

Document of
The World Bank

Report No: 22110-PE

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED LOAN
IN THE AMOUNT OF US\$50 MILLION
TO THE
REPUBLIC OF PERU
FOR THE
SECOND RURAL ROADS PROJECT
MAY 25, 2001

**Finance, Private Sector and Infrastructure Department
Country Management Unit - LCC6C
Latin America and Caribbean Region**

CURRENCY EQUIVALENTS

(Exchange Rate Effective April 2001)

Currency Unit = Córdoba
C\$13.1 = US\$ 1.00
US\$ 0.076 = C\$1:00

(US\$1:00 = C\$7.8 in December, 1995)

FISCAL YEAR

January 1 December 31

ABBREVIATIONS AND ACRONYMS

ADT	Average Daily Traffic
ARI	Acuerdo de Reestructuración Institucional Institutional Restructuring Agreement
CAS	Country Assistance Strategy
COERCO	Corporación de Empresas Regionales de Construcción Regional Highway Construction Agencies
DANIDA	Danish International Development Agency
DGP	Dirección General de Planificación - Directorate General of Planning
DGTT	Dirección General de Transporte Terrestre - DG of Transport
DGV	Dirección General de Vialidad - Directorate General of Roads
EAT	Equipo Apoyo Técnico - Technical Support Team
ERR	Economic Rate of Return
HDM	Highway Design and Maintenance Model
IDB	Inter-American Development Bank
MCT	Ministry of Construction and Transport
MTI	Ministry of Transport and Infrastructure
PPMM	Proyecto Piloto de Microempresas de Mantenimiento Pilot Project of Microenterprises for Maintenance
RMF	Road Maintenance Fund
UNDP	United Nations Development Program
VOC	Vehicle Operating Cost

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PERU
SECOND RURAL ROADS PROJECT

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MAP(S)
IBRD No. 31453

PERU
SECOND RURAL ROADS PROJECT
Project Appraisal Document

Latin America and Caribbean Region
LCSFT

Date: May 25, 2001
Country Manager/Director: Isabel M. Guerrero
Project ID: P044601
Lending Instrument: Sector Investment & Maintenance Loan (SIM)

Team Leader: Jose Luis Irigoyen
Sector Manager/Director: Danny M. Leipziger
Sector(s): TR - Rural Roads
Theme(s): Rural Development; Poverty Reduction

Poverty Targeted Intervention: Y

Program Financing Data

Loan Credit Grant Guarantee Other:

For Loans/Credits/Others:

Amount (US\$m): 50

Proposed Terms (IBRD): Variable Spread & Rate Single Currency Loan (VSCL)

Grace period (years): 5

Years to maturity: 17

Commitment fee: 0.75%

Front end fee on Bank loan: 1.00%

Financing Plan (US\$m): Source	Local	Foreign	Total
BORROWER	51.00	0.00	51.00
IBRD	0.00	50.00	50.00
INTER-AMERICAN DEVELOPMENT BANK	42.71	7.29	50.00
Total:	93.71	57.29	151.00

Borrower: GOVERNMENT OF PERU

Responsible agency: MINISTRY OF TRANSPORTATION & COMMUNICATIONS (MTC) - PERT-PCR

Av. Garcilaso de la Vega 1351 - Centro Civico y Comercial de Lima, Lima 1

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Estimated disbursements (Bank FY/US\$m):

FY	2002	2003	2004	2005				
Annual	3.50	14.00	16.00	16.50				
Cumulative	3.50	17.50	33.50	50.00				

Project implementation period: 4.5 years

Expected effectiveness date: 09/30/2001 **Expected closing date:** 06/30/2005

A. Project Development Objective

1. Project development objective: (see Annex 1)

Overall Goal. The overall purpose of the proposed project is 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 Perú. The project is 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 Perú that could complement the Government's multi-sectoral poverty reduction program.

Specific Project Objectives. The specific project development objectives are 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.

The first phase of the RRP was carried out between 1995-2000 in 12 departments that ranked highest in rural poverty. The departments, located mainly in the highlands, were Ancash, Apurimac, Ayacucho, Cajamarca, Cusco, Huancavelica, Huanuco, Junín, Madre de Dios, Pasco, Puno and San Martín. 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, is a cost-effective way to restore basic rural accessibility and stimulate poverty alleviation in the rural highlands of Peru. Rural communities realized that regardless how well roads are rehabilitated, without maintenance 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 on the constraints faced by central agencies to implement rural development programs.

The second phase of the RRP would build on the gains achieved during the first phase to deepen the impact of its activities in the same 12 departments. This second phase would emphasize creating development opportunities through concerted local interventions to enhance the impact of rural accessibility improvement on poverty reduction, and strengthening the institutional and financial sustainability of rural road maintenance to enable a gradual transfer of responsibilities to the local government environment.

2. Key performance indicators: (see Annex 1)

By project end, a comprehensive impact survey would attempt to assess the outcome of project activities on the livelihood of the rural population. (See Annex 11 for a detailed list of the hypotheses and indicators measured at the end of the first phase). The project's contribution towards the goal of reducing rural poverty and improving living standards would 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).

The key development outcomes and the performance indicators selected to measure their achievement at the end of the project are as follows:

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

- 3.5 million beneficiaries in the project area are 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 are 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 Rural Roads Program (PCR) 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.

B. Strategic Context

1. Sector-related Country Assistance Strategy (CAS) goal supported by the project: (see Annex 1)

Document number: 16796-PE

Date of latest CAS discussion: 07/22/97

The overriding objective of the Bank assistance strategy for Peru is to support Government efforts to achieve the sustained, continuous reduction of poverty. The primary elements of the anti-poverty program consist 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 proposed project will be presented together with an update of the CAS, which includes this project under its low case scenario.

The proposed project would strongly support these objectives by restoring basic rural accessibility, improving the availability and affordability of rural transport services, developing provincial and local capacity to manage rural transport assets on a sustainable basis and supporting community-based development initiatives. The project would focus investments on areas with high levels of poverty and emphasize labor-based construction 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, and bring these communities into the economic

mainstream--the essence of any poverty alleviation program. This strategy also implies changing historical behaviors that have resulted from generations living in isolation.

2. Main sector issues and Government strategy:

The Government of Peru is pursuing a comprehensive strategy directed towards economic growth and poverty alleviation. Macro-economic reforms initiated in 1990 are central to this and include: reduction of the public deficit, elimination of price controls, tariff reduction, elimination or reduction of subsidies, and privatization of state-owned assets. The Government has also introduced a broad range of programs for poverty alleviation and improvement of living conditions, with targeted interventions in health, education, agriculture and rural infrastructure. Poverty and social indicators improved between 1994 and 1997, although the improvement in social welfare has not been shared equitably, with rural areas (especially in the highlands) and the indigenous population falling behind. This positive trend could not be sustained between 1997 and 2000 due to a deep economic recession and the devastating effects of *El Niño*, which spurred an increase in poverty rates in both urban and rural areas.

Table 1: Poverty by Region, 1994 – 2000 (percentage of population)

	Poverty Rate (%)			Extreme Poverty Rate (%)		
	1994	1997	2000	1994	1997	2000
Total	53.4	50.7	54.1	19.0	14.7	14.8
Metropolitan Lima	42.4	35.5	45.2	5.5	2.4	4.7
Other Urban Areas	50.4	48.9	49.8	13.0	7.6	8.4
Rural Areas	65.5	64.8	66.1	36.2	31.9	30.1

Source: Instituto Cuánto. Encuesta Nacional de Niveles de Vida, 1994, 1997 y 2000

Poverty = insufficient income to purchase the equivalent of a food basket which would meet energy and protein requirements and satisfy other basic non-food requirements

Extreme poverty = insufficient income to purchase only the equivalent of the food basket.

As rural poverty levels are very high, the social integration of Peru --with its emphasis on improved access for the poor in remote areas to education, health, property rights, and infrastructure services, remains a major priority. With macro-economic reforms and a poverty alleviation safety net in place, the Government has been implementing sector reforms in the agriculture sector to increase productivity and real incomes of the rural poor, while continues improving the quality and coverage of basic social and infrastructure services in rural areas. Continued reduction of rural poverty rates is constrained by the following rural transport sector issues:

Poor rural accessibility resulting from deficient rural transport infrastructure and services. The rural poor in the Sierra have very limited mobility beyond their immediate settlements because of geographic isolation, difficult mountainous terrain and high costs associated with improving transport infrastructure. While these adverse conditions are natural barriers for rural development, to a great extent the lack of rural accessibility stems from the deterioration of existing transport infrastructure, which results in extremely low travel speeds and lack of year-round passability (access). The condition of the rural roads network in the *Sierra* is negatively affected by the lack of adequate drainage systems and by poor maintenance practices, which combines with climatic impacts to result in prolonged road closures and increased safety hazards. Under these conditions, the level of motorized transport has remained low --only a few vehicles venture to reach rural communities-- and the provision of transport services unreliable. Furthermore, for most rural households income limits vehicle ownership to only the most affordable types of non motorized vehicles. A large number of communities rely exclusively on non-motorized transport for travel outside of their settlements, often through neglected and unsafe paths. In spite of the progress made in the last five years to improve rural accessibility, the needs are yet staggering. Box 1 illustrates with an example how

the lack of rural accessibility affects from the real income and quality of life of the poor, to the delivery and use of social services, to the participation in local product and labor markets, to social and political engagement.

Box 1: "A hen for a bar of soap": confronting poor choices in Masisea

As part of project preparation, a series of consultation exercises were performed in five locations along the Ucayali river, which links them with Pucallpa, the department's capital. The message that came across in Pucallpa -a fast growing economic center-- was clear: the *Selva* provides plenty of food and opportunities for those willing to work the land. Masisea is a typical district several hours up the river where around 5,000 inhabitants live. Their testimonies pictured a very different situation. Unable to take their products to the market, farmers near Masisea face unequal trade terms, as far as trading a hen for a bar of soap (which in Pucallpa's market are sold at S./15 and S./1.5 respectively). Just knowing that a vehicle would pass at least every four days, farmers said, would be enough to jump-start production to sell it the regional markets. Malnutrition is rampant, aggravated by the lack of water and sanitation infrastructure and of diversification in the types of crops grown. Because they all produce similar crops, it is also difficult for them to find a local market for their produce. Health care is precarious, and although snake bites are frequent, health posts either lack the serum to treat them or they have let the serum expire. Violence is increasing due to alcoholism and lack of income-earning activities. The district teacher stresses the urgency of underscoring the value of work among residents, but complains that poor access prevents the training of village educators in a new syllabus that emphasizes the connection between work, lifestyle and social welfare. With such accessibility constraints, it would be almost impossible to deploy good health and education services. Improving living standards in Masisea will demand a programmatic effort to tackle the chain of problems that keep its inhabitants in the deprivation trap. Meanwhile, the residents of Masisea are left with poor choices only.

Four distinct cross-sectoral dynamics are related to the lack of basic rural accessibility, altogether contributing to the poor living conditions of rural households:

- (a) *Poor access to social and government services*, such as health, education, justice, policing, and public registries (e.g. birth and marriage certificates). The relevance of transport services can be better perceived when considering the distance or travel times to access those basic services. A recent evaluation of a sample of rural households in the project area showed that the average distance to primary schools was about 2.0 km, about 6.2 km to secondary schools, and much farther for technical or tertiary education. Similarly, household dwellers in the sample had to travel on average about 8.0 km to access basic health care at the local post, and about 30.2 km if they needed to get to a hospital. Poor accessibility has to do with the difficulties faced by the people that travel to the location where the services are provided, but also with the difficulties faced by service providers to reach the rural communities where the poorest and most vulnerable live. In this respect, good accessibility is vital to retaining good service providers. This has been evidenced in the studies carried out to assess the impact of the first three years of the program, where numerous testimonies report how the improvement of rural infrastructure and services has increased the reliability of ambulatory health services, the willingness of *alfabetizadores* to reach communities that were previously perceived as too isolated. An exploratory study on gender issues has shown that the lack of reliable rural transportation impacts poor women and children the most, since women cannot afford being away for unpredictable periods of time as they have to look after their children and household needs.
- (b) *Poor articulation of rural households with markets*. An inefficient transport system is a significant constraint on agricultural efforts in the rural areas. The lack of a reliable transportation, reflected in high transport and transaction costs, hampers the capacity of rural households to articulate with markets and forces them to continue in a subsistence agriculture. Proximity to markets influences effective prices of agriculture inputs and outputs. Purchases of modern inputs and sales of outputs

decline with distance from market, and transport costs influence farm profits through input use and crop marketing decisions. A recent study performed by Grade, a Peruvian think-tank NGO, analyzed the impact of transaction costs in the commercialization of potatoes --the dominant produce of the Peruvian highlands between 2,500-3,500 m above sea level. The study estimated for the research area that transaction costs amounted to about 50 percent of the sale price for producers connected to markets through rural roads, and about 60 percent for producers connected through tracks for non-motorized transport. The report concluded that the volume of sales in the research sample were about 48 percent lower than what they could be due to these high transaction costs.

