Perú*, 2004.

for NMT tracks (rural roads committees) are less of an efficient and sustainable mechanism than maintenance arrangements for rural roads (micro-enterprises). Main reasons behind dissatisfaction expressed in a few limited cases regarding maintenance arrangements include micro-enterprises' insufficient presence and disorganization. Finally, benefits reported by households are grossly consistent with evaluation's conclusions summarized above: access to social services (education, health) is increased by a greater extent in the case of rural roads, while in the case of NMT tracks, the greatest impact is on employment opportunities (though access to social services is also mentioned).

Table 15: Local stakeholders' and households' perception of rural roads' activities (percent)

Effect	Generation 2000		Generation 2004					
			Total		Rural Roads		NMT Tracks	
	2004	2006	2004	2006	2004	2006	2004	2006
Local stakeholders' perception of rehabilitation works								
Satisfactory	79	76	67	77*	62	81***	84	60**
Non Satisfactory								
Use of less-quantity materials than needed	39	60*	27	45*	30	50*	0	36**
Use of less-quality materials than needed	44	50	28	55***	32	54*	0	57***
Some segments were not rehabilitated	24	85***	25	63***	26	69***	14	50*
Inadequate bridges	27	53**	30	45	34	46		43**
Other infrastructure missing	32	65***	40	65**	43	77***	14	43
Other reasons	20	8	18	18	19	8	14	36
Local stakeholders' perception of maintenance activities								
Satisfactory	72	74	69	69	68	75	71	47**
Non Satisfactory								
Microenterprise not working	17	68***	21	48***	27	50**	0	44***
Microenterprise disorganized	26	52***	10	44***	13	41***	0	50***
Microenterprises members								
Do not know about road maintenance	24	41*	12	28**	16	31	0	22**
Spend less time than needed	43	41	9	44***	11	53***	0	28**
Do not fulfill their contract	37	46	7	30***	9	28**	0	33***
Other reasons	26	18	24	28	27	25	15	33
Households' perception								
% benefiting from better transport	72	72	57	72***	60	74***	47	65***
thanks to road rehabilitation	62	69*	50	69***	54	71***	37	61***
Benefits associated with rehabilitation								
Better access to health services	64	72*	46	64***	49	64***	33	63***
Better access to education	50	64***	35	57***	38	57***	22	54***
Better access to markets	78	74	83	68***	85	69***	74	65
Better employment opportunities	55	55	35	57***	41	57***	14	56***
Reduced prices for goods	38	28***	18	26***	21	30***	5	11
Others	36	29*	17	20	16	20	21	17

(o) significant at 20 percent; (*) significant at 10 percent; (**) significant at 5 percent; (***) significant at 1 percent;

Results from 1st and 2nd impact evaluations

A summary of key conclusions from the first and second impact evaluations is presented in the table below. Conclusions are remarkably consistent between these two evaluations:

- Rural roads programs were found to have a strong and short-term effect on improving transport conditions (decreased travel times and travel costs, more reliable transport services) and on increasing traffic.
- A longer-term impact was found on improving access to social services (particularly health). In the case of the second evaluation, improved transport also led to increased security (higher number of police interventions).
- Better roads allowed improving some performance indicators related to the rural economy: livestock ownership increased, as well as farm prices, access to marketplace was facilitated, and a small positive effect was reported in terms of farmed land area, access to credit and diversification outside the agriculture sector. In terms of income, agricultural wages were found to increase and employment structure was slightly modified with greater diversification.
- An ultimate effect on reducing rural poverty was slightly found in the case of the 2004 evaluation, suggesting that this was a longer-term effect.

Table 16: summary of key results from the first and second impact evaluations

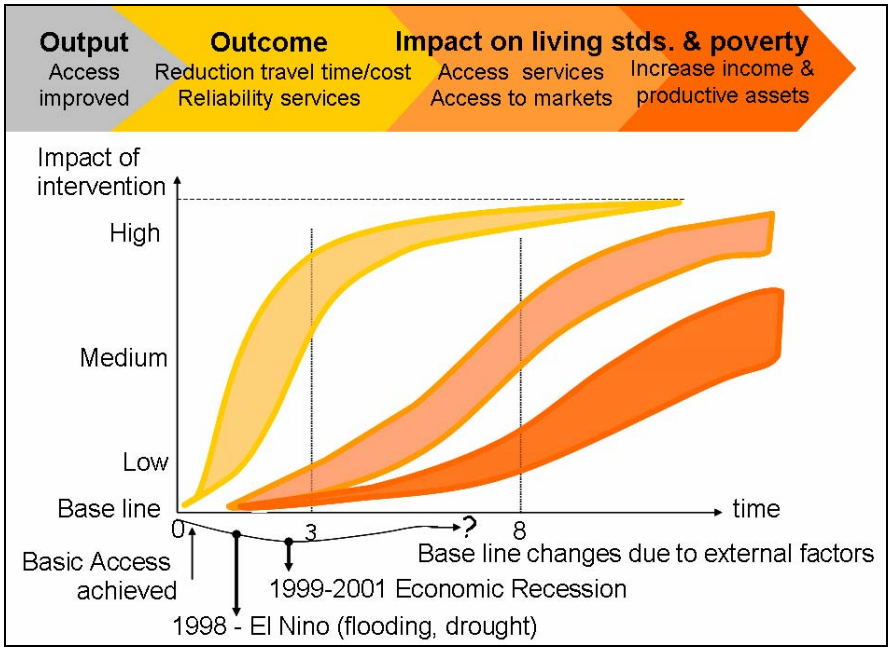
Sector	Indicator	Term	Hypothesis	2000 evaluation	2004 evaluation
Transportation	**Travel time**	**Short**	**Decrease**	**High**	**High**
	Traffic rate	**Short**	**Increase**	**High**	**High**
	Fare prices	**Short-Med.**	**Decrease**	**Moderate/High**	**Moderate/High**
	Freight prices	**Short-Med.**	**Decrease**	**High**	**High**
	Road closure	Short	Decrease	Moderate	Moderate
	Reliability public transport	**Short-Med.**	**Increase**	**Moderate/High**	**Moderate/High**
Access to public services	School Registered children	Med.-Long	Increase	Low	Low
	Health consultations	Short-Med.	Increase	Moderate	Moderate
	Judicial causes	Short-Med.	Increase	Null	Null
	No. of police interventions	**Short-Med.**	**Increase**	**N.A.**	**High**
Productive activities	Farmed land area	Med.	Increase	Low	Low
	Land value	Medium	Increase	Null	Null
	Productivity	Medium	Increase	Null	Null
	Livestock ownership	Medium	Increase	Moderate	Moderate
	Farm prices	**Short-Med.**	**Increase**	**High**	**High**
	Crop allocation	Med.-Long	Variation	Null	Null
	Market-oriented produce	Medium	Increase	Null	Null
	Access to marketplace	Short-Med.	Increase	Moderate	Moderate
	Access to credit	Med.-Long	Increase	Low	Low
	No & income of com. estab.	Medium	Increase	Low	Low
	Income structure	Med.-Long	Diversificat.	Low	Low
Employment	Type of occupation	Med.-Long	Variation	Low	Low
	Occupation category	Med.-Long	Variation	Null	Null
	Productive activity	Med.-Long	Variation	Null	Null
	Agricultural day's wage	Medium	Increase	Moderate	Moderate
	Labor force structure	Med.-Long	Variation	Low	Low

Migration	No. of migrants	Med.-Long	Decrease	Null	Null
	No. of returning migrants	Med.-Long	Increase	Low	Low
Poverty	Poverty levels	Long	Decrease	Null	Low
Institutions	No. of new institutions	Short-Med.	Increase	Moderate	Moderate
Road safety	No. of traffic accidents	Short	Increase	Low	Low
Environment	Use of land	Medium	Increase	Low	Null
	Use of chemicals	Medium	Increase	Null	Null
	Deforestation	Short-Med.	Increase	Low	Low

N.A.: Not Available

After the second evaluation was conducted, an interpretation was proposed that the dynamics of rural roads' programs' benefits would follow the following sequence: (i) short-term effect on improved transport conditions; (ii) mid-term outcomes in terms of improved human capital (through access to social services) and greater productivity of the rural economy (cheaper inputs, greater productive time, easier access to markets); and (iii) ultimate long-term impacts in terms of higher income and reduced poverty (see Figure).

Figure 6: proposed dynamics of rural roads programs' benefits (after 2nd evaluation)



Although the most relevant results are consistent, there exist differences between the conclusions from these two evaluations performed by *Instituto Cuanto* and the conclusions from the third evaluation performed by GRADE. These differences could come from methodological differences between the first two evaluations and the third one:

- The first evaluation looked at the impact of the Road Rehabilitation and Maintenance Project (1st phase of the Peru Rural Roads program, implemented in

1995-2000). This evaluation was performed without a baseline. One objective of this first evaluation was to provide a baseline for the 2nd Rural Roads project.

- The first and second evaluations were performed without assessing the standard deviation of results so that the statistical significance of the various effects is not known (only the intensity of these effects).
- The first two evaluations did not discriminate between rural roads and NMT tracks. In the first evaluation, no NMT tracks were taken into account and in the second evaluation, NMT represented one third of the sample but were not isolated in the analysis. The third evaluation included half of NMTs and half of rural roads and distinguished the impacts achieved for the two types of infrastructure.

These limitations impede a strict comparison between the results obtained from the three evaluations. However, they illustrate the learning process through which *Provias Descentralizado* has been constantly improving the evaluation methodology applied to assess its programs. For the follow-on project (Decentralized Rural Transport project), it is envisaged to continue refining this methodology. To this end, a partnership with the Bank research department (DEC) was constituted.

Annex 6. Stakeholder Workshop Report and Results

Stakeholder Workshop

A stakeholder workshop has been organized by *Provías Descentralizado* in Lima on March 13th 2007. The goal of this event, chaired by the executive director of Provias and attended by Provias's staff, provincial mayors, PRIs' managers, micro-entrepreneurs, representatives of associations helped by the LDW, as well as representatives of the IaDB and the World Bank, was to present the main results achieved by the project and its different components and the lessons learned for the future.

Different presentations were made, starting with a general one presenting the project as a whole, followed by more specific ones presenting the results of the different components of the project: road rehabilitation and periodic maintenance, road routine maintenance, Local Development Window, river transport improvement pilot, institutional strengthening and support to the decentralization process:

- Regarding road rehabilitation and periodic maintenance activities, the main results of the project were presented (e.g. km of roads rehabilitated) and it had been mentioned that this second road project had exceeded its initial targets for both components. Moreover, good road rehabilitation technical standards - in line with rural population needs - have been applied, leading to good road conditions when followed by proper rehabilitation.
- The routine road rehabilitation component was also presented. Once the general figures had been stated, one had emphasized on the efficient maintenance mechanism that has been implemented, relying heavily on micro-enterprises, and had stressed out the positive participation of women in these activities.
- The river transport improvement pilot and its results had also been presented, as well as the lessons learned during these five years, including: the need to work in a coordinate manner with regional and local authorities and the technical challenges of rehabilitating roads in a rain forest…
- Regarding the LDW, after a presentation of key results, speakers focused on two specific initiatives: a fishing farm in the Sauce lake and café producers in Pamashito, Lamas. Main lessons are that: (i) transferring resources is not enough and must be accompanied by a transfer of capacity; (ii) rural roads investments have a greater impact when this type of support to entrepreneurship activities is provided; (iii) participation of women has a positive impact on the efficiency of these activities.
- Finally, results on decentralization and institutional strengthening have been presented, with an emphasis on the incorporation of PRIs in MEF's public budget cycle and the fact that the decentralization of road routine maintenance activities have generated and increased local capacity.

On a more general basis, it was mentioned that the second rural roads project has greatly contributed to the positive evolution – at the country level – of the following aspects:

- Administrative management systems (VANTEC, SIGA and SIGAT);

- Interfaces with external information systems (interface SIGA-SIAF, interface SIGAT-other systems…)
- Incorporation of environmental studies in the road investment process
- Gender consideration and reconnaissance of the positive impact of women participation
- Strengthening of the road inventory (notably with the introduction of GIS)
- Support to the road classification strengthening process
- Contribution to the road hierarchization process

Despite the successful implementation of this project, some shortcomings still exist and will have to be addressed by Provías Descentralizado in the near future with the decentralized rural transport project:

- Provias lacks a management information system, as all directorates prepare and exchange information only if asked and not on a preliminary basis;
- Research and development activities will need to be performed, and to date, only one research on rural roads stabilizers has been done;
- In some regions, provincial corridors are not well articulated with regional corridors;
- Some confusion still exists regarding the definition of the beginning of a rural road.

Finally, the main results of the first two impact evaluation studies (performed in 2000 and 2004) were also presented to the different stakeholders and proper dissemination has been performed. Specific impacts, which are more detailed in this report, have been emphasized: the positive impact of the project on travel time and costs, employment and access to social services and economic and development opportunities.

This workshop contributed to the dissemination of the results of the second rural road project. All stakeholders agreed with the positive impacts of this project on the rural areas where it has been implemented. More importantly, a broad consensus exists on the various principles of the project and the positive impact it can produce: road rehabilitation with low-cost standards followed by proper maintenance delivered by micro-enterprises, participatory planning processes, decentralization of maintenance and planning, complementarities of these road investments with initiatives like the LDW, need to adapt the project to the specificities of the *selva* region…

Gender Assessment

A) Advantages of mainstreaming gender in the Project:

1. Time saving. Travel time represents a burden that women often are not aware of because they think it is linked to their condition as women. The traditional responsibilities of Peruvian rural women are multiple, ranging from managing households, caring for children and elderly, working at home, carrying water or woods or attending the mass. They need to balance their time between a variety of activities, more

than men do. Whenever women need to travel, they have to free up some time by leaving apart other responsibilities which might be more valuable to them, to their relatives or to their community. As a result, they tend to limit their mobility to the domestic space. The Project has reduced women-transport constrains by means of interventions in rural roads, which has allowed them to free some time, that they used in particular to engage in income-generating activities and participation processes.

2. Access and Inclusion. The Project contributed to ensuring women's access to resources, education, employment, markets and trade, administrative centers, public services and consultations, and to decision-making processes. In addition, children school attendance has increased and mothers were found to be able to take their children to health centers more easily. The Project also facilitated access of pregnant women to hospitals where they could give birth in safer conditions. Women working in the MEMVs could earn an income, allowing them to use public transport. Besides other social and economic problems, the low response to literacy programs among women comes from their scarce time availability, their lack of self-esteem and sometimes community censure. However, female micro-entrepreneurs were found to be firm believers of the importance of sending their children (girls and boys) to school. In many cases, these illiterate women were also reconsidering going to school themselves.

3. Empowerment. In low-income households in rural Peru, alcohol abuse by men and domestic violence on children and women are common. In this context, the participation of women in the MEMVs contributed to their empowerment: they were able to learn, to walk out their domestic environment, to participate in their communities' decisions, and to strengthen their capabilities. In one of the workshops that were organized during project implementation, some of the women stated: "I did not know that I had rights", thus illustrating the crucial importance of capacity training delivered to women, as well as of literacy teaching in order to support women empowerment and public participation. Evidence shows that impacts of women education are multiple, ranging from reduced fertility ratios, increased health for family members, to better household's cash management.

4. Control of the economic resources. Unlike men, women spend most of their earnings in nutrition and children's education. The Project contributed to increase women's earnings and, consequently, promoting women's control on domestic economic resources. In the long term, this empowerment can lead to tackle other problems like malnutrition or domestic violence.

5. Better quality of works, improved transparency in income management, moral, tidiness, and hygiene within the MEMV teams. As team members in the MEMVs, women proved to be generally more effective in ensuring the quality of the road maintenance works. They were better trusted by their male colleagues because they were perceived as being incorruptible. Women were found to be more reliable in managing income because they are more transparent with accounts' management and because they view corrupt practices more negatively than men. Women do a better job at negotiating work certificates payments. They are better organized to manage food and they do not consume

alcohol. Technically, they were more proactive in performing their work and they have been found to be more efficient than men for certain tasks (e.g. cleaning road drainage). Men stated that when women started working in their micro-enterprise, they quit drinking during work, the number and duration of pauses diminished, and micro-entrepreneurs became more responsible.

6. Women open the doors for the next generation. Most Peruvian rural women and men who have worked in MEMV have sent their children to school, to secondary school, and some of them to University in far away urban centers. Children whose mothers are MEMV workers dream about working when they are older, especially girls, who talk about working outside the domestic sphere.

B) Barriers overcome when mainstreaming gender in the Project:

1. The machismo behavior of some Peruvian men, prevented women from leaving their historically and socially assigned function and from interacting with other community members. In many cases, this was a key barrier that prevented women from working in a male-dominated environment, such as road maintenance. Many women did not see working in a MEMV as an opportunity to get a sustainable income and, consequently, a better life for them and their families. Furthermore, husbands were afraid of losing their "bread-winner" role.

2. Community's critics affected negatively women's willing to work on MEMV. The decency of women who work among men or who perform a male job is questioned within the community. Women determination to work in the MEMV conflicted with the traditions of their communities and they were discouraged to break the conventional unwritten rules.

3. Women Illiteracy. The low education of Peruvian rural women limited their access to salaried jobs and decision making levels. For that reason, the Project did not include literacy as a criterion for women to become micro-entrepreneurs.

4. Women conditions in the MEMV were more challenging than for men. (i) before joining the team in the morning, women had to complete domestic tasks such as preparing the daily food for the family; (ii) technical performance parameters were high, and they had to stand their colleagues mockery; (iii) single women had to undergo the reluctances of their communities, which discouraged them from working or joining MEMV, and (iv) whenever female workers could not find someone to take care of their children, they had to assign this task to their elder daughters, who had in some cases to give up her studies.

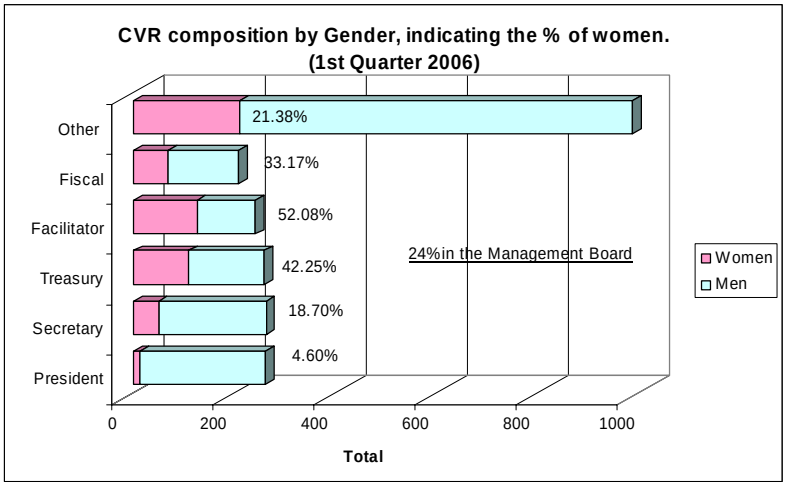
C) Gender assessment by component

NMT tracks improvement

This component came as an answer to the specific needs of the most rural peoples, identified through the consultation processes that took place during the preparation of the

program. Consequently, this component benefited directly low-income groups, and especially women who are the most frequent users of informal transport modes like NMTs.

Women participation quota in the Rural Roads Committees was set as 20 percent, both for the committees and for the remunerated teams. During the selection process 30 percent of candidates were women.



Impacts*:*

1. Rural women strengthening. Whenever these rural women exit their limited domestic sphere and participate actively in the decision making processes of their communities, their auto-esteem is increased and they gain respect in public spaces where new opportunities can emerge for them.

2. Women gain power and prestige within their communities and their families, which helps breaking up socio-historical stereotypes.

3. Working in the road maintenance teams allowed women to earn an income and become better integrated in the formal economy.

4. Attending trainings and capacity-building events allowed women to have access to technology and know-how.

5. Women became watchdog for the administration and improvement of rural roads. Women were found to care more about money and efficient use of resources and, many times, they were assigned treasury responsibilities (42 percent of female entrepreneurs were treasurers). In addition, some women were in charge of bringing the work certificates to local government for payment. Before showing these certificates, women also ensured that the quality of the works was up to the agreed technical standards. Women gained trust among their colleagues by doing a reliable job in managing funds and they gained respect by motivating the team to achieve quality in performing road maintenance works.

6. Women participation, both as members and as workers in the Rural Roads Committees, guaranteed that the socio-economic impact resulted in a better quality of life for their families and their communities.

7. Management capacity building has proven to be crucial to guarantee a long term impact on gender equity and on the sustainability of the gender know-how. Identifying female leaders and ensuring their participation in training workshops could have been further enforced.

Rural Roads Maintenance Micro-Enterprises.

Rural women, especially vulnerable women like widows and single mothers, have little opportunities to find a job in the Peruvian rural areas. Still, they have to feed their children (on average 3 to 7) and many times their entire family. The Project, through its need of intensive labor for the routine road maintenance activities, offered these women an opportunity to have a job and earn a sustainable salary for their household.

Table 17: Gender analysis of routine maintenance tasks

Tasks in the routine maintenance of rural roads	**Who does what?**		
	Men	**Women**	**Both**
1.Patching		X	X
2. Cleaning of platform		X	X
3. Cleaning of curbs		X	X
4. Cleaning of culverts	X		X
5. Cleaning of dips		X	X
6. Cleaning of ditches		X	X
7. Cleaning of riverbeds	X		X
8. Mending dry walls	X		X
9.Reparing&Cleaning wood bridges	X		X
10. Removing stones from slopes	X		X
11. Rubbing and cleaning		X	X
12. Traffic signs maintenance		X	X
13. Surveillance and control		X	X

At the beginning of the Project, some women (4 percent) became members of MEMVs mainly to replace their disabled or deceased husbands, during seasonal situations, in cases when men migrated to get better salaries, or when they had specific administrative skills. The affirmative actions integrated in the MEMV Operational Manual (dissemination of information targeting women, quotas, gender awareness workshops, etc.) helped reaching 24 percent of women participation.

Understanding barriers to women inclusion in the MEMV. Road works generally constitute a male environment, both, because of safety reasons and because it requires a physical effort; associated to masculinity. Besides, the idiosyncrasy of the communities and individuals of the areas where the MEMV were created prevented women from performing these masculine responsibilities and from working together with men in an open space like a road. Moreover, most husbands were reluctant to authorize their wives to work in MEMV, as men are supposed to be the breadwinner for the families, and both men and women were afraid about what others might think of them. Whenever women are asked about their feelings at the time they started working at the MEMV, all of them answered the same: they felt embarrassed.

Following a period of adaptation to the team and work environment, women felt capable of executing all the different tasks in the MEMV, although they recognized that some of the tasks required a physical strength. One of the concepts included in the workshops was the perception of quality of the works. This was important to avoid the traditional stereotype of giving more value to physical work than to the quality of the work, and consequently, underestimating women tasks over men's. Adjusting parameters to measure the performance of road maintenance activities, taking more into account quality standards, could have provided more evidence of the added-value brought by women participation in MEMVs.

On average, Peruvian women earn 23 percent less than men with the same level of education and experience. Unlike in other activities[20], female workers from the MEMV received the same salaries as men.

Mainstreaming Gender in the transport agency structure

The socio-cultural stereotypes and technical specifications associate the infrastructure sector, and in particular, the transport sector and its roads, to an environment merely masculine. At project start, Provias staff, regardless of whether they were women or men, or whether they were technical or administrative staff, was not conscious of the differences between men and women needs, nor about the benefits of a gender action plan.

The inclusion of the gender perspective in the agency was one of the keys for success of the Project. Gender-related activities were conducted in order to generate gender-awareness among the staff. 80 percent of the personnel of the *unidades zonales* (regional offices) attended the gender awareness workshops, 30 percent at the headquarters in Lima where a specific session was organized for the board of directors.

Local Development Window through a gender viewpoint

During the preparation of the LDW's local development plans, a Rapid Rural Poll was carried out in every community. This poll stipulates that the population sample must be

[20] Peru Poverty Assessment, The World Bank, Dec 2005. Female workers receive lower wages than their male counterparts, and the gender gap is larger for household heads than for other workers.

differentiated by sex and age firstly and, secondly by economic condition. As a consequence, women were represented in the participatory sessions, allowing their concerns and opinions to be voiced.

As an illustration, the *Sauce* Lake Project was mostly driven by women from the local community. 60 percent of these women were fisherwomen who, generally, shared the tasks with their husbands. The *Sauce* Lake had lost its productive levels of fish and women were among the most affected, because they could not feed their children any longer. Women presented to the LDW program, a project to better exploit the fishery potential of the lake. One of the impacts of the increment of tilapia production in the lake was that the area population was eating better. Teachers also reported that better fed children had an increased attention in school and did not fall asleep during class, as they used to.

Another example is in *Chicche*, *Huancayo*, where women chose to promote self-employment in processing and dyeing ovine wool. Women spinners have been trained in shear, post-shear, stocking and dyeing of the wool with natural dyes. The Spinners Committee of *Chicche* now consists of 80 spinners, 75 percent of which are women.

Impact on Participatory Processes, Democracy and Rural Institutions

At completion, a study was launched to evaluate the impact of the project on rural institutions, participatory processes and democracy. Key results are summarized below:

Impact on Civil Engagement. The learning process initiated by the project entailed not only road assets and resources management, but it brought out a number of new concepts and endeavors leading to tackle social exclusion, to promote social and political engagement of the rural peoples and to enhance fully represented participatory assemblies. Specifically, the project contributed to the decentralization process and to the promotion of social equality opportunities in rural Peru through: (i) supporting the creation of rural institutions (e.g. Rural Roads Committees, MEMV, productive cooperatives), (ii) promoting participatory decisions (prioritizing rural transport investments), (iv) facilitating strategic local planning and space management by the rural habitants (Rural Roads Committees, participatory sessions) (v) stimulating local leaderships (including among women) (vi) fostering productive initiatives and attracting public and private investment (through the LDW) (v) affecting collaboration between communities and their local MEMV (members performing free civil works for their communities and communities helping them in emergency situations like when rain provokes lack of transitability or when transporters inform about conditions in the road and give free rides to MEMVs).

Impact on Democracy. In the broader context of recent laws[21] which have increased participatory processes, the project facilitated democratic practices and reduced the cost

[21] i.e.: Law in transparency and access to public information, law of equity opportunities for women and men, law in participative budgeting, law in decentralization and municipalities, law in control and citizen

of rural stakeholders' participation through three key factors: rural integration, shortened distances and increased mobility alternatives.

Participation in Elections. In all of the departments where the project was implemented, participation in elections was increased by up to a 10%, (increase in Peru as a whole was 4%). This effect is even more noticeable at the provincial with participation in the project areas being above the provincial average, and in 3 cases, notably above. Noteworthy is the increase in female participation, which reached a pick of 13 percent in one department, and exceeded the increase in men's participation in all project areas.

Accountability of elected officials. Increased *revocatoria*[22] processes were observed in the poorest departments where the project was implemented. One could have expected that the project would have softened local conflicts and then, prompted a reduction in these processes by legitimizing local authorities and reducing conflicts. On the other hand, the "*revocatoria*" is a sign of participation that reveals interest in public matters and shows greater accountability of elected officials. Through "*revocatoria*", rural stakeholders feel empowered and have an opportunity to voice up their dissatisfaction.

New local leaderships. Management experience gained through project implementation was transferred to other areas of public management. In the 6 department surveyed, 82 cases showed that MEMV members gained public management positions. In one case, a PRI manager became president of the regional government.

Quechua sessions. To engage indigenous peoples, remote rural communities and women in representative participatory processes, some mayors delivered sessions in both Spanish and Quechua. Participatory budgets were sometimes disseminated in quechua, and several local governments realized that training sessions and trainers needed to be able to talk in quechua to guarantee monolingual inhabitants participation.

Impact on rural institutions. The project introduced a collaborative environment which provided incentives to mayors in order to seek for greater synergies. In a number of cases, networks of local governments were created. For example, in *Angaraes* province, an association of 5 mayors started meeting on a regular basis in order to identify their rural transport priorities in a concerted manner. In that same province, an association of 10 mayors finally decided to merge their priorities in a single road plan. In Ayacucho, 5 mayors agreed on common arrangements to ensure the maintenance of a rural road. Through the provincial road board created under the project, district mayors, provincial mayors and PRI staff got used to hold regular meetings on the definition and implementation of rural transport policies, and beyond on the definition of a joint vision for territorial development. For example, in *San Martin*, 3 districts coordinated to develop a tourism development program.

---

participation, . Since 1980 the age for the right to vote was reduced to 18 years old for all citizens (i.e.: illiterate, women and indigenous peoples). Women vote in Peru since 1956.

[22] "*Revocatoria*": According to the citizens' control and participation law, an elected candidate can be revoked when 25 percent of the municipal elections registered sign it.

Strengthening of local governments. In provinces with advanced PRI, they were found to provide significant support to mayors. In particular, PRI provided them with technical assistance to help organize better their municipality or to prepare bids for road investments (others than those included in the project). In one case, a mayor wanted to fully absorb the PRI inside the organization of the municipality in order to benefit from its expertise and qualified human resources.

Increased transparency in the use of resources. As a result of the project, mayors and their team started providing more information to local stakeholders about accounts status and resource use. Some municipalities invited MEMV to be part of participatory budget sessions or to Local Coordination Councils[23]. Transparent bidding processes were implemented, improving efficiency and reducing discretionary behaviors. Predictable contractual relations are highly regarded by MEMV because, after the transfer of responsibility to local governments and PRIs, their sustainability depends on the efficiency and fairness of these procurement processes.

[23] *Consejos de Coordinación Local* (CCL): local councils representing civil society organizations in the participating processes to reach agreements with the governing team. The CCL represents entrepreneurs, unions, farmers, women, youth, indigenous, businessmen and community based organizations.

Annex 7. Summary of Borrower's ICR

ANTECEDENTES

Según cifras oficiales, a finales de 1995 el Sistema Vial del país[24] se encontraba conformado por un total de 78,043 Km., de los cuales 46,909 Km. (60 %) correspondía a la red vial vecinal constituida por las vías de carácter local que unen a poblaciones pequeñas entre sí, aunque se estima que la longitud real sería mucho mayor debido a la dinámica constante en ese nivel.

Esta red de caminos vecinales se encontraba en una crítica situación debido a factores propios de construcción y climatológicos, así como a la falta de mantenimiento vial [25], especialmente después de quince años de violencia sociopolítica que asoló al Perú, deteriorada entre un 80 % a 100 %, caracterizada por una infraestructura deficiente, inexistente o inadecuada; debilidad institucional estructural en el ámbito local; e inexistencia de recursos financieros para el desarrollo del transporte rural.

En este contexto, en 1995 se crea el Programa Caminos Rurales, ejecutado por el PROVÍAS DESCENTRALIZADO, antes PROVÍAS RURAL, del Ministerio de Transportes y Comunicaciones, desarrollando sus actividades en doce de los departamentos más pobres del país: Ancash, Apurímac, Ayacucho, Cajamarca, Cusco, Huancavelica, Huánuco, Junín, Madre de Dios, Pasco, Puno y San Martín.

Durante la primera etapa (1995 – 2000), el Programa estuvo orientado a recuperar y mejorar las condiciones de transitabilidad de la red vial rural a través de acciones de rehabilitación y mantenimiento de caminos vecinales y departamentales, pavimentación de calles en centros poblados y mejoramiento de caminos de herradura, con el fin de incrementar la accesibilidad e integración de los pobladores rurales más alejados a servicios sociales básicos y a mercados. En esta primera etapa se intervino en 96 provincias y 380 distritos en estos departamentos en situación de extrema pobreza, logrando importantes impactos viales, económicos y sociales.