This poor articulation of rural households and markets is the result of two different impacts of physical isolation: higher cost of transporting rural produce to regional markets, including lower reliability of transport services; and higher transaction costs (i.e., obtaining information about market needs and prices, negotiating contracts, and enforcing the terms of contracts). These two sets of cost affect both small and medium size producers, and represent a severe constraint to the development of rural areas. While the transport of goods to the market is an important component of the total cost of most rural produce, in cases of extreme isolation the transaction costs associated to the development of commercialization strategies can become so significant that practically prevent market transactions from taking place at all. Asymmetries in the access to information and in the ability to enforce contracts also often result in the counterintuitive observation that producers with higher travel costs actually receive lower selling prices for their produce, while producers located closer to the markets and with better and more reliable access roads produce more for sale and obtain higher prices. Poor accessibility also slows down the diffusion of new technologies, increases marketing and production costs. These variables related to commercialization strategies build on the mobility of people to produce the necessary interactions among different agents.

- (c) *A perception of economic and social isolation.* Many communities can only be reached by non-motorized means of transport, as deep rivers and steep slopes become natural barriers to building roads. Poor rural accessibility has resulted in social isolation, one of the major elements of the deprivation trap that perpetuates rural poverty in Perú. Poverty and isolation are linked together because when people are isolated, they are unable to harness the economic and social opportunities within a wider geographic region. Consequently, isolated people can neither take advantage of employment opportunities beyond their settlement --at least without disrupting their household livelihood through forced seasonal or permanent migration-- nor expand their income generating activities through interactions with other centers. Isolation slows down the diffusion of new technologies and the technical assistance, which often are vital to the conversion of a local economy of subsistence to more competitive ones that can expand local economic assets and generate sustained development. This forced local self-sufficiency hinders local specialization and becomes another barrier to economic development.

A sense of isolation is by far the most felt sentiment expressed by rural folks; as it was put by a *comunero* in a participatory workshop held in Sihuas in 1996: "There is a terror that we fear even more than terrorism: the sense of isolation, which suffocates us in our basic needs". The non-motorized transport pilot component under the Rural Roads I project has been an effective way of reaching the most isolated and poor by rehabilitating the informal network of paths used by these communities. The evidence collected through the pilot is showing that this perception of isolation goes beyond physical access constraints to encompass other multiple impacts derived from information constraints (e.g., on market opportunities, availability of basic services), the lack of cash-generating products, and even ancestral behaviors deeply rooted at the community level. By minimizing commercial contacts with their neighbors and largely replicating each others subsistence economies,

highland communities will remain static and primitive.

- (d) *Reduced opportunities to develop income-earning activities.* The concurrence of the factors noted above has severely constrained the capacity of the rural poor to earn cash and develop income-generating activities. Historically, people living in rural areas in the highlands have had little opportunity to earn cash incomes and fully enter the market economy of the region and nation. According to the base line survey performed in 2000, less than 20 percent of households' income comes from wage-earning activities. This percentage sharply contrasts with the 45 to 50 percent observed in similar villages once transport access has been improved.

The resulting under-consumption becomes another barrier to economic diversification, for an economy in which the majority lives at subsistence level is by definition largely confined to the production of subsistence goods. The lack of access to money is a major drawback. The poorest have a number of constraints (fewer income sources, worse health and education) which prevent them from investing in activities with higher return or with long gestation period for the returns to accrue. With little development investment reaching village economies and ever-increasing money needs, it is no wonder that since the 1940s migration to urban areas has been a popular survival strategy. There is evidence that given their limited ability to handle risk, poor rural households allocate their limited labor, land, and capital in such a way as to avoid risk and income fluctuations. The road maintenance micro-enterprise program carried out under the first phase has demonstrated that a constant stream of income to its beneficiaries encourages riskier and higher yielding investments.

Weak institutional and financial base for rural development. The broad national issue of administrative decentralization to local governments has a major bearing on the solutions to sector issues. In Peru, government decision-making and fiscal management is highly centralized and, as with other sectors of the economy, the allocation of responsibilities to regional and local governments in the road sector is far from settled. The weakness of local institutions for governance and program administration, especially in rural communities, is both a symptom of underdevelopment and an impediment to social and economic growth.

In the road sector, the concurrence of responsibilities between the different levels of government is hindering the development of institutional capacity in the municipalities. Currently, all three levels of government (national, regional and municipal) have some authority to build and maintain rural roads, a situation that generates confusion about which level owns the rural roads network and is therefore responsible for its performance. The Municipal Organic Law of 1984 requires that municipalities (both provincial and district) maintain the rural road network. Also, to the extent that they have the resources to do it, municipalities have the authority to build rural roads. The Transport Law passed by Congress in late 1999 also extends such competencies to the Ministry of Transport (MTC). In addition, there is ongoing debate in Peru about the establishment of the Regional Temporary Administrative Council (CTARs) as regional governments that would, among other things, be responsible for the development and management of road networks. While municipalities currently lack the institutional and financial capacity to efficiently manage their rural roads networks, they are in a better position than the MTC to make decisions on the quality of roads that users are willing to support and those that are being provided, since they are closer to road users. Therefore, to efficiently manage the rural roads network, municipalities need to strengthen their organization, develop skills and appropriate management tools, and increase the voice of users (the latter to establish a constituency to whom become accountable).

In addition to institutional weakness, most rural municipalities lack the sources of funding needed to assume real responsibility for road maintenance. On the aggregate, municipal revenues come mostly from property taxes and cover only about 46% of their total expenditures. As shown in the table below, this

situation is even worse for small and rural municipalities, as legislation precludes the imposition of levies on rural lands and property taxes on *comunidades campesinas*, thus limiting their revenue base to the amounts generated by the *alcabala tax* (a tax on property transactions) and fees from transport services. The resulting fiscal deficit is covered through intergovernmental transfers, mostly from the *Fondo de Compensación Municipal* (FCM), which has a bias against recurrent expenditures such as road maintenance. Therefore, a sustainable financing mechanism is required to assist the municipalities while ensuring an adequate level of local ownership over the network, since it is clear that the MTC is not in a position to deliver quality maintenance throughout the entire road system (more than 70,000 km).

Table - Financial Capacity of Municipalities
('000 US\$ and percentages)

	Depart'l Capital		Provincial Capital		Semi-urban		Rural	
TOTAL EXECUTED REVENUE								
A. Communal Municipal Revenue	1,920.9	44.2%	189.4	14.5%	190.8	20.3%	38.1	11.2%
a. Recurrent Revenue	1,903.3	43.8%	188.1	14.4%	190.8	20.3%	33.6	9.9%
Taxes	1,149.3	26.4%	64.5	4.9%	120.0	12.7%	7.1	2.1%
Non-taxes	406.4	9.4%	89.9	6.9%	62.9	6.7%	13.0	3.8%
Fines and sanctions	219.5	5.1%	5.7	0.4%	6.4	0.7%	0.1	0.0%
Other	128.1	2.9%	28.0	2.1%	1.5	0.2%	13.4	4.0%
b. Revenue from Investment	17.6	0.4%	1.3	0.1%	0.0	0.0%	4.5	1.3%
B. Municipal Revenue from Transfers	2,340.8	53.9%	964.8	73.6%	628.1	66.7%	265.4	78.2%
a. For recurrent use	519.3	11.9%	248.7	19.0%	216.1	23.0%	80.6	23.8%
Glass of Milk	179.2	4.1%	86.0	6.6%	116.2	12.3%	38.9	11.5%
Funds from FCM	340.1	7.8%	162.3	12.4%	99.8	10.6%	41.3	12.2%
Other (e.g. 20% of customs)	0.0	0.0%	0.4	0.0%	0.1	0.0%	0.4	0.1%
b. For investment	1,821.5	41.9%	716.1	54.6%	412.0	43.8%	184.8	54.5%
Funds from FCM	1,775.9	40.9%	641.5	48.9%	399.3	42.4%	165.7	48.9%
Other transfers for investment	22.7	0.5%	73.0	5.6%	12.1	1.3%	17.9	5.3%
Other transfers	22.9	0.5%	1.6	0.1%	0.6	0.1%	1.2	0.4%
C. Financing	0.0	0.0%	92.0	7.0%	89.1	9.5%	16.4	4.8%
D. Payments from Balance	64.7	1.9%	64.4	4.9%	33.2	3.5%	19.3	5.7%
Total Municipal Revenue	4,346.4	100.0%	1,310.6	100.0%	941.2	100.0%	339.2	100.0%
TOTAL EXECUTED EXPENDITURES								
A. Recurrent Expenditures	2,301.8	50.8%	417.7	34.2%	462.6	46.9%	96.4	30.7%
a. Personnel	1,604.9	35.4%	213.8	17.5%	193.2	19.6%	26.5	8.4%
b. Goods and Services	649.2	14.3%	166.3	13.6%	130.2	13.2%	56.9	18.1%
c. Other	47.7	1.1%	37.6	3.1%	139.2	14.1%	13.0	4.1%
B. Investments	2,082.6	46.0%	680.4	55.7%	443.0	44.9%	192.7	61.3%
a. Investment Projects	1,981.2	43.7%	565.2	46.2%	388.1	39.4%	152.2	48.4%
b. Other	101.4	2.2%	115.2	9.4%	54.9	5.6%	40.5	12.9%
C. Debt Service	144.8	3.2%	124.1	10.2%	80.2	8.1%	25.3	8.0%
Total Municipal Expenditures	4,529.2	100.0%	1,222.2	100.0%	985.8	100.0%	314.4	100.0%

Source: "Estudio sobre la Capacidad Institucional Financiera de los Municipios participantes en el Programa de Caminos Rurales", Grupo Maximiza, March 1999, based on 230 municipalities in the 12 participating departments. These include 73 provinces, 5 departmental capitals, 45 provincial capitals, 7 semi-urban districts, and 173 rural districts.

Poor coordination and excessive reliance in central government for delivery of rural poverty alleviation programs. Peru now has a decade of experience with a number of poverty alleviation programs focused on rural areas. Recent reviews of this experience point to the need to improve coordination among programs as a key factor to increase their effectiveness. The duplication and weak inter and intra-sectoral coordination meant that important resources, knowledge and expertise were not being used to the best advantage. Poor coordination not only reduces the impact of interventions by missing the opportunity to benefit from synergies and economies of scale, but it also results in an excessive burden of transaction costs and redundant activities for the beneficiary communities. Furthermore, long-term dependency on external resources takes away the incentives to develop community-based mechanisms for self-reliance and may

crowd out spaces for creative partnerships between community organizations and private sector entrepreneurs. Targeting requires information at the municipal level, more inter-institutional coordination, and clear consensus among providers and municipal governments about the nature of benefits and beneficiaries. The evidence from fieldwork suggests that local leaders do know the gradient of poverty in their communities. There is a need to empower local governments for an effective delivery of their responsibilities, strengthening local organizations, developing institutional base for self-help initiatives, and creating space for privately-led growth. The National Poverty Dialogue has opened new spaces for enhancing coordination in this respect (see Section D.3).

3. Sector issues to be addressed by the project and strategic choices:

Improving rural accessibility through rehabilitation of transport infrastructure. The project emphasizes 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. Several advantages are foreseen from this strategy. First, it will 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. Second, through improved road access the project would permit easier coordination among other rural development programs. Third, it introduces local governments to the principle of "network" management (including the informal network of non-motorized tracks), which is key to improving transport services. It will take time and substantial efforts in technical assistance for this principle to take root among local governments, since this is a major change from the current practice where municipalities are mostly limited to occasional road emergency works. Thus, while building an intense road investment program, the proposed project also supports a strong institutional development component. The program will support MTC's policy to emphasize rehabilitation and maintenance over new construction. The project will also provide safer access to rural communities that depend exclusively on non-motorized tracks to meet their basic transport needs.

The second phase of the program will deepen the coverage in the same 12 departments (presently about 36 percent of the designated rural road network in those departments). This limited scope will strengthen the project focus on building institutional and financial capacity in the current departments. In addition, the project will also expand the *Non-Motorized Transport (NMT) component*, introduced as a pilot under the first phase. The emphasis on rehabilitating and maintaining "networks" of rural and connecting roads would continue to ensure poor communities are connected to economic centers. In the *selva* region, however, this connection is provided by river transport. The project would test how to improve the use of intermodal access in the *selva* through a small pilot located along the Ucayali river, between Pucallpa and Atalaya. The pilot would basically consist of building wharves, improving land facilities in small river ports, and rehabilitating the network of non-motorized tracks that connect these ports with villages.

Integrating rural communities and producers to markets and business opportunities. The design of policies to promote a more successful integration to markets requires a better understanding of the relationship between producers' articulation with markets and communities' access to human and social assets (such as education, family size, community organizations and kin networks) and physical and technological assets (land size, fertilizers/improved seeds, public services). Transport is a key element in the formation and widening of markets. While the transport of goods to the market imposes a significant cost, there are other variables related to commercialization strategies, which build on the mobility of people and the resulting interactions among different agents when there is a reliable transportation system in place. Building on a strategic partnership with civil society, government and development agencies, the project will stimulate the creation of local business opportunities integrated with markets. To this end, the project will combine 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 seeks to develop more formal relationships between rural producers and markets through improved access to information and organizational skills and strategic partnerships.

Facilitating the empowerment of local organizations and vulnerable groups . Mobility brings opportunities for enhancing people's capabilities and building the set of norms and networks that facilitate collective action for mutual benefit, which is referred to as "social capital". Under the first phase of the RRP, improved accessibility has facilitated people's--and predominantly women's--interactions outside their homestead, and the acquisition of the skills, knowledge and confidence that such interactions bring about.

The second phase will bring further enhancements to social capital by establishing a "local development window" through a network of strategic partnerships with civil society, government and donor organizations (see Annex 2 for detailed description). Also, the proposed project is designed to tackle some of the dynamics that mediate the ability of project interventions to effect positive changes in many aspects of women daily life, supporting the following measures to engender project activities and promote women empowerment: (i) providing training on gender issues to PCR social staff, majors and community leaders through the institutional development component. This on-going activity is expected to increase gender awareness and develop critical skills to support interventions that will particularly improve women's access to transport services, based on a better understanding of why women and men move around and whether women and men use different types of transport or the road network differently; (ii) fostering implementation arrangements that will gradually but effectively contribute to gender mainstreaming. For example, women involvement in the Non-Motorized Rural Transport would be emphasized by identifying ex-ante those activities where women participation should be targeted; (iii) supporting through the "Local Development Window" specific programs and productive undertakings that would improve women access to resources; and (iv) tracking gender impacts through the project social and impact monitoring system to clarify what gender-differentiated project outcomes can be anticipated, and how different local realities might affect women participation in project activities and benefits. While the project would not set "quotas", women participation in micro-enterprises would be monitored to ensure that the application of the methodology for selecting micro-enterprise members is not biased against women.

All in all, these enhancements offer a more integrated framework for facilitating the accumulation of (income) assets, and through it, making possible community empowerment and social change. By furthering access to other actors in the rural scene, the second phase should facilitate the distribution of (income) assets and, through better participation in the broader social, political, and market institutional network, enhanced control of the manner those assets and other resources are created or exchanged.

Strengthening the framework for decentralization and for rural road maintenance in particular. The Rural Roads Program (RRP) supports a decentralization agenda through its focus on the development of capabilities and institutions at local level and the transfer of resources to local governments. Given its credibility before local level governments, the RRP becomes a suitable venue to further the decentralization effort under a controlled but relentless exercise, whose pace can be aligned with government's progress in the overall decentralization agenda and adjusted to local realities. The project is another step in preparing 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 has been confirmed by the recently approved Transport Law). The project introduces local governments to key principles for systemic management of their rural road networks (including the informal network of

non-motorized tracks). Acknowledging that it will take time and substantial efforts for these principles to take root among local governments (as well as for central government to devise an appropriate fiscal decentralization scheme), the project supports: (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 PCR's field units (currently 10 units in operation) to explore arrangements for delegating responsibility through performance agreements; (iii) a pilot on decentralized management of provincial road networks, which will test the use of institutional and financial models, information reporting systems and appropriate mechanisms for the flow of funds. The pilot will help to build trust among provincial and district municipalities involved and establish evaluation and disclosure practices, both intermediate but necessary goals for a sustainable decentralization; 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 RRP. There is agreement that in the long run, the role of PCR will shift from the current execution of work programs to monitoring performance and provision of technical, institutional and financial assistance for programs carried out by a diverse number of decentralized executing agencies, including regional entities and municipalities.

The project would continue supporting maintenance of those roads and tracks rehabilitated under the RRP. Since rural roads and unclassified tracks fall under the jurisdiction of municipal governments and communities, the project would gradually transfer to them more responsibility for rural roads maintenance. The rural roads program requires that municipalities develop the institutional and financial capacity to manage and finance, at least partially, the maintenance of the rural road network. This implies: (i) clarifying responsibilities among different levels of government; (ii) strengthening the role of the province as the focus for rural road network management and financing; (iii) strengthening municipal and central government financial capacity through a co-financing system; (iv) strengthening road maintenance management capacity at the municipal level; (v) involving users in road management at the provincial level; and (vi) establishing performance reporting and accountability systems.

The project would make operational a cofinancing mechanism for road maintenance under which municipalities would contribute to defraying the cost of maintenance. The mechanism is based on: (i) transfers from central government through budgetary allocations to PCR/MTC to cover about 50 to 60 percent of maintenance costs at the beginning and declining with time as more resources become available at the local level; and (ii) contributions by municipalities from local revenue or from current intergovernmental transfers allocated to the municipalities under the FCM to cover the remaining 40 to 50 percent. This represents a reasonable fiscal effort. The implementation of this mechanism in all the provinces where the project is active will start in 2001 with the signing of new Participation Agreements, which include the operational arrangements for the co-financing mechanism and the approval of the respective budgetary allocations by the municipalities involved. Municipalities will start effectively contributing to road maintenance by January 1, 2002.

C. Project Description Summary

1. **Project components** (see Annex 2 for a detailed description and Annex 3 for a detailed cost breakdown):

Table with project component description and cost.

Component	Sector	Indicative Costs (US\$M)	% of Total	Bank-financing (US\$M)	% of Bank-financing
Rehabilitation of Rural Roads and Connecting Roads	Rural Roads	61.70	40.9	26.20	52.4
Routine and Periodic Maintenance of Rural Roads and Connecting Roads	Rural Roads	51.80	34.3	13.89	27.8
Improvement of Non-Motorized Rural Transport	Rural Roads	5.65	3.7	2.40	4.8
Provincial Road Management Pilot	Rural Roads	2.95	2.0	1.18	2.4
River Transport Improvement Pilot	Rural Roads	5.30	3.5	2.20	4.4
Institutional Development:	Institutional	1.37	0.9	0.58	1.2
Improvement of Rural Transport Policy and Strategies:	Development				
* Improvement of Rural Road Planning and Management	Institutional Development	3.71	2.5	1.57	3.1
* Development of community-based microenterprises for road maintenance	Institutional Development	2.80	1.9	1.18	2.4
* Strengthening local capacity to engage in social and economic development initiatives (Local Development Window)	Institutional Development	0.72	0.5	0.30	0.6
* Project Administration		14.00	9.3	0.00	0.0
Total Project Costs		150.00	99.3	49.50	99.0
Front-end fee		1.00	0.7	0.50	1.0
Total Financing Required		151.00	100.0	50.00	100.0

Note: Indicative costs for Front-end fee includes both the Bank's front-end fee and IDB's supervision fee

2. Key policy and institutional reforms supported by the project:

Transport Sector Policies. Key policies sought by the project include:

- Improving rural accessibility to unlock economic development and reduce poverty in rural areas by supporting transport improvements targeted to increase rural communities' access to basic social services, economic activities and employment opportunities, with gender equity.
- Increasing private sector participation in the rural road sector to increase efficiency in the delivery of road programs, by: (i) contracting out rehabilitation works and engineering services to small firms; and (ii) outsourcing maintenance activities to community-based organizations and micro-enterprises under annual performance-based contracts; and

- Strengthening the framework for rural road maintenance to ensure that rural accessibility gains are sustained through a properly maintained rural road system.

Social Development Policies. The project also aims at enhancing the articulation of social development and coordination among poverty alleviation programs in rural areas, so as to optimize the impact of public funds, minimize the burden on beneficiary communities, and increase Government's ability to put in place a more holistic approach for local development. This entails:

- empowering rural communities to define their development priorities and the interventions needed to support their development plans;
- increasing flexibility in the screening/approval/targeting of interventions under the various programs and enhancing coordination during their execution;
- strengthening local and community-based organizations to jump start development initiatives and access employment and cash income generation activities; and
- forming partnerships with the private sector and civil society organizations to open up spaces for forms of privately-led growth that leverage the multiplier effect of public expenditure.

3. Benefits and target population:

The project's intended beneficiaries are divided into three groups. First, there is the population at large benefiting from better access in rural areas. In particular this will benefit the poorest rural communities located in the *sierra* region, since sub-project selection criteria give priority to these areas. The potential number of beneficiaries is the 4.5 million rural population living in the 12 departments targeted under the project. All in all, this represents about 70 percent of the rural population of Perú and about 20 percent of the total. Annex 11 presents a detailed profile of the project beneficiaries derived from the study carried out in 2000 to assess the outcome of the first phase of the RRP. In these rural communities women constitute a major beneficiary group for road and track improvements. They are the largest group involved in taking products to the markets and improved road reliability should reduce their transport costs and increase their income earning capacity. Better access to social services, such as hospitals and schools, would offer greater proportionate benefit to women and children. The first phase of the program has also demonstrated that there is considerable space for the involvement of women directly in road work activities.

Secondly, there are the small enterprises and community groups that are formed or strengthened as a result of their involvement in the execution of the works financed by the project. This will improve the individual skills of the workers who will be employed, and the corporate competitiveness of the small firms that will carry out the works so as to develop their capacity to respond to increased opportunities for sustained employment after project completion. Since most of the contractors have been working on a sporadic informal basis, the project will contribute to helping them achieve a transition from the informal to the formal sector. The project also benefits local consultants and NGOs that will be engaged in the preparation of engineering designs, social diagnosis reports, and supervision of works, providing expanded opportunities for their development under practices that provide the necessary motivation for quality and efficiency. Access to opportunities will break the conundrum of "no work-no experience-no qualification". In particular, the creation of road maintenance micro-enterprises has become the cornerstone of the project success. Box 2 illustrates, through an example, the large social impacts of this program. Annex 11 describes the main achievements of the micro-enterprise so far, which go well beyond delivering maintenance services. Micro-enterprises received under the project basic entrepreneurial and organizational skills as well as access to a reliable cash-flow. This has empowered the micro-enterprises to undertake productive projects and other local development initiatives beyond their maintenance contract responsibilities, and at their own risk, with benefits that spill over to the communities where they are based.

Thirdly, there are the municipal governments to be strengthened under the project. The project targets about 110 provincial municipalities and their respective district municipalities. They will be exposed to institutional and financial arrangements for a more cost-effective management of their rural roads networks.

Box 2: A day with "Illari", a microenterprise for road maintenance

The micro-enterprise *Comité Vial "Illari"* is responsible for maintaining a stretch of about 43 km. The gravel road serves the villages of Talavera and Occobamba, and carries about 20 vehicles a day (from about 3 vehicles a day in 1995). Though it was rehabilitated in 1995, the road remains in good condition due to the permanent work done by the micro-enterprise to keep the drainage system working, fill potholes and improve the stability of lateral slopes. At the time of our visit, the micro-enterprise had borrowed a small truck from the municipality and was building a retaining wall. Its president was so proud of the quality of the work, that during the visit almost forced us to stop at, and inspect each retaining wall built by the micro-enterprise as part of the maintenance contract (at the beginning of the contract, however, the micro-enterprise was required to rebuild the first retaining wall because it failed to comply with quality standards).