Esta intervención, que constituyó una respuesta apropiada a la situación descrita, permitió la rehabilitación y el mantenimiento rutinario de más de 11 mil Km. de caminos vecinales, y mejoramiento de más de 3 mil Km. de caminos de herradura[26], por un monto total de US $ 264 millones.

Dos aspectos adicionales son necesarios mencionar sobre esta etapa; por un lado, que las intervenciones en la vialidad rural no respondieron a demandas dispersas y aisladas, sino que se planificaron en Talleres Participativos de Priorización, con intervención de Alcaldes Provinciales y Distritales, y teniendo como unidad mínima de planificación la provincia; por otro lado, con el fin de preservar las inversiones realizadas, el Programa desarrolló inmediatamente después de la rehabilitación, en el marco del concepto del ciclo del proyecto, un sistema de mantenimiento rutinario sostenible con la participación de la comunidad organizada que vive a lo largo del camino,.

Los efectos de esta intervención fueron la constatación de una reducción de costos de operación y transacción, generación de empleo, mejoramiento del acceso a los servicios sociales básicos,

---

[24] *En términos generales, el sistema Vial del país está clasificada en tres categorías: La Red Primaria o Nacional, Red Secundaria o Departamental y la Red Terciaria ó Red Vial Vecinal ó Rural*

[25] *"Instituto Cuánto, "Evaluación económica, social, ambiental e institucional del Programa de Caminos Rurales", Junio 2000.*

[26] *Los caminos de herradura constituyen las últimas "venas" del sistema vial que permiten integrar a los caseríos y áreas remotas con las carreteras vecinales, departamentales ó nacionales.*

desarrollo de los mercados, dinamización de las economías locales y regionales, y finalmente, un notorio incremento en el nivel de vida de la población rural.

Sobre la base de esta experiencia, se contrató un segundo préstamo con los Bancos BID y BIRF para el financiamiento de la segunda etapa de Caminos Rurales (2001 – 2006), cuyo propósito no sólo fue consolidar las acciones iniciadas durante la primera etapa, en cuanto a mejorar la transitabilidad de los caminos rurales, sino que además su objetivo principal estuvo orientado a *contribuir a la superación de la pobreza y el desarrollo rural y mejorar el nivel de vida de las comunidades rurales en el Perú, mediante la consolidación de la transitabilidad de las vías rurales, con participación financiera e institucional de los gobiernos locales,* participación del sector público, privado y sociedad civil, *y con equidad de género*.

Caminos Rurales II ha sido una respuesta técnica, económica y política para encarar los niveles de pobreza que se presentan con mayor énfasis en las zonas rurales, buscando mejorar los niveles de vida de la población rural, impulsando la descentralización de la gestión vial, el desarrollo de las capacidades técnicas e institucionales de los Gobiernos Locales, en el marco de un modelo de intervención con enfoques innovadores que vinculan las intervenciones en la vialidad con el desarrollo rural, y son además, participativos, inclusivos y sostenibles. Su intervención en materia vial se vio complementa con acciones de fortalecimiento institucional y de promoción de actividades económico-productivas, poniendo especial énfasis en la sostenibilidad del mantenimiento, el desarrollo institucional y la transferencia de la gestión vial rural a los Gobiernos Locales

Esta etapa se caracteriza por una óptima ejecución física y financiera, sobrepasando las metas trazadas inicialmente en la mayoría de los componentes, así como de sustanciales logros e impactos viales, socio económicos y ambientales, con los consiguientes reconocimientos, al haberse conseguido el objetivo principal previsto.

Sobre todo se ha logrado una mejora sustancial en la vida de los pobladores gracias a la intervención en los caminos rurales (rehabilitación, mejoramiento y mantenimiento), que ha devuelto la transitabilidad de las vías, ha mejorado la accesibilidad de la población a servicios sociales básicos, ha mejorado la integración y articulación a mercados, y ha vinculado la vialidad con el desarrollo rural bajo un enfoque territorial.

OBJETIVOS ESPECÍFICOS

Viales y Funcionales: mejorar y consolidar la transitabilidad de los caminos rurales y mejorar la conectividad y accesibilidad de la población rural

Institucionales: ttransferir la gestión de los caminos rurales a los gobiernos locales, previo desarrollo institucional y fortalecimiento de sus capacidades para lograr una gestión eficiente y sostenible.

Financieros: asegurar la sostenibilidad financiera del mantenimiento de los caminos rurales con participación de los gobiernos locales

Económicos y sociales: vincular el camino rural rehabilitado y Mantenido con la generación de Capacidades locales para desarrollar Proyectos productivos y buscar complementariedades con otros Proyectos de infraestructura económica

MODELO DE INTERVENCION

Caminos Rurales II constituyó una respuesta innovadora y creativa a las demandas más urgentes de la población mediante la propuesta de un modelo de intervención acorde a la realidad del

ámbito rural, con peculiaridades poco entendidas y atendidas hasta entonces. Propuso nuevos enfoques, procesos y proyectos, como la descentralización de la gestión vial rural, la aplicación de procesos participativos en la planificación y ejecución de sus intervenciones, el enfoque de género en algunos componentes y actividades del Programa, la promoción de proyectos productivos mediante la Ventana para el Desarrollo Local, entre otros, ubicándolo como un Programa pionero en temas complementarios y que potencian su objetivo principal: la integración y acceso de la población rural.

Es participativo y generador de empleo en el medio rural; es sostenible desde el punto de vista institucional como financiero; es descentralizado y complementario con iniciativas productivas asociadas al camino; interviene en los departamentos más pobres, y las intervenciones son planificadas por los alcaldes de una provincia, teniendo en cuenta el ciclo completo del proyecto, desde la selección de prioridades hasta la operación y mantenimiento de las vías intervenidas; utiliza tecnología apropiada al volumen de tránsito existente así como a las capacidades locales disponibles.

Considera a la Provincia como ámbito de gestión del transporte rural, reconociendo su jurisdicción y competencia, asegurando su compromiso con las actividades a desempeñar y su apropiación de los objetivos del Programa; todas las actividades de inversión son realizadas por TERCERIZACION: con empresas y consultores independientes locales y regionales; promueve la generación de empleo por la mezcla tecnológica que utiliza, caracterizada por elevadas normas técnicas en la rehabilitación que requieren el uso de maquinaria pesada, mientras que el mantenimiento rutinario se realiza con herramientas de mano.

Es incluyente, por que incorpora a los sectores más pobres y vulnerables de la población a mejores condiciones de empleo e ingresos sostenibles; promueve la equidad de géneros en el acceso al trabajo rural (23 % de socias de las microempresas de mantenimiento vial constituidas durante la segunda etapa son mujeres); es descentralista, en respuesta a la realidad del país y al desafío que representa la diversidad de preferencias de comunidades con entornos físicos y sociales muy distintos entre sí.

Impulsa la generación de capacidades en el ámbito de la provincia a través de la creación de los Institutos Viales Provinciales (IVP), que son la organización especializada que asume la gestión del transporte en su ámbito. Tiene un enfoque evolutivo, ya que la dotación de infraestructura sostenible implica desarrollo institucional, cuya instalación y maduración conlleva a la consideración de horizontes temporales amplios, de mediano y largo plazo.

Así, el modelo de intervención descrito, al incrementar la capacidad y recuperar la transitabilidad de las redes viales prioritarias, genera los siguientes impactos: permite integrar al área rural, reducir costos logísticos, promover la movilidad de bienes y personas, favorecer accesos a servicios públicos y oportunidades económicas, desarrollar ciudades intermedias y apoyar el desarrollo de actividades productivas y sociales que redundarán en la aparición de economías de escala y aglomeración, es decir la creación y desarrollo de mercados.

METAS FISICAS ALCANZADAS

La segunda etapa se caracterizó también por haber superado las metas físicas previstas en rehabilitación de caminos vecinales y mejoramiento de caminos de herradura. Una de las razones fue el haber contado con otras fuentes financieras, dando lugar a logros adicionales importantes orientados a potenciar las intervenciones en la vialidad rural, como se muestra en el siguiente cuadro:

CATEGORIA (1)	Unidad de medida	RESULTADO FINAL ESPERADO	EJECUTADO 2001- ABRIL 2007	%
A. Inversión				
A1 Rehabilitación caminos rurales y secundarios				
Rehabilitación caminos vecinales	Km	3,660	5184 *	142%
Rehabilitación caminos secundarios	Km	300		
		240		0%
A2 Mantenimiento periódico	Km	6,500	8,900	137%
A3 Mantenimiento rutinario	Km	14,525	15,774	109%
A4 Mejoramiento caminos de herradura	Km	3,300	3,612	109%
A5 Piloto de gestión vial provincial				
Rehabilitación caminos vecinales	Km	158	158	100%
Supervisión	Km	158	158	100%
Mantenimiento caminos vecinales	Km	158	158	100%
Estudios de caminos vecinales	Km	158	189	120%
A6 Piloto de transporte multimodal				
Estudios de caminos vecinales	Km.	125	227	181%
Estudios de caminos herradura	Km.	31	48	154%
Rehabilitación caminos vecinales	Km	125	124	99%
Mejoramiento caminos de herradura	Km	31	48	154%
Embarcaderos	Unidad	2	0	0%
Estudios complementarios : EISAR, PDPI, SEM	Estudios	2	2	100%
B. Estudios y Supervisión				
Estudios de caminos vecinales	Km	3,648	5,755	158%
Estudios de caminos herradura	Km	3,300	3,622	110%
Supervisión	Km	3,960	14,084	356%
C. Fortalecimiento institucional				
C1 Desarrollo de MEMV	MEMV	120	182	152%

* Se incluyen todos los contratos, se tiene 810 km en ejecución, se prevé concluiran en Junio.

Estudios de Caminos Vecinales: Se ha tenido un significativo logro en estudios, superando el 262% de ejecución en caminos vecinales y 16% en caminos de herradura, lo cual significa un mayor número de obras en cartera y por ejecutar, extendiendo la ejecución del programa e incrementando el número final de kilómetros rehabilitados. Asimismo también se presentaron las dificultades más resaltantes, como son los adicionales de los estudios debido al aumento de kilómetros, la ejecución ineficiente de los consultores y la demora en los plazos establecidos.

Rehabilitación y Supervisión de Caminos: La rehabilitación de 5,184 Km. de caminos vecinales, mejoramiento de 3,612 Km. de caminos de herradura, mantenimiento rutinario de 15,778 Km. de vías vecinales rehabilitadas en ambas etapas, el mantenimiento periódico de 8,900 Km. de caminos vecinales, entre otros, han permitido mejorar las condiciones de transitabilidad en 126 provincias, así como el nivel de vida a una población directamente beneficiaria aproximada de cuatro millones de habitantes, principalmente de las áreas rurales del país. Se ha logrado la rehabilitación de 4714 Km. en la segunda etapa, lo cual significa un 43% adicional a lo programado inicialmente. En cuanto al costo por Km. Rehabilitado, se obtiene un promedio final de 24.430 dólares, lo cual ayuda a optimizar la programación para una tercera etapa, con costos reales.

Así como se tuvieron logros, se presentan dificultades. Entre las principales se encuentran el atraso de las obras debido a la terminación de los estudios y la declaratoria de desierto en los procesos, lo cual genera la ejecución en periodos de lluvia trayendo como consecuencia el adicional de obras y mayores plazos de ejecución. Sin embargo**,** a pesar de esta problemática se ha obtenido eficiencia en la ejecución financiera, habiendo solo un 2.76% de incremento en el presupuesto de este componente producto de la diferencia de los adicionales y deductivos de

obra. Sobre este escenario, los concurrentes concordaron que este es uno de los componentes más exitosos, logrando beneficiar directa e indirectamente un aproximado de 3.500.000 habitantes, producto de los caminos rehabilitados.

Mantenimiento de Caminos: Respecto a este componente, se obtiene como resultado final el mantenimiento rutinario de 104.835 Km. superando en 91% la meta inicial, y 8.600 Km. en mantenimiento periódico de los caminos rehabilitados, sobre los 6.500 planteados como meta. En el mantenimiento rutinario, destacan la formación de microempresas de mantenimiento vial, las cuales generan puestos de trabajo para los pobladores aledaños a los caminos rehabilitados, los promotores externos y monitores, quienes se encargan de capacitar a los IVP y realizar el seguimiento del mantenimiento de los caminos realizado por las microempresas y el tercero, la transferencia de los recursos a los Gobiernos Locales. En cuanto al mantenimiento periódico es necesario destacar, que es importante su ejecución, ya que devuelve la transitabilidad inicial a los caminos producto del desgaste propio del uso vial, lo cual se trata de amilanar con el mantenimiento rutinario, el cual es perenne.

En este componente se presenta la problemática del cambio de modalidad en la contratación de las microempresas, ya que se tiene autonomía para seleccionar y contratar personas no calificadas, poniendo en riesgo la capacitación efectiva ya realizada. Para ello es necesario que cada Gobierno Local, establezca claramente sus bases, y los procesos de contratación, haciéndolos mas accesibles y claros a los microempresarios a fin de poder preservar el sistema existente.

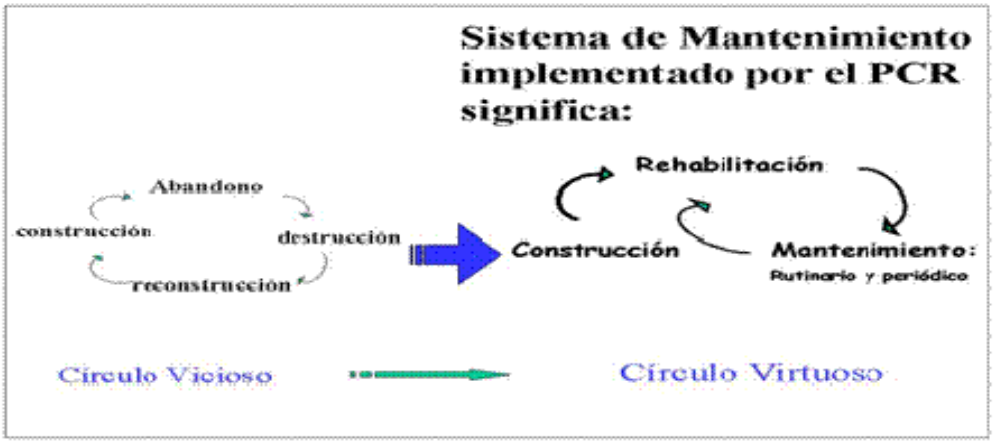
DESCRIPCIÓN Y LOGROS

CON RELACIÓN A LOS OBJETIVOS VIALES Y FUNCIONALES.-

"mejorar y consolidar la transitabilidad de los caminos rurales y mejorar la conectividad y accesibilidad de la población rural"

La rehabilitación de los caminos rurales consiste en una intervención de carácter eminentemente estructural que incluye la corrección de fallas mediante la reposición de la superficie de rodadura destinada a adaptar la plataforma a las necesidades del tránsito, así como la construcción de obras de arte y drenajes para asegurar una óptima transitabilidad. Comprende las actividades de Estudios, Obras y Supervisión. El costo promedio en conjunto es de $ 17,300.00 dólares por kilómetro. Se realiza a través de contratistas locales y regionales contratados mediante procesos de selección de acuerdo a ley.