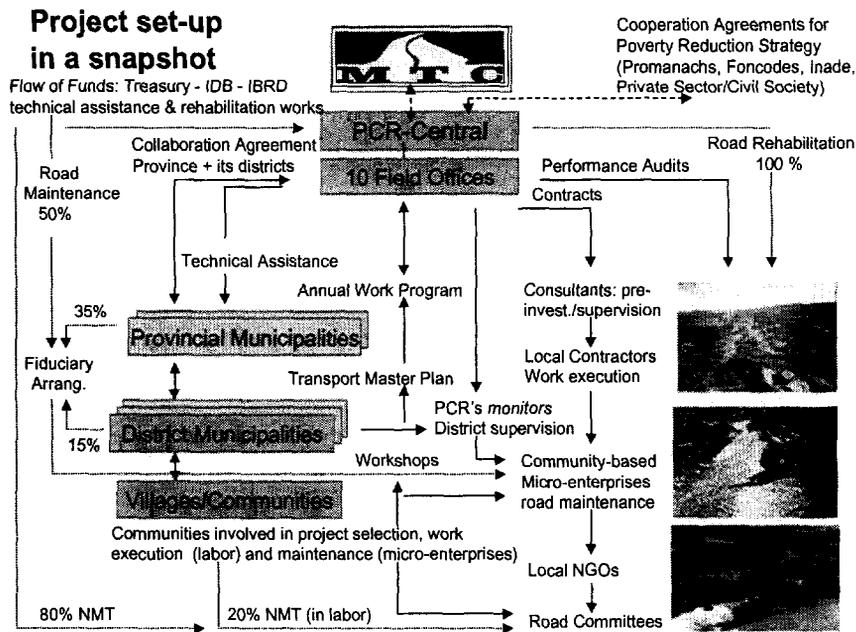
The micro-enterprise consists of 16 members who designate their president and determine how the monthly payment (about US\$100 equivalent per km including VAT) is assigned; basically, about 80% of net payments is devoted to daily wages and the remaining 20% is allocated to various uses, including an investment fund (about 7%), an aid reserve fund (about 5%), and reserves for acquisition of tools (3%), travel expenditures (about 3%) and miscellaneous expenditures (2%). The micro-enterprise operates a saving account in *Banco de Crédito* and owns a small place where members receive on-the-job training from two "monitors" (an engineer and an accountant) and keep their books and accounting records.

From the dialogue with the micro-enterprise staff, it came clear the empathy between members and the two monitors appointed by PCR to coach the microenterprise, the dynamism and team spirit of the members, the positive leadership of the president who contributes to the work, and the aspirations to further their training. Their code of honor is based on the Inca rule *Ama Lulla, Ama Quella, Ama Sua*: (don't be a liar, don't be lazy, don't be a stealer). With the monitors they are learning how to perform as entrepreneurs. "After many years not using our skills, our brains were dormant" said one of the members, "so it takes some time until we can assimilate the training". They named the micro-enterprise "Illari" which in *quechua* means "awakening". Though still too early, they are beginning to dream about new productive endeavors for their micro-enterprise (they are planning to buy a vehicle to transport people in the near future).

Source : Supervision Mission Report, November 1997.

4. Institutional and implementation arrangements:

Project Set-up. The proposed project will continue relying on the successful arrangements used during the first phase of the RRP. MTC will have overall responsibility for project coordination and implementation. Actual implementation will be delegated to a specialized unit, the *Proyecto Especial de Rehabilitación del Transporte -Programa de Caminos Rurales* (PCR), which was created in July 1995 by Ministerial decree. With staff and budget separated from the rest of the Ministry, the unit enjoys ample technical, administrative and financial autonomy. Its limited personnel is engaged at private-sector salaries and paid from local counterpart funds. Most of the tasks are undertaken by consultants engaged under the project. The unit is led by an Executive Director who reports directly to the Vice-Minister of Transport. Implementing the project within the proposed time frame demands strong skills to manage hundreds of road links and contracts spread over difficult remote rural areas. PCR will delegate more day-to-day responsibility on its 10 field offices. Due to the special nature of the statutes of PCR, its duration is in principle limited to the execution of the proposed project. At the third annual review, Government jointly with IDB and the Bank will review the need to continue with PCR after project completion, taking account of the progress made in the decentralization agenda. MEF and MTC have agreed that in the long run the role of PCR will 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.



The project operational set-up would have a three-layer organization that would attempt to efficiently achieve an adequate monitoring of project execution, the decentralization of responsibilities, and the participation of municipalities and communities, as follows:

- (a) PCR's central unit in Lima would be responsible for general project management. This would entail:
 - (i) establishing indicative budgetary allocations and investment programs;
 - (ii) entering into inter-administrative "Participation Agreements" with provincial municipalities with jurisdiction over the project areas (see Box 3);
 - (iii) coordinating interventions with other central government agencies as well as civil society representatives involved in rural development programs through Participation Agreements and recurrent consultations;
 - (iv) designing and coordinating the institutional strengthening component;
 - (v) issuing implementation guidelines (through the Operational Manual and further reviews of it);
 - (vi) carrying out procurement of consultant services and contracts for civil works;
 - (vii) allocating funds to the fiduciary arrangements set under the maintenance co-financing mechanism;
 - (viii) upkeeping the project impact monitoring system;
 - (ix) auditing performance of its deconcentrated zonal units; and
 - (x) preparing PMR reports and processing disbursement requests.

- (b) The deconcentrated zonal units of PCR (*Unidades Zonales, UZ*), located in the project areas (almost one per department or region participating in the project), would be responsible for managing the work programs. This would entail:
 - (i) promoting the project among, and entering into agreements (*convenios*) with municipalities and communities;
 - (ii) coordinating their rural development and poverty alleviation programs with other decentralized agencies and NGOs established in the area;
 - (iii) defining and programming investments in consultation with the municipalities;
 - (iv) procuring small contracts; and
 - (v) monitoring and reporting implementation of the various project components.

- (c) Municipalities and communities at the local level. Though the project funds would not be channeled to the municipalities, they would participate in:
 - (i) agreeing between provincial and district municipalities on the priorities of the road subprojects identified by the communities, and signing the respective Participation Agreements with PCR;
 - (ii) contributing to the cost of maintenance through the co-financing mechanism;
 - (iii) undertaking the institutional action programs agreed under the

project, including preparing transport plans, road inventories and exchanging information on the performance of the rural road system; (iv) overseeing the delivery of programs, including approving maintenance works and payments and reporting to PCR any difficulties in the implementation of the project; and (v) joining PCR in monitoring and evaluating project impacts.

Rural communities in the targeted districts would be directly involved in: (i) identifying road subprojects and recommending solutions for improving transport services along the rural road network as well as the unclassified network of NMT tracks; (ii) contributing to the cost of the works for community-managed components, forming *Comités Viales Rurales* to undertake the improvement of NMT tracks and maintain them thereafter; (iii) undertaking at their own initiative and risk local development initiatives identified with project assistance; and (iv) joining PCR in monitoring and evaluating project impacts.

Box 3: Key features of Participation Agreements

The Project Operational Manual includes a standard "Collaboration Agreement" to be used during project implementation. Key features of the standard agreement are:

- *Legal Aspects.* The agreement is between MTC (represented through PCR) and the provincial municipality, but all district municipalities within the province must also sign in to enhance coordination among districts and between districts and their provincial municipalities. Responsibility for administering contracts and managing project activities is vested in PCR. The authority of Municipalities to manage rural roads and to promote construction, rehabilitation and maintenance of rural roads is reaffirmed.
- *Coordination.* Coordination between municipalities and PCR is mandatory for selecting roads, identifying and evaluating subprojects and carrying out studies and works related to these sub-projects. Municipalities may also participate in the execution of project works provided they comply with the requirements and procedures set forth in the Project Operational Manual.
- *Commitments undertaken by Municipalities.* Municipalities are required to: (i) enter into the institutional strengthening program and carry out the action plans drawn up together with PCR; (ii) support development of micro-enterprises and community-based maintenance committees for road maintenance; (iii) set up with district municipalities the fiduciary arrangements required under the project to support the flow of funds for road maintenance; and (iv) make budgetary allocations and release the funds to maintain roads rehabilitated under the project on a timely basis from year 2002 and thereafter.
- *Commitments undertaken by MTC.* MTC is required to: (i) keep municipalities fully informed of all project activities; (ii) provide technical assistance for institutional strengthening in rural road management; (iii) evaluate together with municipalities the results of project activities; and (iv) establish a financial mechanism to allow municipalities continue funding maintenance of the roads rehabilitated under the project and channel central government contributions as required under the co-financing mechanism.

Project Monitoring. The monitoring of project implementation encompasses two levels. One consists of the reviews of project performance and annual plans that will be undertaken by PCR on a continuous basis; the other consists of periodic performance audits, participatory evaluation exercises and impact assessment studies that would be carried out by independent firms and specialized NGOs. The application of the project information and monitoring system would allow PCR, IDB and the Bank to ascertain the progress in the implementation of each sub-project and the degree of achievement of the project development objectives. Every six months, auditors acceptable to IDB and the Bank will conduct a performance audit of the implementation of the project by examining a sample of sub-projects under execution by the regional offices. The audits will focus on the execution of the project physical components (quality and cost of works), procurement procedures, and compliance with the guidelines of the Project Operational Manual and the performance indicators agreed between PCR and each UZ. Through the audit, cost comparisons will be made available and reviewed to identify procurement problems or other factors contributing to variations among the different regions; the scope of the sample of work sites included in the audit will be adjusted according to these findings.

Reporting. PCR will prepare quarterly progress reports for all components of the project, which will be sent to IDB and the Bank within one month after the end of each quarter. The reports will describe: (i) progress achieved during the previous quarter in the implementation and in the achievement of the objectives of the project based on the performance indicators; (ii) an assessment of the problems and issues derived from the implementation of the project; (iii) information on procurement processes and contract awards completed during the quarter; and (iv) updated implementation and disbursement schedules for the following quarter; and (v) status of compliance with the legal covenants contained in the Loan Agreement. The reports will provide timely and updated information on project implementation, highlighting issues and problem areas, recommending actions and commenting on progress in executing previous recommendations.

Annual Reviews. Each year, the Bank, IDB and the Government will conduct a formal joint review to assess: (i) progress in project implementation and achievement of the project objectives on the basis of agreed performance indicators and targets; (ii) the performance of PCR and each of its field units; (iii) the effectiveness of the work programs in terms of community and local government involvement, local contractors response, coordination with other development programs, and achievement of project objectives; (iv) progress in implementing the institutional development components, including compliance of participating municipalities with the Institutional Action Programs; (v) the adequacy of the procedures stated in the Project Operational Manual; (vi) progress in restructuring and strengthening road maintenance administration and finance; and (vii) the justification of the investment and institutional proposals for implementation during the subsequent year. The project implementation schedule and monitoring indicators will be updated during the annual review. In the event of unsatisfactory progress, Government will prepare remedial action plans satisfactory to IDB and the Bank within two months of the review. Participants will include key representatives from MTC, MEF, PCR and its UZs, NGOs involved in project activities, decentralized agencies involved in rural development programs, and when appropriate, groups of beneficiaries.

Mid-Term Review. The annual review scheduled for 2003 will constitute a Mid-Term Review of the RRP, an opportunity for a more comprehensive assessment of the achievements of the project at that date and for a policy discussion on the future of the program. Prior to this review, PCR will conduct an evaluation of the economic, social and environmental impact of the project in a sample of communities along the roads rehabilitated by the RRP and a "control" sample of communities along roads located in the project area but not benefited from the program. In addition to covering the topics listed above, this review will examine the progress made by Government with regard to: (i) its agenda for administrative decentralization and the need to adjust the operational set up of the project and of the RRP accordingly; (ii) the establishment of a strategy for rural roads funding; (iii) the improvement of inter-agency coordination; and (iv) evaluation of the two pilots on Provincial Road Management and River Transport Improvement and the participation of municipalities in project activities, including the possibility that certain municipalities became direct executing agencies under PCR monitoring in subsequent phases of the program. The review will consider proposals for restructuring or reorienting the program, taking account of all relevant sector and project issues.

Project Supervision. Building on the experience gained during implementation of the first phase, IDB and the Bank will supervise the project through a shared project team. The respective task managers will coordinate the timing and composition of field missions. Their frequency will be guided by the progress and special requirements of project implementation. The missions are expected to supervise the project twice a year. However, the supervision plan calls for a greater involvement of the respective offices in Lima. The local offices will play an active role in: (i) reviewing sub-project eligibility and procurement; (ii) monitoring the monthly update of the project information system; (iii) visiting work sites and

municipalities involved in the technical assistance program; and (iv) providing follow-up and problem-resolution support.

D. Project Rationale

1. Project alternatives considered and reasons for rejection:

The proposed project is the second phase of a program designed to improve the physical condition and institutional oversight of rural roads. Due to the general success of the first phase, a wholesale revision of the general framework is largely unnecessary. Moreover, the existing project structure has overwhelmingly strong support from the national government as well as strong demand from the provincial and municipal and provincial levels. Nonetheless, the following alternatives --related to project scope, Bank support and screening of road subprojects-- were considered and rejected:

Project Scope: Integrated Rural Development Project. Basic infrastructure, such as water, sanitation, roads, is critical to creating a stable environment for human survival and growth. Recent Bank research on Peru's poverty reduction experience suggests that bundling basic services like water, electricity or sanitation might have a positive effect in reducing poverty.¹ Similarly, the "Consultations with the Poor" have also demonstrated the holism of life and living. An effective poverty reduction strategy cannot be built on improvements in one sector alone, no matter what sector that is. Since rural communities face multiple needs, it can be argued that an integrated development project may help in clarifying their options and priorities, and in putting in place a more holistic approach for local development. Integrated development project appear to offer great potential for enhancing coordination in selecting and implementing interventions in various sectors in a given area, and for economies of scale and cost savings when infrastructure interventions are coordinated across sectors. However, Bank experience in integrated rural development projects is less than satisfactory, due mainly to the increased complexity of implementation arrangements across sectors, technical and sustainability difficulties when the respective government agencies responsible for the sectors are bypassed, or the limited access to qualified human resources when the local institutions who are supposed to undertake the initiatives are weak.² The issue is whether a holistic, participatory strategy for poverty alleviation, followed by a combination of sector interventions specifically designed to support it, could achieve the advantages, and offset the disadvantages of an integrated development project.

Although the proposed project is conceived as a transport intervention, several features in its design aim at supporting a holistic response to local needs, namely: (i) its flexibility in screening, approving and targeting project interventions, which starts with local participatory processes to identify local needs and support the road component of local development programs; (ii) its strong focus on "municipal participatory planning" implicit in the methodologies applied under the institutional building program, which creates opportunities for coordinated responses across sectors; (iii) its reliance on regional field offices, which being closer to the municipalities, have clearly perceived the need and the opportunities missed by not coordinating rural development programs carried out in both public and private domains; and (iv) its emphasis in empowering rural communities and local governments to undertake new initiatives that building on transport improvements pursue benefits in other sectors.

Project Scope: Extended Geographic Coverage. At project identification, the teams considered the possibility of expanding the project area to other departments beyond the twelve selected for the RRP, in view of the high demand expressed by poor municipalities across the country. PCR has already demonstrated capacity to implement a larger program, and it would only need to establish some additional field units to manage an expansion of the geographic coverage of the program. However, the expansion

would imply increasing the size of the investment program to around US\$280 million (with WB and IDB loans of \$90 million each) over the same implementation period to allow an increase in the number of participating provinces once the program is opened to other departments. This option was rejected for various reasons: (i) *excessive pressure on government counterpart funds*. With the deterioration of the fiscal position, the program would require budgetary commitments higher than the levels planned by MTC and MEF. Also, the financing plan calls for prudence, as the planned reduction of central government contributions builds on the ability of PCR to effectively mobilize from years 2002 and on municipal contributions to cofinance maintenance; (ii) *increased complexity of co-financing arrangements*. Expanding the geographic coverage would imply dealing with a larger number of municipalities, with different degrees of exposure to the program and a broader range of income levels and municipal financial capacity. This would add more uncertainty to the development and implementation of the co-financing system, increasing the risk of non-compliance especially by new municipalities where the benefits of the program have yet to be demonstrated; and (iii) *increased competition for program resources*. In the second phase, PCR has to focus on the challenging task of building institutional capacity at the local level to strengthen the long term sustainability of the rehabilitated rural road network. However, a demanding investment program could in turn weaken the project's support to institutional development in two ways. Firstly, it would increase the risk that PCR shifts its attention away from the institutional program if overwhelmed by the day-to-day management of an ambitious work program. Secondly, it would spread the investment program too thin among many competing provinces if the expansion to new departments is done under tight budgetary constraints, which in turn would reduce some of the project incentives for municipalities to participate in the institutional program.

Project Scope: Extended Coverage of the Financial Mechanism for Rural Road Maintenance. The design proposed for the MCM addresses the needs of poor rural municipalities, where PCR is active and the project direct intervention are justified for equity/poverty reasons. Thus, its coverage and level of funding needs are linked to the progress made in rehabilitating the rural road network under the RRP (presently about 10,000 km). While the same principles could have been applied to expanding the coverage of the MCM to the entire rural road system (more than 40,000 km), this alternative would require deeper reforms to address some additional difficulties stemming from: (i) the differences in financial capacity among municipalities outside the PCR area of intervention, which would require a thorough analysis of local capacity to group the municipalities according to their ability to contribute to maintenance; (ii) the large size of the rural roads network and its present condition, with many road sections not maintainable (lack of drainage systems, need to clear the rehabilitation backlog before the roads can be efficiently maintained). This would not only increase the size of central government transfers but add uncertainty to the appropriate levels of funding, which in turn could jeopardize the sustainability of the mechanism; and (iii) the lack of appropriate institutional arrangements outside PCR to deliver an effective maintenance program. MTC could easily meet a minimum funding requirement for rural road maintenance with its current allocation to DGC (the Directorate of Roads), but DGC's interventions lack the long-term impact (due to inappropriate standards and lack of continuity in maintenance) to spur rural development.

To develop a truly sustainable financing scheme for the entire rural road sector, the level of funding made available to municipalities for rural roads maintenance would have to be linked to a secure source, such as a percentage of the road user charges collected by central government. A proposal to create a Road Fund was eliminated from the Transport Law approved by Congress in 1999). Also, additional reforms would be needed to empower municipalities to raise more funds locally, and balance responsibilities with financing resources for an array of local expenditures --well beyond the road sector. The study on decentralization in Peru would need to address these broader issues and build consensus to move ahead on the agenda for decentralization.

Bank Support: Use of an Adaptable Program Lending. At the time of preparing the (first) Rural Roads Rehabilitation and Maintenance Project (Loan. 3962-PE) in 1995, the APL modality did not exist. The project was the first attempt of the Peruvian authorities to intervene in the rural roads sector in a systematic manner, and there were important issues about the strategy for working at the local level, which would require some testing and experimentation before casting them in a long-term policy document. These features of the program --combined with the long-term efforts required to address both the large road rehabilitation backlog and the institutional strengthening of provincial and district municipalities-- could favor the use of an APL. The RRP was split into two phases with shorter implementation periods and specific outputs to be achieved in each phase, including the design of an institutional and financial mechanism for rural roads maintenance as the trigger to move into a second phase. This approach, with its reminiscences of an APL, has worked well, giving the right incentives for PCR to focus on institutional and financial measures, while retaining flexibility to accommodate them to the progress made by the government in its decentralization agenda. The possibility of adopting an APL modality for the second phase was discussed but discarded because presently GOP is not in a position to commit to a long-term policy agenda with regard to fiscal decentralization, and the slow progress made in this field makes it difficult to map the triggers that would jump-start subsequent follow-on phases. Thus, MEF is lukewarm regarding an APL but favors the phased approach adopted for the RRP, where each phase of the program mimics some of the features of an APL (a clear long-term objective with a broad strategy to achieve it and agreed steps to trigger subsequent phases) while allowing for greater fine-tuning of the investment and policy agenda at each succeeding step, and can be processed in due time to ensure the continuity of the program.

Screening Project Investments: Top-down Approach. In Perú, with two thirds of the rural population being poor or extremely poor, investments in rural roads have a strong social policy purpose. To ensure that the project investments are cost effective and spur the desired social and economic yields, road subprojects must meet certain criteria which usually encompass a combination of parameters (typically ranging from social and poverty indicators, to agricultural-production feasibility, to other non-quantified benefits such as increased access to health and education services, accident reduction, and improved institutional capacities at the local level). Basically, there are two possible alternatives for identifying candidate road subprojects. Under a top down approach PCR would identify and select those road subprojects that rank highest after assessing the respective parameters for all targeted communities. In spite of its potential to maximize outputs, the problem with such an approach is that it might not capture local priorities and development needs as perceived by the communities the project intends to benefit. This would undermine local ownership and in turn weaken the sustainability and side-benefits of the RRP investments (which can be central in poverty targeted intervention). Alternatively, under a bottom up approach, road subprojects are identified through participatory workshops at the community level with the involvement of local authorities. The decision to adopt a bottom up approach was made during preparation of the on-going project. The methodology used for consultations with the communities has proven to be cost-effective, and the workshops and dialogue maintained has served to not only identify project interventions with a long-term development perspective and sound technical rationale but also achieve other institutional and community objectives besides the formulation of investment proposals.

¹ "Poverty and Social Developments in Peru, 1994-1997", World Bank, May 1997. The report shows how access to one service has raised families' welfare but access to three basic services has raised families' welfare more than three times, suggesting the potential positive effect of bundling interventions.

² Given the highly centralized nature of the Peruvian government, such coordination would need to start at the top and continue down the various bureaucratic apparatus until it reached the communities. The tools and mechanisms for this type of coordination are simply not yet in place.

2. Major related projects financed by the Bank and/or other development agencies (completed, ongoing and planned).

Sector Issue	Project	Latest Supervision (PSR) Ratings (Bank-financed projects only)	
		Implementation Progress (IP)	Development Objective (DO)
Bank-financed			
Road rehabilitation and capacity building (completed)	Transport Rehabilitation Project (3717-PE)	S	S
Road rehabilitation and capacity building (completed)	Rural Roads Rehabilitation and Maint. Project (3962-PE)	S	S
Poverty alleviation and promotion of self-reliant community organizations	Second Social Development & Compensation Fund (4068-PE)	S	S
Alleviate the poverty of the rural Sierra people (on-going)	Sierra-Natural Resources Management and Poverty Alleviation Project (4130-PE)	S	S
Social Reform and protection of key social programs (planned)	Programmatic Social Reform Loan		
Other development agencies			
Inter-American Development Bank	National Program of Rural Transport Infrastructure		
Inter-American Development Bank	Social Development and Compensation Fund III		

IP/DO Ratings: HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory)

3. Lessons learned and reflected in the project design:

Review of Bank Experience on Rural Roads Projects. Since 1975 the Bank has invested more than US\$2 billion through a large number of operations involving rural roads.¹⁷ The principal problems in achieving sustainable results have 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 are rarely addressed. Bank-wide experience resulted in the following advice for the design of the RRP: (i) there should be 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.

Recent Bank sector work has analyzed the links between poverty and transport and how transport operations can contribute to poverty reduction supporting either directly or indirectly approaches.¹⁸ The

following conclusions are particularly relevant for the RRP: (i) the process of poverty reduction is embedded in a broad range of socio-economic activities to which transport services provide intermediate inputs. Transport alone cannot reduce poverty, though it serves a crucial complementary role (it plays a leading role in economic growth at early stages of development, as transport investments stimulate economic growth through market widening effect). Consequently, more systematic integration of transport components with other sectoral interventions (for example, in education and health) is necessary so as to strengthen poverty reduction strategies; (ii) transport needs of the very poor should be recognized. Income is a key determinant of individual travel behavior. The very poor often are not able to afford the cost of using "for payment" transport services. Their main transport mode is walking. They spend a great time and a substantial amount of personal energy on travel, but cover comparatively short distances. In rural areas, a better understanding of NMT services is critical to making the most of opportunities to incorporate project components that directly assist the very poor; (iii) mechanisms for the poor to voice their transport needs are typically weak and should be improved, especially at the local level. Approaches include surveying existing problems and needs, establishing explicit participation in collaboration or partnership with NGOs, and enabling expression through open markets; and (iv) labor-intensive methods in road work, where relatively low wages make them cost-effective, provide a sustainable source of supplementary employment for the poor, especially in rural communities.