En cuanto al mantenimiento de los caminos vecinales, tradicionalmente y por muchos años, las carreteras y caminos del país se caracterizaron por estar sumidos en el círculo vicioso de "construcción – abandono – destrucción – reconstrucción". Las inversiones en infraestructura vial rural desarrolladas por PROVIAS DESCENTRALIZADO, antes PROVÍAS RURAL, modificaron sustancialmente este panorama hacia un círculo virtuoso de "construcción - rehabilitación – mantenimiento", que se representa en el siguiente gráfico:



Para el sostenimiento de las inversiones y la transitabilidad de los caminos rurales, el mantenimiento es fundamental, ya que bajo las presiones combinadas del tránsito y del clima, en especial en el caso de los caminos peruanos, expuestos a los enormes desafíos derivados de nuestra condición de país andino, con elevadas pendientes y un clima agresivo, los caminos volverían rápidamente a su estado inicial y el esfuerzo e inversión que se les ha destinado se perdería, así como el enorme capital social generado en el desarrollo de la infraestructura.

Al garantizar la transitabilidad de la vía rural rehabilitada mediante el mantenimiento rutinario, se cuida a la vez la inversión realizada y el patrimonio vial del país; es decir, se trata de tener un sistema de caminos rurales bien integrado y fiable mediante la rehabilitación y mantenimiento de éstos y los enlaces fundamentales que los conectan, ya sea a la red vial departamental o nacional. Sin mantenimiento en el lago plazo, la transitabilidad de las carreteras se verán comprometidas y con ello una gran cantidad de servicios que impactan directamente en los niveles de vida de los pueblos se habrán distanciado de sus objetivos.

El sistema de mantenimiento vial comprende:

i) El Mantenimiento rutinario[27]**,** que consiste en intervenir, inmediatamente después del proceso de rehabilitación, y comprende la realización de una serie de actividades permanentes destinadas a garantizar condiciones de circulación, seguridad y transitabilidad satisfactorias durante todos los días del año. Este tipo de mantenimiento tiene el objetivo de ejecutar acciones rutinarias[28] y por lo general manuales para reparar el deterioro de la vía por el uso; es intensivo en mano de obra y utilización de herramientas y materiales de la zona, por lo que PROVIAS DESCENTRALIZADO ha diseñado un modelo que promueve la participación de entidades jurídicas, denominadas genéricamente "microempresas" de mantenimiento vial (MEMV), conformadas con pobladores de las localidades que interconecta la vía, propiciando su paso de la condición de beneficiarios (pasivo) a la condición de operadores (activo), con las implicancias en el empoderamiento de los pobladores y pobladoras rurales. El costo promedio de mantenimiento rutinario es de $850.00 dólares Kilómetro/año, dependiendo de la tipologización[29] del camino.

El mantenimiento vial rutinario desarrollado por PROVÍAS DESCENTRALIZADO descansa en cuatro ejes[30]:

---

[27] *MTC – PROVÍAS RURAL Manual de Operaciones del Proyecto – MOP*
[28] *MTC – Programa Caminos Rurales: "Manual Técnico de Mantenimiento Rutinario de Caminos Rurales. Año 2000.*
[29] *Estudio sobre la Gestión del Mantenimiento – **GEMA:** 6 tipos de caminos en sierra y 6 en selva.*
[30] *MTC–PROVÍAS RURAL "Buena Práctica Gubernamental de transitabilidad de los caminos rurales sostenible."*

a) *Terciarización de la actividad del mantenimiento de los caminos rurales*: el Programa promueve y contrata a microempresas de mantenimiento vial que están conformadas por miembros de la comunidad aledaña a los caminos rurales.

b) *Participación financiera de los gobiernos locales en el cofinanciamiento del mantenimiento rutinario de los caminos rurales rehabilitados,* para ello, el Proyecto ha desarrollado el mecanismo participación financiera de los gobiernos locales que asegura el financiamiento del mantenimiento rutinario de las vías rurales, garantizando por un lado, la sostenibilidad del mantenimiento rutinario y por otro, liberando de alguna manera la presión financiera que tiene el gobierno central en la materia.

c) *Gestión del mantenimiento desconcentrado y descentralizado*: el Programa desarrolla viene transfiriendo la gestión del mantenimiento de los caminos vecinales a los gobiernos locales desde el año 2003. Se ha promovido la creación de una institucionalidad en el seno de las municipalidades para que se encarguen de la gestión vial de los caminos rurales: el Instituto Vial Provincial (IVP).

d) *Transparencia en el uso de recursos y rendición de cuentas:* a través de la participación de los alcaldes y autoridades comunales en cada una de las etapas del proceso de rehabilitación y mantenimiento, así como en el proceso de transferencia de la gestión vial rural, se generaron mecanismos eficientes de transparencia y rendición de cuentas. En el futuro será conveniente incorporar en el directorio de los IVP a representantes de los usuarios de las vías rurales.

ii) El Mantenimiento Periódico, efectuado dentro de un criterio también preventivo, está destinado a reponer el desgaste propio del uso de la vía al término del periodo de vida útil de la rehabilitación, teniendo como objetivo evitar mayores deterioros debido a una prolongada exposición al tránsito vehicular y a las acciones del clima. PROVÌAS DESCENTRALIZADO, en el marco del enfoque participativo, ha ejecutado parte de este tipo de inversiones con la participación de Municipalidades Provinciales, mediante Convenios; otra parte se ejecutó a través de empresas contratistas. El mantenimiento periódico se ha realizado a través de empresas contratistas[31], a un costo aproximado de $ 2,700.00 dólares por kilómetro.

iii) El Mantenimiento de Emergencia o Extraordinario, es el tipo de mantenimiento orientado a asumir las actividades propias de eventos de la naturaleza como huaycos, derrumbes de mediana a gran magnitud, entre otros. En estos casos, la intervención es de manera conjunta entre la Municipalidad respectiva y la Microempresa de mantenimiento vial rutinario del ámbito. El tipo de intervención necesario depende del grado de deterioro que con el tiempo sufre el camino a causa de la acción agresiva de los factores a que está sometido.

Las microempresas de mantenimiento tuvieron acompañamiento profesional sostenido (técnico y empresarial) durante ambas etapas, lo que garantizó la ejecución del mantenimiento con calidad técnica. Se realizó con participación de contingentes anuales de Monitores, conformados por egresados y bachilleres universitarios, seleccionados de las Universidades locales [32]. Los Monitores, desempeñan su actividad en el campo en contacto directo con los socios de las microempresas, cumpliendo funciones de capacitación, asesoramiento, monitoreo y evaluación.

---

[31] *El mantenimiento periódico también fue ejecutado mediante Convenios con Municipalidades Provinciales y Distritales; en total 91 Convenios entre los años 2002 y 2003.*

[32] *De las especialidades de Ingeniería Civil, Economía, Contabilidad y Administración de Empresas. Se celebraron Convenios con Universidades locales, para que sus egresados, previamente seleccionados, desarrollen prácticas pre profesionales por un periodo de 6 a 12 meses*

En cuanto al mejoramiento de caminos de herradura[33], éste consiste en trabajos de remoción de obstáculos o restricciones y otras limitaciones para el uso adecuado de los caminos de herradura, así como la ampliación de la plataforma, construcción de obras de arte y pequeños tambos ó miradores para la utilización de medios de transporte no motorizados como peatonal, bicicletas, triciclos, carretas y animales de carga. La comunidad beneficiaria aporta con el 30 % del costo total mediante mano de obra no calificada y/o materiales de la zona. Se ejecuta mediante un Comité Vial Rural que representa la comunidad organizada, con asesoramiento técnico de una Organización No Gubernamental – ONG que opera en el medio promoviendo el desarrollo rural. El costo del mejoramiento de caminos de herradura es aproximadamente $ 2,150.00 dólares americanos, que incluye estudios y ejecución de obras.

Los impactos sociales del mejoramiento de caminos de herradura son enormes; no sólo contribuyen a una transitabilidad más segura, sino que ésta está dirigida especialmente a los sectores más vulnerables de la población, y por ende excluidas, como las ancianas y ancianos, niños y niñas, mujeres rurales. Además, la incorporación de las mujeres como obreras del mejoramiento del camino y con salarios en planilla, las empodera e incide, aún temporalmente, en el nivel de vida y bienestar de sus familias. Por otra parte, la comunidad organizada, representada a través del Comité Vial Rural – CVR, al participar desde la planificación de la intervención y luego como contratista de la obra, se apropia totalmente de los objetivos del proyecto, aportando la contrapartida local aún cuando es el sector más pobre y aislado de la población.

En la segunda etapa, se desarrolló el P**iloto de transporte intermodal Ucayali**, del cual se presentan los siguientes alcances:

- Trabajo en forma coordinada entre Gobierno Regional, Gobiernos Locales y comunidades nativas.
- Empoderamiento de las autoridades y comunidades con los caminos rehabilitados.
- Innovación en el diseño para caminos de vehículos menores.
- Menor ejecución de Obras:
- Cambios inesperados del cauce de los ríos, incide en cronograma de actividades físicos y financieros.
- Dificultades en los contratos de estudios

CON RELACIÓN A LOS OBJETIVOS INSTITUCIONALES.-

"transferir la gestión de los caminos rurales a los gobiernos locales, previo desarrollo institucional y fortalecimiento de sus capacidades para lograr una gestión eficiente y sostenible":

La descentralización de la gestión vial se enmarca en la Visión institucional de PROVÍAS DESCENTRALIZADO que describe: "*una red vial rural transitable e integrada a la red departamental y nacional bajo responsabilidad de la gestión por parte de los gobiernos locales y el desarrollo socio económico de las poblaciones de sus ámbitos jurisdiccionales"*, y en su objetivo principal de contribuir a la superación de la pobreza y el desarrollo rural mediante la consolidación de la transitabilidad de la red vial, con participación financiera e institucional de los gobiernos locales.

La descentralización de las funciones del Estado, entre éstos, el Ministerio de Transportes y Comunicaciones, y particularmente PROVÍAS DESCENTRALIZADO, está relacionada con las

[33]*Los caminos de herradura son considerados como el eslabón final de la red vial rural que proporciona movilidad y accesibilidad a los más pobres*

demandas de la población y la voluntad política del propio Estado de comprometer a la población organizada y a sus autoridades y líderes a asumir sus responsabilidades en los espacios donde residen. Las Disposiciones Complementarias y Finales de la Ley de Bases de la Descentralización, dispusieron que a partir del ejercicio 2003, se iniciaba la transferencia a los gobiernos regionales y locales, de los programas sociales de lucha contra la pobreza y los proyectos de inversión e infraestructura productiva de alcance regional, en función de las capacidades de gestión de cada gobierno regional o local, disponiendo a la vez, la conducción del proceso por el Consejo Nacional de Descentralización (CND) y su Secretaría Técnica.

En la primera etapa de Caminos Rurales y parte de la segunda etapa, la identificación y priorización de las inversiones en caminos rurales fueron realizados por los Gobiernos Locales en Talleres Participativos de Priorización sobre la base de ciertos criterios de elegibilidad[34]. Para desarrollar la gestión vial descentralizada, el Programa diseñó un Proyecto Piloto de Gestión Vial Provincial en la provincia de Arequipa, ensayándose la propuesta de transferencia de la gestión vial rural a la Municipalidad Provincial y 15 Municipalidades Distritales periféricas, a partir del cual, ha ido replicándose y mejorándose gradualmente al resto de provincias del ámbito.

Basados en la experiencia del Piloto de Arequipa, así como en el impulso del proceso de descentralización y transferencia que como política de estado se impulsó desde el 2002, se desarrollaron los mecanismos para la transferencia de la gestión vial de los caminos rurales a los Gobiernos Locales, buscando alcanzar, no sólo objetivos viales, sino hacer sostenible la transitabilidad a largo plazo, en el marco de objetivos institucionales y financieros más consistentes.

El estado situacional del Piloto de Arequipa refleja una evolución favorable con relación a su diseño original, ya que ahora se proyecta como Instituto de Infraestructura, del cual tenemos los siguientes resultados:

COMPONENTE	UNIDAD	META INICIAL	META FINAL	VARIACION	% VAR.
ESTUDIOS DE CAMINOS VECINALES	KM.	150	**189.05**	39.05	20.65%
REHABILITACION DE CAMINOS VECINALES	KM.	150	**158.05**	8.05	5.36%
MANTENIMIENTO DE CAMINOS VECINALES	KM.	150	**158.05**	8.05	5.36%

En general, tanto la creación del Instituto Vial Provincial como la elaboración del Plan Vial Provincial Participativo, se realizan mediante procesos participativos, con liderazgo de los Alcaldes de la provincia y los miembros del Consejo de Coordinación Local Provincial[35]. El Instituto Vial Provincial –IVP- creado por Ordenanza Municipal, es una institución descentralizada de las municipalidades distritales y provincial, con personería jurídica y autonomía autorizada por su Estatuto y demás normas legales que le es aplicable. Es responsable no sólo del mantenimiento de los caminos rehabilitados o construidos, sino también, de la ejecución de obras, de la planificación vial, de la gestión para el financiamiento de las inversiones viales y de las actividades de seguimiento y evaluación de las acciones realizadas en materia vial.

El IVP cuenta con un Comité Directivo presidido por el Alcalde Provincial e integrado por todos los Alcaldes Distritales de la provincia, como máxima instancia de decisión; además, tiene una

[34] *Cumplimiento ordenado de requisitos previos*

[35] *Ley Orgánica de Municipalidades Nº 27972, Art. 98, establece que el Concejo de Coordinación Local provincial está integrado en un 40 % por la sociedad civil, además de los Alcaldes Provincial y Distritales.*

Gerencia General como autoridad ejecutiva y administrativa, un Jefe de Operaciones, responsable de las actividades técnicas operativas, dentro de las cuales se encuentra el mantenimiento rutinario, periódico y de emergencia de la red vial de la provincia.

Aunque Caminos Rurales II inició el proceso de descentralización de la gestión vial de los caminos vecinales a los Gobiernos Locales con el Proyecto Piloto de Gestión Vial Provincial de Arequipa a través del Instituto Vial Provincial Municipal (IVP), el año 2001, este proceso se vio respaldado desde el año 2002, a partir de la decisión política de impulsar la Descentralización del Estado. Actualmente, han sido creados 134 Institutos Viales Provinciales en igual número de provincias, de los cuales, 50 IVP se encuentran en condición de implementados y el resto en proceso de implementación, y se han elaborado 124 Planes Viales Provinciales Participativos.

Aunque la institución municipal afronta todavía debilidades en la gestión institucional, el actual proceso de descentralización de las funciones del Estado apunta a la reestructuración de este Estado, dando cabida a demandas de autonomía y liderazgo planteadas por la sociedad civil, lo que implica un proceso de reingeniería de las instituciones, particularmente de la institución municipal, orientada al logro de una mayor eficiencia y una participación más equitativa en los procesos de desarrollo local, que además favorezca y permita la participación estrecha de la ciudadanía en los asuntos de la gestión pública.

En ese contexto, se ha realizado la transferencia de más de 13,870 Km. de caminos vecinales y 2,844 Km. de caminos departamentales a los gobiernos locales y regionales, respectivamente, y ha logrado la sostenibilidad financiera del mantenimiento rutinario de estos caminos a través de la participación financiera de las municipalidades y el cofinanciamiento del Ministerio de Economía y Finanzas mediante transferencias directas a las municipalidades provinciales.