Lessons from consultations with the poor. In view of the strong poverty focus of the RRP, the findings of the broad-based consultations with the poor recently performed by the Bank are also worth examining for project design. LAC country reports on the Voices of the Poor put great emphasis on problems of employment; both unemployment and the variability of employment and wages are seen as problems. Another key problem is the deficiencies in infrastructure: lack of water, sanitation, electricity, street lights and roads. In rural areas, the problems are more linked to problems of low productivity such as lack of access to credit, markets (roads), irrigation, and land; lack of skills is a problem, but not the lack of basic education. In contrast with the World Development Report strategy, the poor do not place such a high value (as the Bank does) on health and education. The emphasis on employment also reflects the fact that growth has been disappointing, and not particularly labor-intensive in the kinds of unskilled labor possessed by the poor. There is a need for much more attention to basic infrastructure, both in urban areas (water, sanitation) and rural areas (roads).

Similarly, the Bank is presently reviewing with the Government of Peru ways of improving efficiency and equity in social spending which will ultimately benefit the poor. To enhance the quality and sustainability of the recommendations, a series of consultations have been conducted under Peru's National Poverty Fora. The lessons learned from these consultations include: (i) poverty is multi-faceted, thus the need for coordination around problems rather than sectors. The strategies proposed by participants emphasized the need for multi-sectoral strategies to address complex and intertwined problems. Problems that require a multi-sectoral approach include alcoholism, domestic violence; (ii) strategies must be adapted to regional realities. The differences and disparities between the regions of Peru are great, so centralized strategies will undoubtedly fail in a country with such diversity; and (iii) more efficient and effective social services can improve well-being only partially. Equally important are income earning opportunities and democratic and transparent decision making at all levels. Participants in Cusco emphasized the need to provide incentives for and promote development of productive projects, and decrease the number of assistential programs in favor of productive ones.

Lessons from the implementation of the first phase. The evidence gathered through the implementation of the first phase of the RRP has generally confirmed the validity of the principles and strategies underlying its design. In particular, the following lessons are relevant for enhancing the sustainability of the second

phase: (i) beneficiary participation invigorates project sustainability in many ways, even through the implicit risk associated with stakeholder participation (a dimension that rather than ignored should be nurtured). In the highlands of Peru, a history of unfulfilled promises, poor results (with the benefits of government interventions vanished soon after due to lack of maintenance), bad advice and a host of similar problems, has led to cynicism on the part of many communities. PCR has realized that perhaps its main asset is the credibility it has gained before the communities by delivering the commitments taken on during the participatory processes and not compromising on the quality and standards of its interventions; (ii) the fragile dynamics of local development call for close monitoring of benefits distribution effects. For example, the micro-enterprise program has gained the acceptance of communities and government officials. However, no matter how deeply rooted in the community, this support might decline in time if communities perceive they are not participating in the economic benefits the program is bringing to micro-enterprise members. This underscores the importance of complementary local development initiatives that directly benefit the communities where they are located, and an exit strategy that opens opportunities to other members of the community once the micro-enterprise (or its members) become strong enough to continue on their own without direct project support; (iii) side social benefits, when clearly demonstrated and appreciated by the parties, become powerful engines in the drive for sustainability. In the dialogue for the design of a financial mechanism for rural road maintenance, government officials placed as much (perhaps more) value on the social benefits derived from the continuity of the micro-enterprise program than on the benefits of road maintenance itself; and (iv) the improvement of Non-Motorized Transport tracks and trails has become one of the most strategic interventions of the project to alleviate rural poverty, as it enabled the project to reach the most vulnerable.

^v According to an OED review of rural transport operations, the Bank funded around 66 operations dealing with rural roads. Half the Bank's rural roads operations are stand-alone projects. Others are project components under Roads, Transport, Rural Infrastructure, Irrigation and Agriculture and Rural Development Projects. The outcome has been mixed, especially for agriculture or integrated development projects. In this respect, the OED review favors sector projects designed within a holistic strategy for rural development ("Think centrally but act sectorally").

^v Colin Gannon and Zhi Liu (TWUTD). "Poverty and Transport", September 1997. Indirect approaches involve increasing the efficiency of resource allocation, especially the performance of markets, the flexibility of adjustments and the fostering of economic growth. Direct approaches are concerned with enhancing human capital formation, especially education and health, and improving access to economic and social opportunities, including labor and product markets, schools, and clinics. Typically, indirect approaches operate at the level of improving overall mobility, while direct approaches operate at the level of improving basic access for the poor.

4. Indications of borrower commitment and ownership:

Borrower commitment. MTC and MEF have both shown strong commitment to the RRP and its development goals. Encouraged by early positive results, PCR's ownership of the project has increased steadily during the implementation of the first phase of the program and remains steadfast for the second phase. The following are clear indications of borrower commitment and ownership of the project:

- (a) a satisfactory record in implementing the on-going project and realizing its development goals. PCR has surpassed the investment targets agreed upon at appraisal for the first phase of the program and fulfilled several critical institutional strengthening indicators, such as micro-enterprise development. The project would have been completed on schedule except for the recent budgetary cutbacks (i.e., lack of budgetary authority to spend). Throughout project implementation PCR maintained a receptive attitude to learn by doing and incorporating feedback from implementation. It has continuously sought a more comprehensive response to rural poverty and community development issues, to an extent that is unusual in a "hard" sector project.;
- (b) the endorsement of key (and sometimes sensitive) principles which lie beneath the project design. Four

features of the project -namely, the participatory approach in subproject generation, the use of micro-enterprises for road maintenance, the extensive involvement of NGOs, and the inclusion of a pilot for non-motorized transport- were indeed innovations for the road sector in Peru and MTC either had doubts about their relevance or perceived their implementation implied risks for central government. Nevertheless, both MTC and PCR embraced them, to the extent these principles are not under scrutiny for the design of the follow-on phase; and

- (c) the high visibility of the program at top levels of Government and their strong interest in ensuring the continuity of the program. The program received significant attention at the highest levels of government, who followed with interest its implementation and made positive reviews of its outcome. Although the maintenance program represents a heavy financial burden for MTC, GOP has renewed its commitment to moving into the second phase of the RRP, and requested both IDB and the Bank to accelerate its processing to ensure no breakdown in the financing of ongoing activities, especially of the micro-enterprises. In preparation for this second phase, PCR is acting to strengthen economic planning, environmental management, and institutional strengthening functions, and to delegate management responsibilities to its field offices. In particular, the Borrower has established the Office of Planning and the Office of Investments --Transport (OPLA-ODI) to examine and review sustainable mechanisms for financing rural road maintenance over the medium-term.

Local Government Interest in the Project. The proposed project has been well received at the local levels of government. Majors have overwhelmed PCR with requests for road improvements, even those of provinces not included in the first stage. The first project has also attracted strong interest from community groups and local populations in the affected areas. These groups have actively participated in the selection of subproject works and the development of micro-enterprise firms. In many communities, beneficiary demand in these areas has exceeded project resources. Significant demand also exists regarding the expansion of the non-motorized transport component, which began as a pilot under the first phase. Communities have contributed towards the cost of these works. One province -Arequipa-- has offered to be the test site for the road management pilot and has pledged to cover all operating costs and a substantial portion of maintenance costs once the roads are rehabilitated. Nevertheless, the strongest indication of commitment to the project will come when provincial and district municipalities expand their responsibility under the proposed project to implement the MCM. In the workshops held in late 2000, most of the majors confirmed their willingness to commit the technical and financial resources required under the MCM. Prior to starting new investments under the proposed project, majors will sign the respective "*Convenios de Encargo*" that enable the transfer of funds for the MCM. PCR good collaboration with local communities and governments should serve well in the attempt to decentralize more responsibility.

5. Value added of Bank support in this project:

Bringing worldwide knowledge on best practices. The Bank's key role in designing the Rural Roads Program has been well appreciated by the Borrower. Bank involvement brought several "best practice" approaches, which were highly innovative and positive in their outcomes. Bank assistance during the second phase would continue bringing global experience to further and 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. These are areas where the Bank has accumulated 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. Also, 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 has accumulated a substantial amount of knowledge on the large number of programs presently underway and the issues that need to be addressed to

improve their effectiveness.

Stable Financing for Reforms. The proposed project is part of GOP's strategy to alleviate rural poverty and consolidate financing for the rural road rehabilitation and maintenance plan for the next three years. The plan sets targets to attain conditions needed to unlock development/reduce poverty and develop institutional and financial capacity at both local and central levels of government. Steady multilateral support is an essential element of the government financial strategy for the continuation of the successful Rural Roads Program started in 1995.

Complimentary synergies and coordination with other major donors. The effective and synergistic collaboration with the IDB started under the RRP has been well appreciated by both MTC and PCR, and pointed out as a prime example of what can be achieved when both institutions work together. The parties involved have developed an open and effective dialogue that has overcome constraints in institutional capacity at the national and local levels and has catalyzed project implementation. Various advantages stemmed from this partnership: (i) reaching an agreed position on key policy issues and strategies. Project and policy issues were openly discussed during the implementation of the first phase and preparation of the follow on project --with IDB, PCR and the Bank acting as equal parties. This has not only increased the Banks' leverage with the Borrower but also contributed to adding transparency to the relationship, and in turn, to building ownership of the project; (ii) mobilizing an enlarged multidisciplinary team. Supervising the implementation of the first phase entailed 12 joint missions between 1996-2000, staffed with consultants and staff from IDB and the Bank (both headquarters and local offices) and allowing skills mix that would have not been possible in the absence of this collaboration due to budgetary constraints. This collaboration went beyond joint missions: the Bank financed several social studies (e.g., gender, social assessment) and coordinated the work with NGOs, while IDB financed several audits (e.g., review of the micro-enterprise program, environmental audit); (iii) simplifying PCR's task management of the project through the unification of project operational procedures and reporting requirements (which were agreed upon by the Banks under the MOP); and (iv) enriching the dialogue within the IDB and Bank team, as the respective staff brought the knowledge of best practices developed by each institution.

E. Summary Project Analysis (Detailed assessments are in the project file, see Annex 8)

1. Economic (see Annex 4):

- Cost benefit NPV=US\$ million; ERR = % (see Annex 4)
- Cost effectiveness
- Other (specify)

The Participatory Process of Sub-Project Selection. In the context of the project's grassroots-orientation and participatory framework, the economic evaluation represents a step within the eligibility criteria that are applied to corroborate the feasibility of the sub-projects in achieving the objectives of the RRP. The selection of sub-projects consists of a process of steps that will ensure that the selected sub-projects enjoy the acceptance and ownership of the affected communities, are technically sound, and respond to the needs of poor areas and/or to the expected economic benefits.

The experience of the first phase of the program illustrates the analytical tradeoffs implied in the design of adequate eligibility criteria and the related cost/benefit methodology when there is not an efficient method for measuring the multidimensional impacts of investments in rural road infrastructure. A balance must then be struck between the need to achieve comprehensiveness and the need to have a methodology that can be applied in the field. In this respect, the proposed eligibility methodology attempts to capture those various dimensions in a stepwise fashion, with an emphasis on institutional (grassroots-oriented) actions first, the consideration of poverty indicators second, and on the evaluation of economic worthiness third. In this last step, the impossibility of capturing all the benefits generated by the rehabilitation of a rural road (as expressed in the impact survey) and the need to establish a sufficiently reliable but applicable approach, required to limit the quantification of benefits to those that provide a good proxy of the adequacy of the investments to advance the ultimate economic wellbeing of poor rural areas (namely, the growth in agricultural and livestock production).

The impact survey showed a noticeable increase in the benefits derived from better access to social services (particularly, health) and the better opportunities for social interrelations. These benefits will ultimately generate additional income from the enhanced social contacts, health and education characteristics of the population, which coupled with lower transaction costs should help communities to improve their economic output. In all, the ultimate impact should lead to positive changes in the value of the net capital assets of the poor, as can be reflected by the expansion of their income earning activities (being them agricultural, livestock raising, craft production, tourism, etc.). The project includes studies to further the knowledge created during the first phase (as epitomized by the impact survey) and to confront the challenge of developing better tools to capture through quantitative analyses the estimation of the benefits improved accessibility can create to the local economies in a broader sense. Further research on the short and long term impacts of this type of projects should help elucidate the effect that better accessibility may have in improving the livelihood of the rural poor.

The second phase of the rural roads rehabilitation program will continue to be implemented within the same 12 departments where the first phase of the program was executed (plus a handful of contiguous provinces for which the Government will present a justification to be agreed upon at negotiations). This will ensure that the social and economic benefits are further maximized in the 12 poorest departments of Peru. The distribution of resources (in terms of kilometers to be rehabilitated) among departments and, within each department, among its provinces attempts to achieve that maximization of benefits while redistributing resources on a manner that reflects poverty conditions, the still untapped potential of those communities,

and their commitment to the project. The indicative distribution of resources among departments and provinces, detailed in Annex 4, was established in discussions with key stakeholders considering poverty levels and compensating for the amount of kilometers already rehabilitated.

The geographic distribution represents an indicative allocation of resources. On the basis of this allocation of resources and the eligibility criteria (as explained in Annex 4 and in the Project Operational Manual or MOP), the communities at the provincial level would gather together and each Provincial Council will present proposals to the UEDs in the context of the definition of a strategic transport plan for the region with the participation of the communities at large. The UEDs will contract the necessary studies to analyze those proposals and forward the results to the PCR for final approval and the initiation of the tendering process for the contracting of the related works. The final approval by the PCR will allow to take into account possible network effects, such as the identification of road segments that may be in one province but may benefit another or that an isolated link in one province may only achieve its benefits if connected to other links in another province.

The PCR will evaluate the sub-projects and bring them into the context of other sub-projects in the same geographical area in order to try to maximize the ultimate impacts of several sub-projects which are located next to each other and with possibilities of being interconnected. If the functional characteristics of a project are not deemed appropriate, the PCR can attempt to identify complementary sub-projects to make community's proposal adequate from the geographical standpoint. The UED will confirm with the Provincial Council this adjustment. The signature of a co-financing agreement by which these municipalities will contribute to the maintenance costs of the rehabilitated roads (under the first or second phases of the program) would be a further condition for going ahead with the analysis of the proposed sub-project.

The sub-projects must have the technical and environmental qualifications specified in the MOP. The former refer to the construction characteristics of the proposed sub-projects and their functionality within the road network in the pertinent province or department. The technological characteristics require that the proposed works allow for adequate future maintenance with micro-enterprises and the use of local labor. Furthermore, the construction and maintenance costs of the proposed sub-projects would have to keep relation with the expected benefits of the road. As to the functionality, the proposed sub-projects would be analyzed within the context of the broader transport network and, in particular, of the connection of the road to market and/or social services centers of the province or department, with the objective of implementing interconnected "trees" or rural roads and, when necessary, or departmental roads to maximize the economic, transport and social benefits of the investments. The MOP includes a section on the environmental regulations that must be complied with--as specified in the pertinent contracts--by the rehabilitation contractors and the maintenance micro-enterprises. All rehabilitation works will take place within existing rights-of-way and will not entail any displacement of population or noticeable impact to the natural habitat.

The Analytical Methodology. When these technical and environmental conditions are assessed, the PCR proceeds with the analysis of the data related to the poverty, social and economic conditions of the direct area of influence of the road sub-projects. The analysis of these data will cover a spectrum of development stages and functional characteristics of the rural roads, namely: (a) those roads that provide access to rural communities with prevalence of poverty; (b) those "mostly on the secondary network" that enjoy a certain level of traffic as they connect areas with recognized economic benefits; and (c) those in between, that connect rural towns and villages with poverty conditions less stringent than those under the first stage but with limited use by motorized vehicles (as measured by the number of vehicles per day). These three stages are described below (and in greater detail in Annex 4).

The direct area 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. In the description of this area of influence a listing of those communities should be provided along with the social and economic indicators described later to apply the corresponding methodologies. When proposed sub-projects entail a total cost and a cost per beneficiary below certain thresholds (US\$250,000 per project and US\$100 per beneficiary), these sub-projects are evaluated under a social criteria related to infant mortality rates (with the threshold set at 80) and unsatisfied basic needs of the area of influence (with the threshold set at 70%), prorated on the basis of population. These thresholds were set on the basis of the experience of the sub-projects undertaken in the successful first phase of the program. They ensure that sub-projects in poor communities that attempt to enhance at low cost their accessibility to social services are approved on the basis of access improvement regardless of the ultimate impact on the potential increase in agricultural, pecuniary or other economic production. When the minimum thresholds are not met, the sub-project had then to be analyzed following the producers' surplus approach.

In those cases where traffic volumes are higher than 30 vehicles per day, an economic analysis would be undertaken on the basis of comparison of the rehabilitation and maintenance costs with the benefits derived from savings in vehicle operating costs, following the application of the Road Economic Development (RED) model developed by the World Bank (on the basis of the HDM program). This methodology is expected to be largely applied to segments of the primary and secondary network that may be identified as critical to allow the connection with or among networks of rural roads.

For the rest of the cases, the producers' surplus approach would be applied. This approach relates the rehabilitation and maintenance costs of a sub-project with the benefits that the sub-project would bring in terms of increases in net agricultural and livestock production (net of local consumption and production costs). 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 rural roads. These assumptions built on the experience of the first phase and the results of the impact survey. Annex 4 details the specific assumptions and the methodology. A benchmark of 10% was established as the minimum economic rate of return for a project to be eligible. When a sub-project does not meet these criteria, it is either discarded or reformulated.

The ex-post in-depth economic analysis (producers' surplus approach) of 36 sub-project completed under the first phase (representing about 20% of the investments in the rehabilitation of rural roads and in the number of kilometers rehabilitated) shows a prorated (by the cost of the rehabilitation investments) economic rate of return (ERR) of 25% and a net present value (NPV) of US\$20 million, or about US\$0.93 per US\$ invested in the rehabilitation of those roads. Two of the 36 projects complied with the poverty thresholds and a third presented ERR less than the required minimum of 10%. (These sub-projects however did show positive NPVs at the 10% discount rate when the assumptions established at the beginning of the first phase are held.) The application of the average NPV per US\$ invested to the

expected targets of the second phase yields an NPV of more than US\$46 million for the project's rehabilitation component. The combined NPV of the representative sample of sub-projects remains positive in the event of lower increases in the production area, decreases in production costs, or increases in rehabilitation and maintenance costs. Were a reasonable level of productivity is incorporated into the analysis all the sub-projects except one would yield ERRs greater than 10% and the combined ERR would become 48%.

These figures were obtained after applying to the best extent possible the results of the impact survey. They must be seen with caution as the reliability of the information regarding the values for the variables related to production and productivity in rural areas from the initial socio-economic studies was low (though they were adjusted through their comparison with the latest agricultural and livestock census of 1994) and the results of the impact survey appears not to have captured the possible longer-term changes in agricultural production. The results of the impact survey for the first phase of the program has shown the apparent paradox that significant improvements in the conditions of travel, from reductions in travel times and distances to enhancements in the provision of transport services have accompanied improvements in access to certain social services but have not yet translated into more specific economic benefits (such as noticeable improvements in agricultural productivity and on general agricultural production). The hypothetical explanation is that the impacts from investments in transport infrastructure, such as rural roads, may take time before they translate into noticeable effects on income growth and human development. The second phase of the program will attempt to gain more definite answers in this respect. The enhancement of the project monitoring system and the systematic application of impact surveys shall allow the methodical measurement of the benefits of sub-projects before and after their implementation and the comparison of those benefits to control areas of similar socio-economic characteristics.

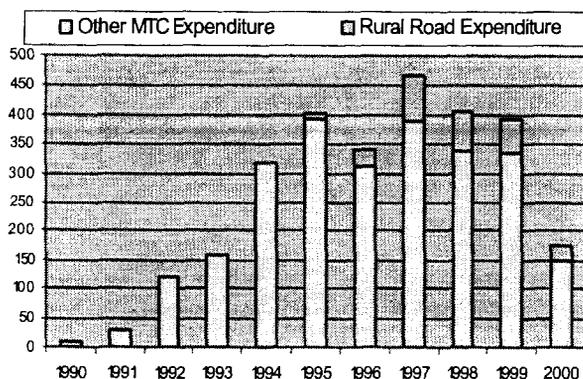
2. Financial (see Annex 4 and Annex 5):

NPV=US\$ million; FRR = % (see Annex 4)

Central Government. The design of the second phase of the program seeks a delicate balance between the staggering need of the poor communities, which calls for a large program, and the budgetary ceilings imposed on the sector by tightened fiscal conditions. The proposed project is one of the nine protected programs targeted under the Programmatic Social Reform Loan. With the worsening of fiscal conditions, MEF revised down in 2000 both local and external budgetary authorizations for the sector, thus constraining MTC's ability to complete on-going projects. Furthermore, the sector faces a large amount in loan commitments that remain undisbursed as implementation of several mega-projects has slowed down in line with budgetary restrictions. To overcome this situation MTC is scaling down its investment program and restructuring some projects and their external financing, to concentrate the funding on those that having the highest priority should be completed with no delay.

The proposed project is aligned with the budget appropriations already approved for 2001 and conservatively envisions an increase for the coming years, which MTC considers manageable within the indicative expenditure ceilings set by MEF and its commitments for 2002-2004. Project funding requirements start at about US\$16 million in 2001 and raise to US\$46 million in 2003. Past expenditures under the Rural Roads Program have ranged from US\$28.7 million in 1996, to US\$77.1 million in 1997 to US\$25.3 in 2000. While the 1997-1998 peak is indicative of PCR's implementing capacity, the plunge in 2000 illustrates the impact of the fiscal crisis on MTC's program. This range varies more narrowly --between 9.1% and 17.4%-- when rural road expenditure is compared with MTC's total annual expenditure in the road sector. The funding requirements of the proposed project are kept within a 10-15% share of MTC road expenditure, similar to the level achieved in 2000.

Transport Sector Investment 1990- 2000 (US\$million)



Municipal contribution for road maintenance. Provincial and district municipalities are eager to co-finance road maintenance with PCR, in spite of the tight financial constraints under which they operate. Their aggregate contributions to the MCM would start at around US\$300 per annum and km rehabilitated under the RRP, and may increase in the near future if there is progress in the fiscal decentralization agenda. The proposed contribution represents between 4 to 10 percent of the transfers received through the Municipal Compensation Fund (FCM), the main source of funding for those municipalities targeted under the project. Although manageable, about half of the municipalities indicated in the workshops held in late 2000 that they would not be able to meet their requirement if they have to rely exclusively on the FCM transfers earmarked for recurrent expenditures. These municipalities requested flexibility to tap the FCM transfers for capital expenditure as needed to cover the balance.

The fact that the MCM heavily depends on budgetary allocations made through MTC and is anchored to the project rather than to fiscal or sector funding policies, raises some concerns about its sustainability beyond the project. It represents, however, the best compromise possible under the prevailing constraints in fiscal decentralization. Government (MEF primarily) is concerned about the country's macroeconomic and fiscal balance. Under the current political and macro-economic conditions, central government is not in a position to decentralize additional revenue sources or increase the size of inter-government transfers. MEF has also opposed to establishing a Road Fund when Congress approved the Transport Law in late 1999. These alternatives could have enhanced the sustainability of road maintenance by linking its funding to a more secure and stable source (i.e., a percentage of the road user charges collected by central government). Additional reforms well beyond the road sector would be needed to empower municipalities to raise more funds locally so as to balance responsibilities with financing resources for an array of local expenditures. These are major constraints to designing an effective system of inter-governmental transfers and local revenue sources that could support full transfer of maintenance responsibilities to local government on a sustainable basis.

Nonetheless, the financial mechanism under the project represents an important stride towards gradually transferring more responsibility to, and increasing accountability of local governments. Under the proposed mechanism maintenance funding will be as predictable as possible: provincial and district municipalities will be required to allocate their own funds (albeit partially and, at the margin, from FCM transfers as they lack other sources) in a coordinated effort to support performance based maintenance contracts; and PCR decisions to expand the project activities in a given jurisdiction will be more transparent (as they will depend on the municipalities' compliance with the agreed financial mechanism).

Fiscal Impact:

Road users pay in excess of what Government actually spends in the sector. In 1999 road users paid about US\$600 million in charges or 2.2 times the expenditure in road investment and maintenance. This amount represents 6.2 percent of the general revenues collected by GOP in that year. Gasoline and lubricant fees (out of general taxes) are the main sources of funding, followed by vehicles fees, and by toll revenue raised by SINMAC and Metropolitan Lima on paved national roads and urban expressways respectively. In sum, while cost recovery in the sector is not an issue, actual funding for the various road programs is highly dependent on budgetary decisions and external borrowings, with marked volatility in the case of maintenance.