Cuadro 1

TRANSFERENCIA DE MANTENIMIENTO RUTINARIO	Km.
Gobiernos Regionales	2,705.77
Gobiernos Locales	2,844.37
IVP Arequipa	158.05
Provias Nacional	314.77
D.S 017-2006-MTC	7,846.99
TOTAL	**13,869.94**

Para garantizar la sostenibilidad de la gestión vial rural, no sólo se requieren inversiones en la vialidad, propiamente; se requiere principalmente constituir y fortalecer capacidades locales en diversos aspectos como: planificación, organización, administración y gestión, en los diferentes espacios, públicos y privados, de la sociedad civil, encaminados a promover sinergias mediante la participación concertada de los diversos actores sociales que interactúan en el ámbito de intervención. El Programa ha obtenido también significativos avances en este campo, aunque aún hay mucho por hacer

COMPONENTE	UNIDAD	META INICIAL	META FINAL	VARIACION	% VAR.
MICROEMPRESAS DE MANTENIMIENTO RUTINARIO	N°	340	**601**	261	76%
INSTITUTOS VIALES PROVINCIALES (IVP'S)	N°	12	**124**	84	210%
PLANES VIALES PROVINCIALES (PVP)	N°	s/n	**95**	45	100%
MUNICIPALIDADES CON CAPACIDAD DE ASUMIR LA EJECUCION DE LOS COMPONENTES DEL PROGRAMA	N°	12	**98**	112	933%
DISTRITOS PARTICIPANTES EN LA VDL	N°	99	**162**	63	64%

La descentralización de la gestión vial rural a los Gobiernos Locales es un objetivo estratégico del Programa orientado a asegurar la **sostenibilidad de la gestión vial rural**. Es un proceso gradual y progresivo que implica, no sólo la transferencia de recursos financieros y funciones, sino sobre todo, pasa también por desarrollar, transferir y fortalecer capacidades locales (capital humano), técnicas e institucionales, y desarrollar modelos de gestión vial institucional eficientes, que les permitan asumir con responsabilidad y eficiencia la gestión de los caminos rurales de su jurisdicción, garantizando la transitabilidad de los caminos rehabilitados.

En materia de fortalecimiento institucional, se han logrado avances importantes, como el cofinanciamiento y financiamiento del mantenimiento rutinario por parte de los Gobiernos Locales, la transferencia de los caminos (13.869,64 Km. incluyendo Gobiernos Locales, Regionales, Provias Nacional e IVP Arequipa) , la formación e implementación de los IVP (50 implementados y 81 en proceso de implementación), la formulación de planes viales provinciales (95 al termino de la segunda etapa), 98 municipalidades con capacidad para asumir la ejecución de los componentes del programa, 81 distritos participantes de la Ventana Local de Desarrollo, el desarrollo del enfoque de genero en el ámbito del proyecto y la formación y capacitación de 182 microempresas para el mantenimiento rutinario.

Es de vital importancia para la sostenibilidad de nuestra labor, continuar con el fortalecimiento de las capacidades de los gobiernos locales, para la preservación de los caminos rehabilitados y de la gestión vial realizada en esta segunda etapa, para asegurar el 100% de la transitabilidad de los caminos. Para ello es necesario la sensibilización y cooperación de los Gobiernos Locales, respecto a la necesidad del mantenimiento de los caminos y la continuidad en la gestión de los Institutos Viales Provinciales para propiciar el desarrollo de sus capacidades, contando con los conocimientos necesarios y el personal debidamente calificado a fin de lograr una optima gestión vial descentralizada.

Cabe resaltar, que existen logros sociales derivados de la ejecución del programa, lo que constituye el impacto socio económico, del cual podemos mencionar, la generación de 6.138 empleos directos permanentes, 49.000 empleos directos temporales (obras), reducción de los costos de transporte en un 20%, disminución en el tiempo de viaje, aumento en la cantidad de vehículos en transito, mayor acceso a servicios básicos como salud y educación, facilitación del comercio con otras localidades, entre otros.

Con relación a los objetivos Financieros:

“asegurar la sostenibilidad financiera del mantenimiento de los caminos rurales con participación de los gobiernos locales”:

En la segunda etapa, como parte de su objetivo institucional, PROVÌAS DESCENTRALIZADO involucra a los Gobiernos Locales en la participación financiera del mantenimiento vial rutinario (*cofinanciamiento*), bajo el sustento que los caminos rurales son su responsabilidad y competencia, dado que los Municipios y las poblaciones a quienes éstos representan, son los verdaderos “dueños” de los caminos rurales.

Esta estrategia tiene como marco legal la propia Constitución Política del Perú, Ley Orgánica de Municipalidades, Ley General de Transporte y Tránsito Terrestre, así como la normatividad en materia de descentralización, en donde se establecen las competencias de las Municipales Provinciales y Distritales en vialidad rural, en gestión, construcción, rehabilitación, mantenimiento o mejoramiento de la infraestructura vial bajo su jurisdicción.

Con este propósito, el programa diseñó una estrategia operativa de descentralización de la gestión vial consistente en: i)Desarrollar una institucionalidad especializada en el seno de las municipalidades provinciales que se encargue de la gestión vial de los caminos rurales, promoviendo la creación de Institutos Viales Provinciales (IVP); ii) Planificar el desarrollo de la infraestructura vial rural a nivel provincial, a través de la formulación de Planes Viales Provinciales Participativos (PVPP), los mismos que constituyen instrumentos de gestión, planificación y orientación de inversiones en materia de vialidad en la provincia; iii) Desarrollar mecanismos de cofinanciamiento que garanticen la sostenibilidad de la inversión realizada en infraestructura vial rural, y por tanto del mantenimiento rutinario; iv) Gradualidad de la descentralización de la gestión vial de los caminos rurales, debido a la heterogeneidad en las capacidades institucionales y técnicas de los gobiernos locales; v) Fortalecimiento técnico e institucional a los Gobiernos Locales – IVP en gestión vial descentralizada; vi) transferencia de conocimientos y resultados de su experiencia institucional, como el sistema tercerizado del mantenimiento rutinario basado en micro empresas locales que son técnica y económicamente viables y sostenibles, en la medida que los gobiernos locales y la comunidad organizada participen en la gestión y financiamiento de los caminos.

En un primer momento, a partir de 2002, se desarrolló un conjunto de instrumentos institucionales, financieros y legales, denominado Cofinanciamiento, con la finalidad involucrar a los gobiernos locales en el mantenimiento rutinario de los caminos vecinales rehabilitados en su jurisdicción. Este mecanismo consiste en un descuento automático mensual del FONCOMUN, para cofinanciar los costos del mantenimiento rutinario, por un monto aproximado de US $ 300 dólares por Kilómetro/año. Este aporte se operativiza mediante la suscribieron de Convenios de Participación Financiera para el mantenimiento vial rutinario, que al principio fue entre PROVÌAS RURAL y las municipalidades provinciales y distritales, y actualmente, es entre la municipalidad provincial con las distritales; el aporte del PROVÌAS DESCENTRALIZADO ahora es asumido por el Tesoro Público (Ministerio de Economía y Finanzas- MEF) mediante transferencias directas a las cuentas provinciales.

La transferencia de la gestión del mantenimiento rutinario a los gobiernos locales se produce a partir de la publicación de los dispositivos legales en materia de Descentralización y Transferencia, como son el D.S. Nº 036-2003-PCM y D.S. Nº 088-2003-PCM, mediante los cuales se da inicio al proceso de transferencia de la gestión vial y de recursos. En el aludido D.S. Nº 088-2003-PCM, se dispone la preservación del sistema de mantenimiento de los caminos vecinales basado en la promoción, capacitación y contratación directa de las microempresas de mantenimiento vial conformadas por pobladores del medio rural, y por lo tanto, con carácter de excepción y por un período no mayor a la duración del Programa Caminos Rurales que ejecutó PROVÍAS DESCENTRALIZADO, en tanto se desarrolle los mercados de trabajo y las formas de

contratación, establece la permanencia y continuidad contractual con las microempresas de mantenimiento vial que venían realizando el mantenimiento vial rutinario a cargo de Programa, autorizando a los Gobiernos Locales – IVP, a contratar en forma directa a las Microempresas ya existentes o las que se promociones en el futuro.

Los esfuerzos del Programa se orientaron no sólo a las inversiones en vialidad, como ya se mencionó, sino al Fortalecimiento Institucional, dirigido a reforzar las capacidades técnicas y administrativas de los gobiernos locales, comenzando por una participación activa en el cofinanciamiento del mantenimiento vial rutinario.

Actualmente, los IVP que han recibido transferencias del mantenimiento rutinario, realizan la gestión del seguimiento y monitoreo al desempeño de las microempresas de mantenimiento vial y desarrollan los procesos de selección y contratación de las microempresas, de acuerdo a las normas nacionales, ya que ahora, el costo del mantenimiento es asumido íntegramente por recursos del Estado. El Decreto Supremo Nº 017-2006-MTC dispone la transferencia directa del MEF a las municipalidades provinciales de los montos para el mantenimiento rutinario que eran cubiertos por el PROVÌAS DESCENTRALIZADO, habiendo logrado de este modo la sostenibilidad financiera de esos caminos transferidos a los gobiernos locales.

CON RELACIÓN A LOS OBJETIVOS SOCIALES Y ECONÓMICOS.-

"vincular el camino rural rehabilitado y mantenido con la generación de capacidades locales para desarrollar proyectos productivos y buscar complementariedades con otros Proyectos de infraestructura económica":

Acorde a su objetivo principal y al modelo de intervención innovador del PROVÌAS DESCENTRALIZADO, antes PROVÌAS RURAL, en la segunda etapa de Caminos Rurales, se han desarrollado diversas actividades orientadas a vincular las intervenciones en la infraestructura vial con el desarrollo rural con enfoque territorial.

VENTANA DE DESARROLLO LOCAL (VDL)

Es una propuesta de desarrollo local participativo con la población de los distritos rurales pobres, articulados a un eje vial rehabilitado y mantenido por microempresarios locales, que cuentan con potencialidades de recursos productivos y capacidades humanas para identificar, planificar, gestionar y conducir actividades económico-productivas rentables y sostenibles.

Ventana para el Desarrollo Local se propone lo siguiente:

a. Contribuir al desarrollo económico del sector rural del país y en particular de los ámbitos distritales articulados por ejes viales rehabilitados y mantenidos por Caminos Rurales II y las municipalidades distritales y provinciales en especial, mediante la coordinación de esfuerzos, recursos y capacidades institucionales para impulsar una dinámica económica sostenida en el ámbito rural, tal que favorezcan los procesos de descentralización y de integración de dichos ámbitos a la economía nacional.

b. Contribuir con la generación de sinergias interinstitucionales entre las entidades públicas y privadas del país vinculadas al desarrollo rural, potenciando sus acciones y sus servicios e intercambiando experiencias para optimizar el impacto de sus intervenciones en el ámbito rural.

c. Impulsar la creación y la implementación de mecanismos ágiles para articular y asignar recursos económicos, financieros, tecnológicos y humanos para el desarrollo y ejecución

de proyectos productivos en el marco de priorización definida por los planes de desarrollo distrital concertado de distritos rurales.

d. Constituir un foro de análisis y de propuestas para impulsar el desarrollo de los ámbitos rurales pobres que tienen potencial para desarrollar actividades económicas rentables a partir de sus propios recursos.

e. Coordinar y prestar servicios articulados a la implementación de los proyectos productivos que se orienten a la calificación tecnológica y a la gestión empresarial competitiva de los productores y a la formalización empresarial de sus organizaciones.

f. Implementar un banco de datos de proyectos y perfiles de proyectos de desarrollo productivo y social elaborados en los ámbitos rurales pobres del país.

g. Llevar un archivo informático de información económica, productiva y de mercado de los ámbitos rurales regionales y distritales con potencial económico productivo identificado.

La estrategia de intervención de VDL, enfatiza en la formulación de proyectos productivos, creando condiciones para un desarrollo económico y social que a la vez que generen puestos de trabajo e ingresos, incrementen la rentabilidad socio-económica de la inversión realizada en los ejes viales rehabilitados y transferidos a los gobiernos locales, generando bienestar y abriendo rutas al desarrollo.

El interés de VDL en la formulación de los proyectos productivos está en poner en el centro de la atención del sector privado y de las organismos de desarrollo la existencia de oportunidades de inversión en ámbitos de pobreza que cuentan con recursos económicos de diferente orden que pueden constituirse, mediante el concurso de la inversión privada o pública, en actividades productivas rentables que beneficien directa e indirectamente a la población de estos ámbitos.

En este enfoque el principal producto de la intervención de VDL en un ámbito rural pobre es formalizar y poner sobre relieve las potencialidades productivas y organizativas de las poblaciones para desarrollar actividades económicas orientadas por el mercado y el desarrollo de capacidades locales para gerenciar recursos. En el trayecto a éste propósito se generan los planes de desarrollo local concertado que sirven de marco orientador e integrador de las iniciativas económicas y sociales identificadas por la población organizada. Los planes de desarrollo se constituyen en instrumentos de gestión de los gobiernos locales orientando el uso eficiente y ordenado de los escasos recursos del sector público

La propuesta de Ventana para el Desarrollo Local se complementa con el acompañamiento a las autoridades de los gobiernos locales y organizaciones de productores de la población en la canalización de sus perfiles y proyectos para la búsqueda de financiamiento y en la capacitación y asistencia técnica para el desarrollo de capacidades de gestión empresarial y comercialización y la formalización de las organizaciones de productores en un modelo empresarial que satisfaga las exigencias de cada actividad productiva.

En la segunda etapa, la VDL ha desarrollado 81 planes de desarrollo distrital, identificando un total de 845 proyectos, de los cuales, 665 corresponden a proyectos de infraestructura pública, por S/.103 millones de nuevos soles (30 % está referido a infraestructura económica) y 180 proyectos son productivos a nivel de factibilidad, estando 57 proyectos financiados y/o en proceso de gestión; 17 proyectos se encuentran en ejecución.

PLANES DE INFRAESTRUCTURA ECONÓMICA PROVINCIAL (PIEP)

El Plan de Infraestructura Económica Provincial PIEP es un instrumento de gestión que orienta la intervención pública liderada por las Municipalidades para hacer converger en forma articulada proyectos sectoriales de infraestructura económica.

Asumen a los territorios provinciales como objetivo de las políticas públicas coordinadas multisectoriales, y como unidades de planeamiento y programación. Parten de un enfoque territorial que ordena las visiones sectoriales y favorece la articulación urbano-rural.

Actualmente se vienen culminando 7 PIEP:

- Provincia: Vilcashuamán (Departamento Ayacucho)
- Provincia: Huanta (Departamento Ayacucho)
- Provincia: Tayacaja (Departamento Huancavelica)
- Provincia: Azángaro (Departamento Puno)
- Provincia: Leoncio Prado (Departamento Huanuco)
- Provincia: Arequipa (Departamento Arequipa)
- Provincia: Sihuas (Departamento Ancash)

Los PIEP se proponen:

- ✓ Orientar la inversiones para dinamizar el crecimiento.
- ✓ Reducir costos de producción y mejorar la productividad.
- ✓ Reducir los costos de transacción, facilitando la integración de actividades y espacios a los mercados y ejes de desarrollo.
- ✓ Mejorar acceso a servicios y elevar calidad de vida.
- ✓ Criterios orientadores de los PIEP:
  - ✓ Priorizar por áreas geográficas: se trata de bienes públicos. Conciliar criterios técnicos y participativos con horizonte de largo plazo.
  - ✓ Aprovechar el carácter estructurante de las inversiones en vialidad para potenciar a los demás rubros de infraestructura económica.
  - ✓ Generar complementariedades y economías de aglomeración entre los componentes: vialidad, electrificación, comunicaciones, saneamiento y riego para generar impactos amplificados sobre el desarrollo local.
  - ✓ Intervenir con criterios sistémicos o de redes (no en tramos aislados) a fin de beneficiarse de las externalidades y optimizar el impacto de los proyectos de inversión.
  - ✓ Operar a partir de un tamaño mínimo de proyectos y obras para aprovechar economías de escala, reducir costos y mejorar los beneficios.

El marco institucional de los PIEP es:

- ❖ Convenios entre Municipalidad Provincial y Sectores.
- ❖ Compromisos del Alcalde Provincial, los alcaldes distritales y responsables de los Componentes.
- ❖ Conducción política: Municipalidad Provincial.
- ❖ Conducción técnica: Secretaría Técnica del PIEP.
- ❖ Asesoramiento: Comité de Coordinación Multisectorial (representantes de los Sectores y de la sociedad civil).
- ❖ En el mediano plazo: institucionalidad de las Municipalidades Provinciales:
  - Transitar de planificación de infraestructura vial a infraestructura económica.

- Transitar de Institutos Viales Provinciales (IVP) a Institutos de Infraestructura Económica Provincial (IIEP).

Caracterización y potencialidades territoriales:

- El PIEP asume a las provincias como ámbitos del Plan:
  - Articulan distritos, ciudades intermedias y cuencas hidrográficas
  - Cuentan con una masa crítica de recursos y un tamaño suficiente para visualizar externalidades.
  - Permiten un manejo eficiente de recursos en escala local, evitando la fragmentación.
- La caracterización territorial se orientará a identificar las zonas económicas y ejes de desarrollo que estructuran la provincia.
- Se identificarán las potencialidades del territorio y las restricciones que impiden su pleno aprovechamiento.
- De las potencialidades y ejes de desarrollo se desprenden los requerimientos de infraestructura económica. Esta es una demanda derivada de la dinámica económico-productiva.

Definición de Potencialidades: Recursos no utilizados o no adecuadamente utilizados. El aprovechamiento o el mejor uso de los recursos puede permitir generar un producto o riqueza adicional. Los recursos no son solamente naturales. Se incluyen el capital social e institucional, el capital humano y los servicios.

La jerarquización de las potencialidades proporciona criterios para priorizar los proyectos de infraestructura económica. Los productos a obtener: (i) Caracterización y zonificación de territorios provinciales; (ii) Mapa de potencialidades jerarquizadas.

La priorización y programación de inversiones resulta de comparar la demanda de infraestructura económica y la oferta existente en el ámbito provincial.

- El PIEP establece una priorización intersectorial de proyectos.
- La prioridad de los proyectos en función de la jerarquización de potencialidades y las condiciones sociales existentes en cada provincia.Ø La población organizada y los Sectores participarán en los procesos de priorización de inversiones y en la revisión de la consistencia técnica de los proyectos seleccionados.

Producto a obtener: Programa de Inversiones en Infraestructura Económica Provincial.

ENFOQUES TRANSVERSALES:

Nuestro país cuenta con potencialidades y fortalezas, expresadas básicamente en sus recursos naturales y humanos; sin embargo, la pobreza y exclusión social e inequidad, aún persisten en nuestra sociedad y se manifiestan de diversas formas como la inequidad de género que se entrelaza con otras formas de discriminación y exclusión, profundizando las desigualdades sociales existentes, siendo más vulnerables las mujeres: niñas, adolescentes, campesinas, adultas mayores, produciendo brechas y disparidades[36] entre mujeres y hombres en cuanto a oportunidades para acceder a los servicios, recursos, empleo, información y a las instancias de decisión.

:[36] Acuerdo Nacional, décimo cuarta política.

En ese contexto, el objetivo prioritario de la participación del Estado en la sociedad es el de promover la igualdad de oportunidades para todos los habitantes a través de un mayor acceso, tanto a bienes públicos como privados, optimizando el uso de los recursos disponibles y concentrando su esfuerzo en actividades asociadas al desarrollo del capital humano, del capital social, del capital institucional y del capital físico privado y público, entre otros.

Por su parte, el Programa Caminos Rurales II ha desarrollado varias iniciativas y enfoques transversales destinados a promover una mayor equidad y participación en las actividades de mantenimiento de los caminos rurales, en los caminos de herradura, en Ventana para el Desarrollo Local, y en las acciones de descentralización

ENFOQUE DE GÉNERO DEL PROYECTO:

La perspectiva de género en Caminos Rurales II parte por el reconocimiento y voluntad institucionales de entender la vinculación entre género, políticas públicas y desarrollo, y emprender, a partir de este análisis, las acciones necesarias para atender los intereses y derechos diferenciados de mujeres y hombres de forma equitativa y mejorar las relaciones de género entre los diversos actores sociales que interactúan en el programa.

El interés por incorporar la perspectiva de género en algunas actividades del PROVIAS DESCENTRALIZADO, antes PROVÍAS RURAL, surge a raíz de la comprobación de la participación activa de la mujer en las labores de mantenimiento vial y en las iniciativas de proyectos productivos durante la primera etapa del Programa (1995-2000). Se podría decir que la mujer comenzó a hacerse visible dentro de un espacio tradicionalmente asignado a los varones (en el rol productivo y en las actividades ligadas al transporte y la vialidad).

El Estudio sobre *"Efectos del mejoramiento de los caminos rurales en las relaciones de género"*[37] (1999) demostró que los beneficios del proyecto son diferenciados para los hombres y para las mujeres, debido a diversos factores relacionados con la economía doméstica, la carga de trabajo, las responsabilidades asignadas, y también con los valores y normas sociales y culturales.

En la segunda etapa (2001–2006) se incorporó la perspectiva de género en algunas actividades y componentes del PROVÍAS DESCENTRALIZADO a fin de promover una mayor equidad en las oportunidades de empleo e ingresos rurales. Con este propósito, se diseñó e implementó el Plan de Acción de *"Desarrollo de Acciones de Género"* (2002)[38], que comprendió un conjunto de acciones afirmativas orientadas a asegurar una mayor presencia de mujeres, especialmente en el mantenimiento vial rutinario y en el mejoramiento de caminos de herradura.

Se propuso una meta inicial de 10% y 20% en la participación de mujeres en estas actividades, alcanzando al final un 24% y 25%, respectivamente, siendo a la fecha, el único proyecto de infraestructura vial que utiliza este enfoque como estrategia para promover la equidad e inclusión en el medio rural.

Una de las primeras acciones fue la revisión y rediseño de la guía de procedimientos para conformar microempresas de mantenimiento vial con la finalidad de superar las restricciones a la participación de las mujeres rurales en estas MEMV y también en el mejoramiento de caminos de herradura. Otra acción fue la ejecución de Talleres de Sensibilización y Capacitación en temas de género, dirigido a dos grupos de actores diferenciados: los Operadores del Programa y los Operadores Viales Rurales. Asimismo, se realizó el acompañamiento a los equipos de Promoción Social en la aplicación de la perspectiva de género, estableciendo Puntos Focales de Género

---

[37] *Banco Mundial - CENTRO*

[38] *Primera Versión de* ***Desarrollo de Acciones de Género*** *elaborada el2002, en coordinación con el Banco Mundial. Se estableció, entre otros, Talleres de Sensibilización y Capacitación en género.*

(Asistentes Técnicos de Operaciones) y el monitoreo y evaluación trimestral de los indicadores de género.

La aplicación del enfoque de género muestra también evidencias de un proceso de empoderamiento de la mujer en este espacio tradicionalmente masculino, posicionándola en espacios de decisión, tanto en las microempresas como en los comités viales rurales, con mayor énfasis en cargos de tesorera o vocal, pero con posibilidades de mejorar su liderazgo y posicionamiento al interior de su organización.

Adicionalmente, se constata en ambos casos la valoración de la presencia de la mujer como controladora social y responsable en las tareas asignadas dentro de su organización y como interlocutora con capacidad de gestión ante la autoridad local para el visto bueno de las valorizaciones mensuales, así como eficiente administradora en el cargo de tesorera –capacidad desarrollada por su rol de administradora del hogar- y la formación de nuevas lideresas comunales. Todo ello con impactos en la familia, principalmente en alimentación, educación y mejoramiento de las condiciones de vida de los hijos e hijas a su cargo.

Los resultados del enfoque de género se aprecian en el siguiente cuadro, con una participación del 23 % de socias mujeres en las microempresas constituidas en la segunda etapa; 25 % de mujeres en los comités viales de mantenimiento rutinario. Además, se realizaron 28 Talleres entre lecciones aprendidas y capacitación en temas de género, con una participación de 650 varones y 358 mujeres, en 1,008 asistentes

FORMACIÓN DE MICROEMPRESAS DE MANTENIMIENTO VIAL SEGUNDA ETAPA (2001 - 2006)

AÑO	N° DE TRAMOS	LONG (Km)	N° DE SOCIOS			% particip
			Hombres	Mujeres	Total	mujeres
2003	64	921,04	349	92	**441**	21%
2004	50	972,21	302	80	**382**	21%
2005	32	615,09	167	52	**219**	24%
2006	46	983,20	204	77	**281**	27%
TOTAL	**192**	**3.491,54**	**1022**	**301**	**1323**	23%

Estos resultados constituyen un activo que requiere ser transferido en esta nueva etapa a los Gobiernos Locales - Institutos Viales Provinciales, como parte del *know how* y normativa que se transfiere; más aún, por que nuevo contexto de competitividad bajo el sistema de contratación pública, obliga fortalecer la participación comunal mediante un conjunto de mecanismos, incentivos y procedimientos que faciliten esta acción.

Por otra parte, el marco normativo nacional actual favorece este proceso través de la dación de la Ley de Igualdad de Oportunidades entre mujeres y hombres -Ley Nº 28983 y el Decreto Supremo que aprueba las Política Nacionales - DS 027-2007-PCM, de obligatorio cumplimiento para las entidades estatales y aplicable por tanto a los Gobiernos Locales, ya que se deben presentar metas semestrales en doce rubros específicos, siendo uno de ellos el de igualdad de oportunidades para mujeres y hombres.

PROCESOS PARTICIPATIVOS:

La participación es el proceso por el cual las personas y entidades que tienen un interés legítimo ejercen influencia y participan en el control de las iniciativas de desarrollo y en las decisiones y

recursos que los afectan[39]. En este sentido, PROVÌAS DESCENTRALIZADO impulsó varios procesos participativos en las diferentes actividades que desarrolla; tanto los Gobiernos Locales, que son los que tienen competencia sobre los caminos rurales, como los usuarios de los caminos, comunidades beneficiarias y sociedad civil en general, participan desde diversos ángulos en las distintas etapas del ciclo del proyecto.

Por ejemplo, los gobiernos locales y la población beneficiaria participan en: (i) identificar y priorizar sub proyectos, (ii) promover la participación en el mantenimiento vial rutinario, iii) fomentar y asegurar la contrapartida local en las obras de mejoramiento de caminos de herradura, (iv) cofinanciar los costos del mantenimiento vial rutinario, (v) implementar los mecanismos y procedimientos para la transferencia y descentralización de la gestión vial rural, vi) monitorear el desempeño de las microempresas de mantenimiento vial, con participación de profesionales júnior (monitores) mediante convenios de prácticas pre profesionales con universidades locales, vii)promover sinergias para el desarrollo local.

El enfoque participativo en el mantenimiento rutinario tiene por finalidad involucrar activamente a los protagonistas en la solución de sus problemas. Hablar de participación en el mantenimiento vial rural no es sólo hablar de la intervención de los pobladores en el proceso de promoción y conformación mediante Microempresas; es también referirnos a la participación real y efectiva del Gobierno Local como responsable de la gestión vial rural en el ámbito provincial.

Así, la intervención del Programa se sustenta en la actuación convergente y sinérgica de un conjunto de actores sociales, cuya participación permite lograr los objetivos institucionales dentro de las normas acordadas con los Bancos cofinanciadores, para garantizar la sostenibilidad de la gestión vial de los caminos rurales en el largo plazo, tanto a través de la inversiones en la vialidad, como en la apropiación del camino por la sociedad civil.

PROVÍAS DESCENTRALIZADO apostó por un sistema de mantenimiento vial rutinario basado en Microempresas locales, como un mecanismo de participación comunal en el mantenimiento de los caminos rurales[40]. Esta estrategia tiene múltiples impactos positivos, especialmente en la economía local y de las comunidades más pobres del país.

En el orden técnico, se asegura la realización permanente y adecuada de las actividades necesarias para el mantenimiento y la conservación rutinaria de la red vial rural, el uso eficaz y eficiente de los recursos asignados para tal fin, así como un mayor rendimiento en las cuadrillas de trabajo, todo ello, con entrenamiento, capacitación y acompañamiento permanente, poniendo énfasis en los aspectos técnicos, empresariales y legales.

En el orden económico, permite desarrollar mercados de trabajo en aquellos lugares donde estén poco desarrollados o no existan, generando empleo directo permanente e indirecto temporal para bastos sectores de la comunidad rural. El mantenimiento vial permite la reducción de costos de transporte y tiempos de viaje, el acceso y movilidad entre centros poblados, el acceso a mercados, y en general, desarrollo de mercados con la consiguiente dinamización de la economía rural, y éste, desarrollado mediante procesos participativos, vincula al poblador con el desarrollo rural, integrando no sólo a los centros poblados de la región, si no a nivel nacional, de tal forma que tomen conciencia de que los caminos han sido construidos para beneficio de ellos y como tal deben conservarlos.

En lo social, la participación del poblador en las microempresas de mantenimiento vial, desde la convocatoria, promoción y selección hasta la operación del servicio, permite internalizar el

---

[39] *BID. Libro de Consulta sobre Participación*

[40] *Quispe, Edgar "Mantenimiento Vial de los caminos rurales en el Perú basado en Microempresas". 2003*

sentido de apropiación del camino (pertenencia), transformado su condición pasiva-dependiente (beneficiario) en un agente activo de cambio (operador del mantenimiento); además, como se señaló, los trabajadores de las microempresas se sienten identificados con las labores que realizan, dado que más allá de su labor remunerada, se ven favorecidos directamente por los beneficios tangibles que trae la mejora de la transitabilidad, al ser miembros de la comunidad.

Dado que el mantenimiento rutinario de las vías rurales implica uso intensivo de mano de obra que no requiere de un alto grado de calificación, el modelo permite contribuir a la generación de empleo. Los socios y socias de las Microempresas, muchas de ellas jefas de hogar[41], son generalmente pobladores de bajos niveles de ingresos, marginados del proceso de desarrollo social y económico del país, con espíritu de trabajo y responsabilidad, que tienen en la microempresa una oportunidad para generar un ingreso, con los consiguientes efectos en el acceso a la educación y salud, principalmente, mejorando las condiciones de vida de las poblaciones campesinas y rurales.

Esta estrategia participativa permite también eliminar los posibles intermediarios del servicio, garantizando así, en forma directa y estable, una remuneración por el trabajo que se realiza, con lo que se busca, en resumen, elevar el nivel de vida de los asociados y de sus familias al mejorar sus condiciones alimentarías, de vivienda, de seguridad social y educación. Todos estos efectos constituyen la razón del por qué hacer el mantenimiento vial rutinario empleando procesos participativos mediante microempresas conformadas por pobladores de la zona, aunque existen retos aún por resolver.

Dado que la participación ciudadana, como expresión del ejercicio de un derecho y un deber, constituye un mecanismo estratégico para lograr un mayor bienestar y desarrollo de la población, y es un elemento clave del **empoderamiento**[42] de la ciudadanía, las Asociaciones Civiles de mantenimiento vial, se constituyen en agentes de desarrollo local y contribuyen al empoderamiento de sus miembros, ya que:

- Son entidades jurídicas con representatividad local y capacidad de gestión
- Poseen capacidades técnicas en labores de mantenimiento vial, que los posiciona como especialistas en el ámbito de su competencia.
- Tienen acceso a capacitación técnica especializada y sostenida
- Están sujetos a un sistema de monitoreo y evaluación tanto por parte de la institución como por parte del gobierno local,
- Por ser una entidad legalmente reconocida y constituida tienen capacidad de participar en convocatorias diversas, tanto de entidades técnicas viales como de organismos de desarrollo local, como las Mesas de Concertación Local, los Comités de Coordinación Local.
- Realizan acciones de proyección a la comunidad y gobierno local, tanto con prestación de servicios como realizando jornadas de mejoramiento de calzadas y otras obras civiles.

El modelo de microempresas rurales fue una respuesta oportuna frente a la inexistencia tanto de agentes como de mercados de trabajo con las exigencias que plantea el mantenimiento rutinario de los caminos rurales, bajo un esquema promocional para la creación de Asociaciones Civiles, (microempresas) con participación de la comunidad. Sus principales fortalezas son:

---

[41] *Al menos un 30 % de hogares rurales están jefaturados por mujeres. "Participación de mujeres rurales en las microempresas de mantenimiento vial". Aucahuasi, Nérida*

[42] *El término **empoderamiento** alude a la capacidad de cada ser humano de tomar decisiones por sí mismo y de definir prioridades según sus perspectivas y concepciones culturales.*

- ✓ La Cultura ancestral de las comunidades relacionadas al trabajo comunal (Ayni: trabajo solidario, Minka: trabajo cooperativo) permiten una buena organización para las labores.
- ✓ Los integrantes radican en la zona de trabajo
- ✓ Las relaciones interpersonales son fluidas entre sus miembros, por pertenecer a una misma comunidad o comunidad vecina, con costumbres afines o similares.
- ✓ Experiencia de organización local tipo empresarial en el área rural
- ✓ Pobladores de menores recursos, organizados y capacitados, se incorporan a la fuerza de trabajo en mejores condiciones, con los efectos en las familias y el nivel de vida
- ✓ El capital humano se fortalece en las comunidades rurales
- ✓ El reconocimiento de estas organizaciones en el contexto local, como aporte al desarrollo de la zona

Actualmente, los gobiernos locales realizan directamente, a través de sus IVP los procesos de selección y contratación de personas naturales o jurídicas para el servicio del mantenimiento rutinario. Las microempresas promovidas y conformadas por Caminos Rurales I y II cuentan con las potencialidades necesarias y suficientes para ganar los concursos.

EL CONTROL SOCIAL EN EL MANTENIMIENTO VIAL RUTINARIO

Uno de los principios generales que rige la descentralización (Ley Nº 27783 Ley de Bases de la Descentralización) señala que esta forma de organización del Estado **es democrática**, que se desarrolla en los planos político, social, económico, cultural, administrativo y financiero. Promueve la igualdad de oportunidades para el acceso a niveles mayores de desarrollo humano en cada ámbito, y la relación Estado y Sociedad, basada en la **participación y concertación** en la gestión de gobierno, destacando como uno de los objetivos a nivel social de la descentralización es la **Participación ciudadana en todas sus formas de organización y control social**.

El control social o vigilancia social, es una forma de participación que involucra a la sociedad civil a través de sus organizaciones sociales en fiscalizar y controlar las maneras de cómo se ejerce el poder público, el acceso a los recursos, el cumplimiento de sus obligaciones y desempeño de la gestión, con la finalidad de proponer cambios que favorezcan el mayor desarrollo de la población.

Una de las formas de ejercer ciudadanía es vigilando desempeños y cumplimiento de metas sobre los bienes y servicios públicos. Así, siendo las labores de mantenimiento vial rutinario un servicio sobre un bien público, como son las carreteras, éstas son y deben ser objeto de fiscalización tanto al interior de la propia organización, como por la colectividad usuaria.

Con este propósito, dentro de las actividades de mantenimiento, se señala la de control y vigilancia al cumplimiento de las tareas establecidas técnicamente en las condiciones contractuales, a cargo de los /las monitores viales, que se traduce en la presentación y transitabilidad óptima de la vía. En este caso la función de control es de carácter técnico y sobre parámetros técnicos.

Sin embargo, el control social ejercido por la colectividad usuaria trasciende estos aspectos técnicos y puede incluir además el manejo de los fondos destinados a estas labores de mantenimiento, toda vez que parte del dinero es cofinanciado por las municipalidades. Por ejemplo, en el futuro pensamos que será conveniente incorporar en el directorio de los IVP a representantes de los usuarios de las vías rurales.

La estrategia participativa diseñada por Caminos Rurales, vincula al Proyecto directamente con las Municipalidades y con las Asociaciones Civiles del mantenimiento vial rutinario, e

indirectamente con la población en general, usuaria de los caminos. Esta condición de transeúntes y transportistas cotidianos despertará una percepción adicional positiva si los caminos vecinales están presentados en satisfactorias condiciones de transitabilidad, o por el contrario si las vías presentan deterioros e inseguridades, desatará una corriente de opinión adversa. La percepción directa, que se traducen en comentarios directos hacia las Asociaciones Civiles y sus socios, a quienes conocen por ser también pobladores locales, sumado a la modalidad de contratación del servicio, se traduce en una presión constante explicita o implícita por el usuario, tanto a la entidad que desarrolla el mantenimiento como al gobierno local – IVP, lo que obliga a presentar una imagen real de trabajo conciente.

Los mecanismos participativos que PROVIAS RURAL promueve en sus diversos componentes, permite que la población local beneficiaria esté informada sobre su accionar en el espacio local, toma en cuenta la capacidad de organización local**,** reconociéndola como un capital social importante, y a partir de ésta genera institucionalidad al promover asociaciones civiles y comités de mejoramiento de caminos de herradura. Estas asociaciones a su vez, se van posicionando al interior de la localidad y se tornan especializadas por el soporte técnico que le Proyecto les brinda.

EL SISTEMA INTEGRADO DE GESTIÓN ADMINISTRATIVA Y TÉCNICA:

Son numerosos los beneficios de haber logrado implementar este sistema paralelo, a nivel de institución así como de usuario, para facilitar el acceso a la información y como herramienta importante en la gestión del programa. Se propone, para una tercera operación, implementar este sistema en los Institutos Viales provinciales con mayor capacidad instalada, técnica y profesional. Para ello se prevé el fortalecimiento de estas capacidades a fin de poder descentralizar este sistema y facilitar la gestión en todo el ámbito del proyecto.

INVERSIÓN

En la segunda etapa (2001– 2006), se estima una inversión para el cierre por un monto de US $ 178 millones, financiado por Bando Mundial (US $ 48 millones), el Banco Interamericano de Desarrollo (US $ 50 millones) y por fondos de contrapartida asignados al Programa por el MTC y por los Gobiernos Locales beneficiarios.

Se ejecutó con una inversión estimada de US $ 151 millones, de los cuales, US $ 50 millones es financiado por el Banco Mundial, US $ 50 millones por el BID, según Convenios de Préstamos N° 4614-PE y Nº 1328/OC-PE del BIRF y BID respectivamente, y US $ 51 millones por fondos de contrapartida del tesoro público, asignados al Proyecto por el MTC y por los Gobiernos Locales beneficiarios. La meta es rehabilitar y mantener unos 4,300 Km. de caminos vecinales y 3,300 Km. de caminos de herradura, adicionales, tanto en los 12 departamentos de la primera etapa, como en 7 nuevas provincias: Chachapoyas (Amazonas), Sánchez Carrión (La Libertad), Huancabamba (Piura), Yauyos (Lima), Arequipa (Arequipa), y Coronel Portillo (Ucayali)

Además se tuvo la intervención de las siguientes fuentes de financiamiento: Fondo Contravalor Perú – Italia (S/.21’490,643.30.); Fondo Contravalor Perú – Francia, (S/. 4’950,000.00 dólares); Proyecto de Desarrollo Alternativo Tocache – Uchiza (PRODATU), (S/.4’400,000.00); Países Bajos (S/.4’069,132.17); DE VIDA (S/.4’022,627.80).

ANALISIS DE COSTOS

Inicialmente, se planteo un costo promedio por para cada tipo de componente, el cual ha ido variando a lo largo de la ejecución del programa debido a diversos factores. Se ha determinado un

costo promedio para cada uno de ellos, como base referencial para el cálculo de los costos de una tercera operación.

COMPONENTE	UNIDAD	SIERRA (US$)	SELVA (US$)	PROMEDIO FINAL
ESTUDIOS DE CAMINOS	KM.	1,100	1,100	1,100
REHABILITACION DE CAMINOS VECINALES	KM.	13,860	35,000	24,430
SUPERVISION DE CAMINOS VECINALES	KM.	1,500	2,200	1,850
MANTENIMIENTO PERIODICO DE CAMINOS (CADA 4 AÑOS)	KM.	3,000	3233	3,116
MANTENIMIENTO RUTINARIO DE CAMINOS VECINALES (ANUAL)	KM.	700	700	700
MEJORAMIENTO DE CAMINOS DE HERRADURA	KM.	3,000	3,000	3,000

EVOLUCION DEL PROGRAMA

Existen numerosos aspectos, en los cuales a través del tiempo de ejecución del programa se han logrado mejorar. A continuación resaltamos los más importantes:

Sistema de Gestión Administrativa y Técnica		
VANTEC	**SIGA**	**SIGAT**
Sistema Monousuario con limitaciones en su proceso.	Se desarrollo todos los procesos administrativos en forma integrada multiusuario.	Sistema Integrado de procesos técnicos con los procesos administrativos, se prevé su implementación en el presente año.
Inscripción del Patrimonio Vial		
No inscripción de caminos como patrimonio vial	**Metodología para inscripción de caminos**	**Inscripción del Patrimonio Vial**
En la Actualidad, no existe la inscripción de los caminos vecinales como patrimonio vial, en ninguna Institución del estado	Desarrollar metodología en coordinación con la DGCF para crear un Sistema Nacional de Inscripción de Caminos. SINAIC	Implementación del SINAIC, en Gobierno Central, Regional y vecinal
Interfases con Sistemas de Información Externos		
Doble digitalización de la Información	**Interfase SIGA - SIAF**	**Interfases SIGAT – Otros**
Se realizaba una doble digitación en el ingreso de la información, en el SIGA y en el SIAF, lo que significaba una perdida significativa de recursos humanos y tiempo.	Se desarrollo e implemento exitosamente las interfases con el SIAF, en las fases de: Compromiso, Devengado y Girado, haciendo más confiable la información procesada.	Se desarrollaran e implementarán otras interfases requeridas como la del SIGAT – SEACE, SIGAT – SNIP.
Medio Ambiente		
Estudios de Impacto Ambiental	**Ejecución de Obras sin inconvenientes**	**Replicar la experiencia**

Los estudios de impacto ambiental han sido hechos por especialistas.	Se ha logrado ejecutar el 100% de las obras preservando los ecosistemas y coordinando con el INC	En la 3ra Etapa, se replicarás las experiencias obtenidas, buscando innovaciones para una mejor preservación del medio ambiente
Genero		
Incorporación de la Mujer	**Acciónes Realizadas**	**Replicar la experiencia**
El rol de la mujer dentro del programa, ha cambiado de manera favorable, ya que forma parte importante de nuestra institución	Incorporación de un buen numero de profesionales a la institución, considerar un mínimo de 30% de la presencia femenina, en mantenimiento rutinario, VDL, y mejoramiento de caminos de herradura	Se ha confirmado el buen desempeño de la mujer en las distintas tareas en las que participan, se espera promover mejor su participación.
Inventarios Viales		
Inventarios Viales Tradicionales	**Inventarios mediante GPS**	**Conformación de base de datos GIS**
Se utilizan Metodologías, algo obsoletas para desarrollar estos inventarios viales. (método manual)	Se ha desarrollado una Metodología, para el levantamiento de las principales características de la red vial, mediante GPS	Desarrollar Sistema para manejar una base de datos GIS
Codificación y Registro de Caminos		
Caminos no Codificados	**Metodologias de Codificación**	**Implementación del Sist. Codificación de Caminos**
Se identificó a través de los Planes Viales que mas del 50% de los caminos vecinales identificados en la red vial, no se encuentra codificados por el MTC	Desarrollar metodología en coordinación con la DGCF para crear un Sistema Nacional de Codificación y Registro de Caminos. SINACREC	Implementación del Sistema de Codificación y Registro de caminos en Gob. Locales

IMPACTOS DEL PROGRAMA

- Estudios de alrededor de 2000 hogares y complementariamente otros agentes, como comerciantes y transportistas. Poco más de 1,300 hogares fueron encuestados en ambas ocasiones. Encuestas tipo panel.
- Tanto para Caminos Vecinales como para Caminos de Herradura se consideró 18 conceptos, analizándolos con el método de la Doble Diferencia.
- Los resultados sobre el grado de pobreza son discutibles ya que el método utilizado se basa en encuestas sobre presupuestos de los hogares, no considerando debidamente el incremento de la oferta de bienes públicos, muy importante en las últimas décadas. Asimismo, nadie espera que con una inversión de 400 millones de dólares se supere la pobreza rural.
- La empresa GRADE, ha desarrollando el Estudio de Evaluación Impacto Ambiental del cierre del Programa, el último informe se encuentra en revisión para su aprobación

IMPACTO SOCIO ECONOMICO

El impacto socioeconómico es probablemente el resultado más importante del programa de caminos rurales, ya que refleja la verdadera mejora en la vida cotidiana de los pobladores, gracias a un estudio realizado por cuanto en el año 2004. Actualmente se esta realizando un segundo

estudio, elaborado por Grade, del cual tendremos las cifras y resultados finales del cierre de esta segunda etapa. Tenemos algunos puntos generales en el impacto, así como cifras específicas (cuadro 2), las cuales presentamos a continuación:

- Mayor dinamismo a mercados, mayores transacciones comerciales.
- Funcionamiento de microempresas de Mantenimiento: 429 de la primera etapa y 191 de la segunda.
- Empleo permanente Directo para 6,138 personas.
- Empleo temporal Directo para más de 49,000 personas (Obras).
- Creación de 352 Proyectos
- Productivos (para mas de 1,000 personas).
- Capitalización de contratistas locales
- Reducción de costos de transporte de carga y pasajeros en algunos casos al 20%.
- En algunos caminos vecinales de Apurimac, Ayacucho y Cajamarca se han observado incrementos de tráfico vehicular mayores al 100% luego de ser rehabilitados.
- La presencia permanente de los microempresarios dan Confiabilidad ha las comunidades rurales y público en general sobre la transitabilidad
- Disminución en tiempo de viaje.

Cuadro 2

Conceptos (Muestra, 4 de 18)	**Antes PCR**		**2000**		**2004**	
	Muestra	Testigos	Muestra	Testigos	Muestra	Testigos
Minutos promedio de recorrido caminos	155.4	79.9	81.4	59.3	72.4	86.6
Vehículos promedio a la semana	24.5	33.2	46.0	43.2	57.6	45.8
Promedio personas solicitaron consultas en dependencias salud	1568	1765	1947	2060	2424	1929
Personas en pobreza, %. Método del gasto			70.5	67.3	70.3	71.5

LECCIONES APRENDIDAS

- Programas de rehabilitación de caminos rurales no son solamente programas de ejecuciones de obras. Involucran una serie de modificaciones en relaciones económicas, sociales y políticas que deben ser integradas a la evaluación de los programas. El hecho de considerar esquemas como las ventanas de desarrollo local le dio un sentido amplio el programa para contribuir al alivio a la pobreza y permitió potenciar sus resultados.
- Esquemas estandarizados de planeamiento, ejecución y seguimiento de proyectos en unidades ejecutoras facilitan la implementación del Programa. El disponer de un sistema

único de planeamiento, ejecución y seguimiento resulta en factor clave. Esto permite Identificar costos reales, detallar la demanda y efectuar una priorización técnica. Esto facilita incorporar los ahorros que genera una ejecución eficiente para aumentar los beneficios del proyecto.

- La participación efectiva de los involucrados es un factor clave para el logro de resultados así como para asegurar la sostenibilidad de los mismos. Su incorporación en los proyectos desde la identificación y el diseño ayudaría en forma significativa al logro del propósito.
- La flexibilidad en los esquemas de planeamiento, permite un mayor campo de acción para una mejor toma de decisiones, lo cual efectiviza la ejecución de lo programado, en cuanto a la variación de los costos, plazo de la ejecución de las obras, etc.
- Se deben clarificar los procesos de adquisiciones y contrataciones en los Gobiernos Locales, a fin de facilitar a los postores el concurso a los mismos, lo cual rebajaría sustancialmente el número de procesos declarados desiertos.
- El fortalecimiento de las capacidades de los institutos Viales Provinciales, genera la conversión de estos en unidades independientes, capaces de autofinanciarse, a través de diversas actividades como la elaboración de perfiles, expedientes técnicos entre otros, buscando financiamiento adicional al del programa y desarrollándose fuera de el.
- Es importante disponer de un plan final, al término del programa a fin de identificar los puntos críticos de la ejecución, para poder implementarlos y mejorarlos en el futuro.
- Es necesario el apoyo a los Gobiernos Locales, por ejemplo con la transferencia de capacidades (cognitivas, técnicas y profesionales), la facilitación de herramientas de gestión (inventario y planes viales, inscripción y codificación de caminos), para asegurar la sostenibilidad del impacto del proyecto.
- Es importante atender la instrumentación de políticas a nivel descentralizado (gobiernos locales) La integración de género ha sido un instrumento útil para contribuir con el empoderamiento de los ciudadanos y ciudadanas rurales.

PREMIOS Y DISTINCIONES

Debido al modelo de intervención e impactos descritos, el Programa Caminos Rurales, ejecutado por PROVÍAS DESCENTRALIZADO, se ha hecho merecedor a los siguientes reconocimientos internacionales y nacionales:

- Banco Mundial (BIRF) el Premio a la Excelencia 2001 como uno de los tres mejores proyectos del mundo, al haber superado las metas del Convenio con los impactos directos las zonas pobres del país.
- Banco Interamericano de Desarrollo (BID), en razón de contar con el mejor equipo de trabajo, en favor de comunidades y familias pobres del ámbito rural del Perú, año 2003, entre 25 proyectos de Latino América.
- ONG Ciudadanos al Día (CAD), año 2005, Premio a las Buenas Prácticas Gubernamentales, en la Categoría: Promoción del Desarrollo Económico a Nivel Nacional, debido a los impactos de a través de la rehabilitación y de un sistema de mantenimiento sobre la base de microempresas, sostenible, tercerizado y generador de empleo en el medio rural, participativo, descentralizado, complementario y eficiente.
- Radio Programas del Perú, por la promoción de proyectos productivos mediante la Ventana para el Desarrollo Local

Annex 8. Comments of Cofinancier

Comments from IaDB

Rodolfo Huici, Task Manager

La experiencia del BID en esta operación ha sido muy positiva, particularmente en los siguientes ámbitos:

Evaluación del proyecto. El diseño del proyecto, al igual que su primera etapa, fue estructuralmente correcto, a la vez que permitía suficiente flexibilidad al ejecutor para adaptarlo a las necesidades de los diversos actores. Algunos temas que parecían inicialmente altamente inciertos, como la cofinanciación municipal del mantenimiento, terminaron convirtiéndose en unos de sus aciertos más significativos. Otro tema igualmente relevante fue el piloto de descentralización, que superó largamente las expectativas más ambiciosas.

Desempeño del ejecutor. PVD (antes PROVIAS Rural) demostró ser una agencia ejecutora capaz, abierta a sugerencias internas y externas, manteniendo su capacidad de aprendizaje, flexible e innovadora. Es la gran responsable de los buenos resultados logrados y, con su liderazgo institucional, se consiguieron los objetivos mencionados, así como la aprobación del Programa de Transporte Rural Descentralizado, que le dará continuidad temporal y expansión geográfica la Programa de Caminos Rurales. Hay un tema, si embargo, al que deberá ponérsele mayor énfasis, y es el de los aspectos técnicos. PVD continúa aplicando preceptos técnicos (diseños de ingeniería, estándares técnicos, gestión del mantenimiento) establecidos y mejorados en el programa inicial y este que acaba de finalizar. Sin embargo, con la descentralización del Programa, nuevos actores aparecen y, para ellos, el enfoque técnico de actuación es primordial. Este enfoque es la entrada del Programa a los IVP y gobiernos regionales y debe hacerse hincapié en la naturaleza técnica de las intervenciones, mejorar la evaluabilidad de los caminos (duración de las obras, calidad del mantenimiento, oportunidad de poner el camino en un mantenimiento periódico, costos y dificultades involucradas, metodologías de intervención, sistemas de gestión, etc.) y el aprendizaje que se obtiene de la diversidad de intervenciones. Esto implica que PVD debe cambiar su rol de agencia de ejecución a una “agencia de inteligencia”, algo que el PTRD plantea de manera creciente, pero que debe profundizar en los aspectos de ingeniería.

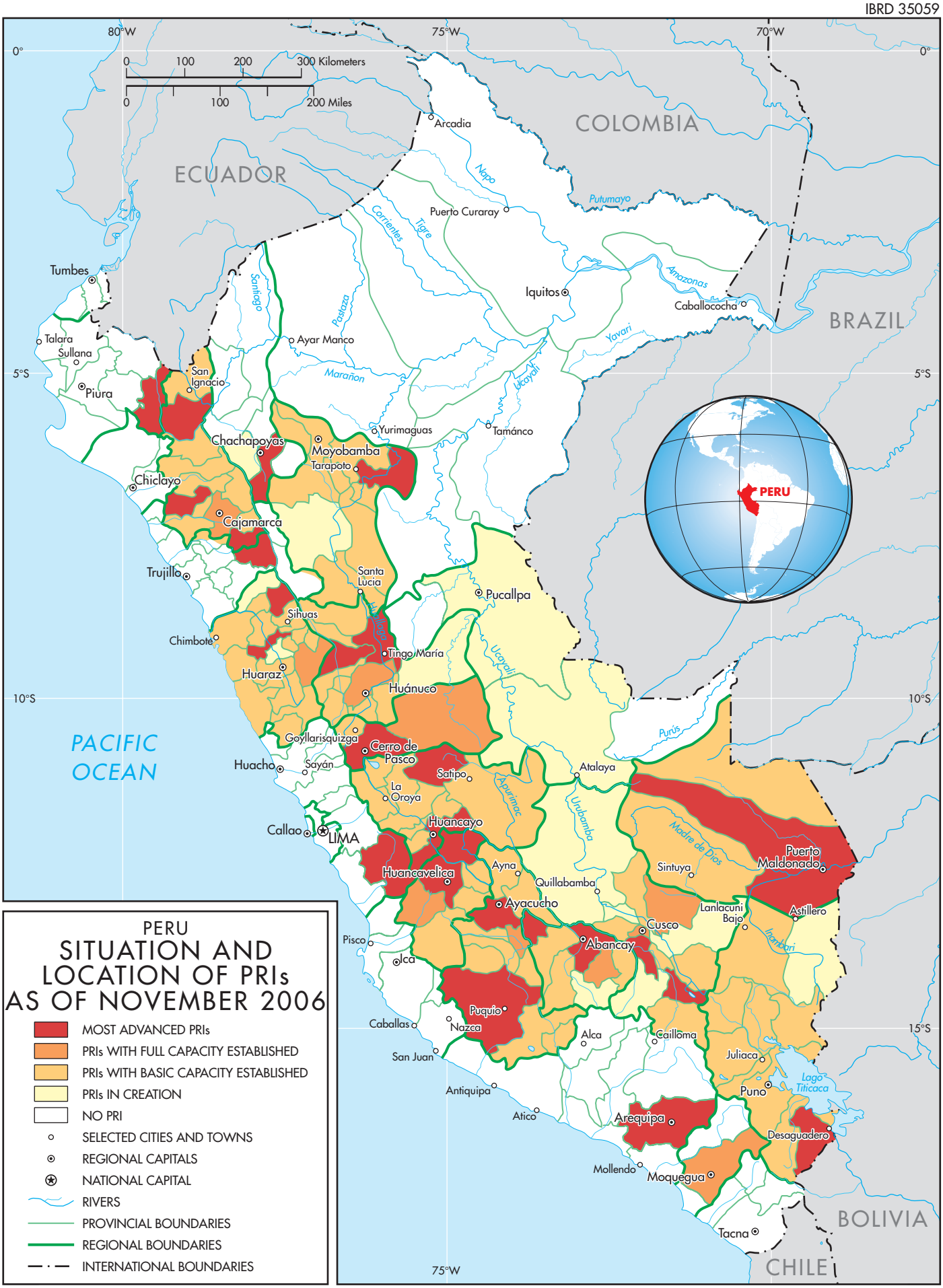
Desempeño del Banco Mundial. El trabajo conjunto de los bancos continuó el buen desempeño logrado durante la primera fase del Programa de Caminos Rurales. Para su mejor comprensión, conviene dividir el trabajo en dos ámbitos. Cuando hablamos de los aspectos técnicos, los equipos conjuntos permitieron dar una profundidad al Programa que posiblemente de actuar de manera independiente no se hubiera logrado; esta presencia conjunta es algo que las propias autoridades apreciaron. El segundo ámbito es el de los aspectos fiduciarios, en particular adquisiciones. Aquí, las diferentes culturas institucionales aparecen y, si bien ambas instituciones habían “resignado” ciertos

aspectos de sus procedimientos, con vistas a permitir un mejor desempeño de PVD en la ejecución del Programa, estas culturas diferenciadas volvían a aparecer en oportunidad de las revisiones periódicas, sin tener en cuenta si las normas eran aplicables a las particulares condiciones de contratación en ámbitos rurales aislados. Este tema debe ser analizado con flexibilidad para evitar poner al ejecutor en posición de incumplimiento con una u otra institución y, más importante aún, adoptando procedimientos que no permiten dar adecuada respuesta a las necesidades de los gobiernos y comunidades locales.

Annex 9. List of Supporting Documents

1. Project Concept Note
2. Second Rural Roads Project; Project Appraisal Document; The World Bank; May 25, 2001.
3. Regional Transport Decentralization Project; Project Appraisal Document; The World Bank; June 15, 2005.
4. Decentralized Rural Transport Project; Project Appraisal Document; The World Bank; November 15, 2006.
5. *Evaluación Económica, Social, Ambiental e Institucional del Programa de Caminos Rurales;* Instituto Cuanto; August 2000.
6. *Elaboración de la línea de base del Provias Rural*; Instituto Cuanto; August 2004.
7. *Premio a las Buenas Practicas*; Provias Rural, March 2005.
8. *Situación de los Servicios de Transporte en Zonas Rurales del Perú*; José Luna, 2004.
9. *Análisis de los Servicios de Infraestructura Rural y las Condiciones de Vida en las Zonas Rurales de Perú*; Javier Escobal and Máximo Torero, 2004.
10. Peru – Rural Infrastructure in Peru – Effectively Underpinning Local Development and Fostering Complementarities; The World Bank; January 26, 2006.
11. *Roads towards Local Development*; Elizabeth Dasso, in Thinking Out Loud VI, Innovative Case Studies on Participatory Instruments; The World Bank; Autumn 2005.
12. *Rural Infrastructure* (Chap. 12); Nicolas Peltier-Thiberge, in An Opportunity for a Different Peru, Prosperous, Equitable and Governable; The World Bank, 2007.

IBRD 35059



MAY 2007

IBRD 35515

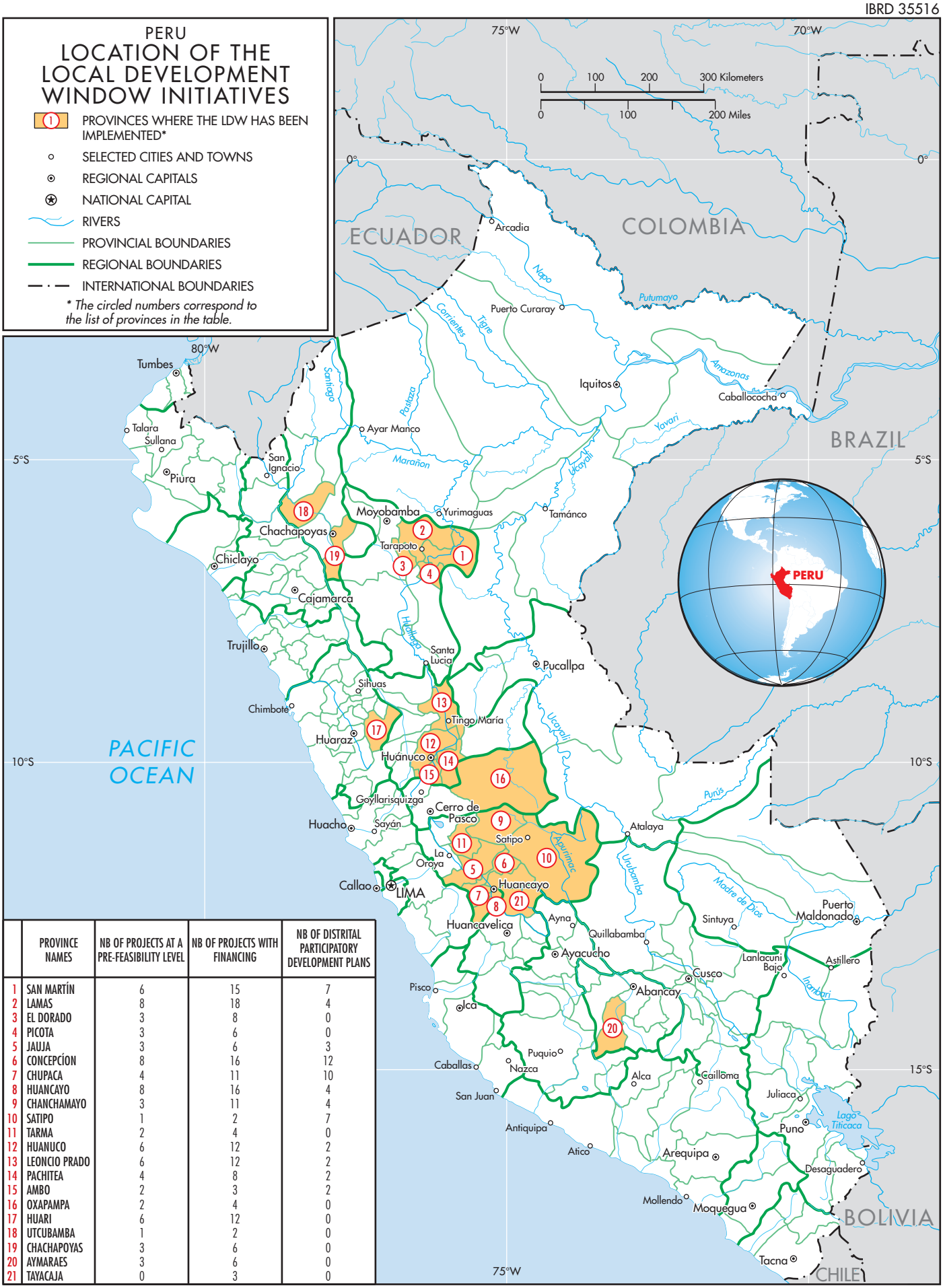
MAY 2007

IBRD 35516

PERU
LOCATION OF THE LOCAL DEVELOPMENT WINDOW INITIATIVES

- (1) PROVINCES WHERE THE LDW HAS BEEN IMPLEMENTED*
- SELECTED CITIES AND TOWNS
- REGIONAL CAPITALS
- NATIONAL CAPITAL
- RIVERS
- PROVINCIAL BOUNDARIES
- REGIONAL BOUNDARIES
- INTERNATIONAL BOUNDARIES

** The circled numbers correspond to the list of provinces in the table.*



	PROVINCE NAMES	NB OF PROJECTS AT A PRE-FEASIBILITY LEVEL	NB OF PROJECTS WITH FINANCING	NB OF DISTRITAL PARTICIPATORY DEVELOPMENT PLANS
1	SAN MARTÍN	6	15	7
2	LAMAS	8	18	4
3	EL DORADO	3	8	0
4	PICOTA	3	6	0
5	JAUJA	3	6	3
6	CONCEPCÍON	8	16	12
7	CHUPACA	4	11	10
8	HUANCAYO	8	16	4
9	CHANCHAMAYO	3	11	4
10	SATIPO	1	2	7
11	TARMA	2	4	0
12	HUANUCO	6	12	2
13	LEONCIO PRADO	6	12	2
14	PACHITEA	4	8	2
15	AMBO	2	3	2
16	OXAPAMPA	2	4	0
17	HUARI	6	12	0
18	UTCUBAMBA	1	2	0
19	CHACHAPOYAS	3	6	0
20	AYMARAES	3	6	0
21	TAYACAJA	0	3	0

MAY 2007