Table: Road-user Revenue and Road Expenditure 1997-1999 (US\$ million)

<i>Road User-related Revenue (by charge type)</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>
Gasoline tax (out of general tax)	218.2	220.9	242.3
Diesel tax (out of general tax)	211.9	211.6	210.6
Vehicle Registration Tax	24.0	19.4	19.8
Tolls collected by Metropolitan Lima	25.4	26.7	21.9
Tolls collected by SINMAC on national roads	40.3	26.0	38.1
Vehicle purchase tax (out of general tax)	69.2	67.1	68.1
Driver License Fees	n.a.	n.a.	n.a.
Total Revenue	589.1	571.8	600.7
<i>Investment and Maintenance in the Road Sector</i>			
MTC	304.7	408.1	280.8
SINMAC	10.8	11.6	23.8
Maintenance in Metropolitan Lima	0.2	0.2	0.1
CTARs (departamental administrations)	28.9	38.7	26.7
Total Road Expenditure	344.7	458.7	331.3
Balance Revenue - Expenditure	244.5	113.1	269.4
Expenditure as Percentage of Revenue (%)	58.5	80.2	55.1

Source: ODI based on data from SUNAD, SUNAT, MEM, SINMAC, EMAPE and INVERMET.
SINMAC's budget in 1999 was US\$42 million.

Thus, sector allocation considerations (i.e., budgetary ceilings authorized by MEF and on-going commitments in the sector) have determined the size of the proposed project. The RRP includes some features that would help reduce the fiscal impact of the program at a sustainable level: (i) the project has flexibility to accommodate different budget scenarios, as its investment program encompasses a myriad of small, divisible investments whose implementation can be either accelerated or slowed down in line with the availability of funds; (ii) the burden on counterpart funds is minimized by the joint co-financing arrangement between IDB and the Bank; and (iii) the MCM is an effective tool to cope with the increasing size and cost of the project's maintenance program as roads rehabilitated are incorporated into the program. Mobilizing municipal contributions for maintenance, the MCM would even out the otherwise increasing burden on central government funds, which would result from the continuous expansion of the RRP. The financial plans calls for a total local contribution of about US\$51 million (or about 35 percent of total project cost), which looks feasible given that about US\$11 million are expected to come from municipal contributions. Participant municipalities have already confirmed in the workshops held in late 2000 their willingness to implement the MCM and capacity to meet their financial contributions thereof, provided MEF increases flexibility for participant municipalities to tap FCM transfers earmarked for capital expenditures when the transfers for recurrent expenditures are insufficient to meet their contributions under the MCM.

3. Technical:

The first phase of the RRP has already demonstrated that in the highlands of Peru rural transport can be improved and road infrastructure kept in good condition with a spot rehabilitation strategy, when followed by continuous maintenance. The project solutions are well adapted to the highlands context.

Studying Rural Accessibility Improvement in the Selva on a pilot basis. Expanding the above strategy to the *Selva*, however, faces several technical issues. First, rural accessibility in the *Selva* hinges on inland water transport, as it provides crucial links between otherwise isolated communities and between communities and centers of trade and commerce. River transport faces problems of restricted water depth during the dry season; also, silting and frequent changes in the alignment of the Ucayali river often render port facilities permanently or seasonally useless. Secondly, many existing roads are seasonally flooded because they lack adequate drainage systems or simply because they go along and serve low lands (the most fertile soil, which is cultivated during the dry season). This is further compounded by the lack of aggregate materials, which increases construction costs over those typical in the highlands. Altogether these factors call for different technologies and strategies for road upgrading. Thirdly, although the pilot area looks homogeneous, in reality the transport problems and consequent responses of the communities along the Ucayali River are quite different, thus the need to limit the pilot to a few strategic locations and deepen the analysis of regional and local transport issues in each location. Building on the successful approach used during the first phase where the road rehabilitation strategy was first tested in a pilot, the project includes a small pilot to learn how best to address these issues before designing a larger program.

4. Institutional:

The systematic inability of local governments to discharge their functions is both a cause and an effect of the prevailing financial and institutional constraints under which they operate. The RRP is a far reaching effort to develop such capacity for an effective local provision of services and more equitable development. Its pace and breadth, however, must be commensurate with Government's progress in its decentralization agenda, which so far has been substantially less than envisaged in 1995. Hence, this second phase of the program remains heavily focussed on poverty, and as such is not intended to carry a whole decentralization agenda given that it deals with the poorest and weakest municipalities.

Nevertheless, with its deconcentrated structure PCR has made substantial progress in managing the program through involvement of communities and local governments in subproject identification and maintenance. While local authorities participate in the various stages of this process (from investment planning to maintenance supervision), the dependence on central government will continue until municipalities achieve the financial and institutional capacity to deliver such responsibilities. On-going Bank sector work suggests that decentralization in Peru should proceed gradually by taking advantage of and building upon successful operations of these deconcentrated/delegated structures, given the persistent skepticism within central government on local governments' management capacities and concerns about fiscal impacts of decentralization.

4.1 Executing agencies:

PCR would be responsible for carrying out most of the project activities. Since the RRP started in 1995, PCR has demonstrated capacity to carry out the project with a development vision that exceeded the traditional hard context of road activities. On the one hand, the execution of the ambitious program of investments through a great number of small contracts in the most remote regions of the highlands of Peru demanded from PCR a solid organization and strong management capacity. On the other hand, PCR's performance allowed to effectively work with local authorities and communities, develop participatory processes innovative for the sector and establish strategic alliances with other actors. It has been an organization continuously trying to surpass itself and master the increasingly demanding institutional challenges posed by the program. Perhaps the most important indicator of the success of the PCR as

implementing agency is the credibility gained before the rural communities and local authorities in the project area.

The province of Arequipa was chosen to start the pilot on Provincial Road Management 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. Annex 2 gives a detailed description of the implementation arrangements. The Assembly of Majors of the province has already issued the ordinance establishing a decentralized public entity to undertake the pilot, approved its statutes and appointed a Manager. The unit has a specific mandate to act on behalf of all the participating municipalities with autonomy to contract out works and services and administer resources channeled from PCR and participant municipalities, and with its own budget separate from those of other provincial organizations.

4.2 Project management:

PCR has already demonstrated capacity to manage the myriad of small contracts with local contractors, consultants and community organizations, that characterized the implementation of the first phase of the program. The use of the Project Operational Manual ensures consistency in the solutions proposed and procedures to be applied by PCR and its field units. The Manual establishes guidelines, technical specifications and terms of reference for design and supervision of spot improvement and rehabilitation works. The guidelines emphasize on-site designs for rural roads to keep engineering cost at an acceptable proportion of the total construction cost, and more detailed engineering studies for primary and secondary roads.

4.3 Procurement issues:

PCR's procurement system is comprehensive and covers all aspects related to procurement of works and selection of consultants. Procurement procedures and guidelines are established in the Project Operational Manual agreed with IDB and the Bank. Annex 6 summarizes the conclusions of the procurement capacity assessment conducted during project preparation. Given the small scale of the project works, the proposed project would mostly rely on National Competitive Bidding, which is more suitable for the municipal environment PCR' central unit is adequately staffed with trained procurement, planning, scheduling and cost estimating personnel. The procurement system is computerized and consolidates information sent by regional offices and field supervisors. The general quality of procurement documentation produced by PCR is satisfactory. Every six months, independent auditors acceptable to IDB and the Bank conduct a performance audit of the project, examining a sample of sub-projects under execution, procurement procedures and contract administration practices applied by PCR. There is also an internal control unit within MTC that performs procurement reviews on a regular basis. Greater effort would be placed in aligning project activities with the most appropriate season so as to increase the productivity of consultant services and construction works, and enhance the social impact of those activities.

4.4 Financial management issues:

The project has in place an adequate financial management system as required by the Bank guidelines under OP/BP 10.02. The certification was based on an assessment of the project's accounting system, internal control, planning, budgeting and financial reporting system, and the selection of auditors, as well as the format and content of the Project Management Report 1 (Financial Report of PMR set) to be submitted by PCR in support of withdrawal application. However, while PCR has all the information required to produce the financial statements included in a PMR and can accumulate project expenditure by category and component, it has yet to demonstrate its readiness for producing the PMRs No 2 and 3 (Procurement and Output Monitoring) needed to become eligible for PMR-based disbursements. Agreement was reached at negotiations that by April 30, 2002, the PCR will start preparing PMRs, upon which the project would

start operating under PMR-based disbursement procedures.

5. Environmental: Environmental Category: B (Partial Assessment)

5.1 Summarize the steps undertaken for environmental assessment and EMP preparation (including consultation and disclosure) and the significant issues and their treatment emerging from this analysis.

This follow-on project builds on the various activities undertaken in the context of the RRP to address environmental concerns, namely: (i) setting guidelines and technical specifications for screening, designing and executing road rehabilitation subprojects under the project. The RRP's Environmental Manual published in 1996 became an integral part of bidding documents and of the operational procedures applied under the first phase of the RRP to streamline environmental assessment capacity in PCR's project cycle. Other project technical manuals, such as the one for upgrading tracks for non-motorized transport, include sections on protecting the environment; (ii) monitoring compliance with environmental guidelines and specifications through bi-annual performance audits. The technical and performance audits carried out every six months since 1996 over a sample of subprojects helped in identifying potential negative effects and keeping the focus on environmental issues; (iii) assessing ex-post the direct and indirect impacts of project activities on the environment, through the project's impact assessment study carried out in 2000; (iv) examining the quality of environmental procedures and their application in the field, through a comprehensive environmental assessment conducted in 2000. This exercise provided the basis for fine-tuning environmental procedures and implementation practices to be applied under the proposed project; and (v) focussing on the restoration of environmental assets along right-of-ways. The Reforestation Manual published in March 2000 is an example of the current emphasis on promoting more sustainable development along rural roads. The Rural Roads Program has been supporting reforestation programs in partnerships with PROMANCHS to better manage environmental impacts.

5.2 What are the main features of the EMP and are they adequate?

Environmental Management under the project. The project is rated as an EA Category "B", like the first phase, since no major environmental issues are anticipated from project works. The project entails rehabilitation of existing unpaved rural and departmental roads and improving non-motorized tracks. Since these are existing roads and no paving is considered, the risk of additional indirect negative impact linked with human activities (i.e., colonization, deforestation) is very low and the proposed project activities are unlikely to harm the ecological and social environment. An ex-post environmental audit funded by IDB has confirmed that the environmental practices followed by PCR are adequate to mitigate the potential environmental impacts of the project works. Such impacts are very limited: direct, temporary and of small magnitude. The greatest environmental damages associated with the existing targeted road network are erosion (slope instability) and inadequate location of disposal areas. By its very nature, the spot rehabilitation and maintenance strategy adopted has positive impacts on the environment because of its strong focus on identifying and offsetting erosion problems and improving drainage conditions. The limited damaged infringed by El Niño on the project road network (as opposed to the destruction occasioned on other road networks in Perú's highlands) is a clear indication of the positive effect of the project activities on the rural road network. Furthermore, in the highlands it is common to find eroding gullies devouring productive fields, that farmers can not halt as they lack the funds and an understanding of appropriate strategies. The project is contributing to address this vital issue by implementing a reforestation program with the assistance of the maintenance micro-enterprises and in coordination with PRONAMACHCS.

In line with the recommendations of the assessment completed in 2000, the following measures will be pursued to strengthen environmental management under the proposed project: (i) further strengthening PCR's environmental capacity by creating a permanent position for an environmental specialist, introducing on-the-job-training for staff in field offices, and fine-tuning environmental processes under the Project Operational Manual; (ii) continuing during the second phase with the biannual performance audits

carried out under the first phase; and (iii) increasing environmental awareness among local government officials and communities through the technical assistance components.

Environmental Impacts under the Pilot on River Transport Improvement. (See also section 7.2.) On a very limited scale, the project supports a pilot to improve inter-modal transport along the Pucallpa - Atalaya section of the Ucayali River, through the construction of small wharves and the respective access and storage infrastructure on land in three locations. The purpose of this pilot is to develop a strategic framework for improving rural accessibility in the *Selva* region where river transportation is prevalent, to enable a sustainable social and economic development of these areas. The pilot will test the adequacy of the environmental procedures and criteria to carry out transport improvements in rainforest areas and monitor potential indirect impacts in the area of influence of the planned interventions. Road building is extremely expensive and particularly damaging to the environment in rainforest areas. Thus, neither regional roads nor works near environmentally fragile or legally protected areas are included in this pilot to avoid negative direct and/or indirect impacts. Preparation of the pilot started in 1999 with an exploratory social and environmental assessment of the areas tentatively proposed for intervention. With the areas now narrowly defined, the following tasks are scheduled for completion before starting implementation of the limited pilot works in 2003: (i) carrying out specific environmental assessments for each location to identify and mitigate any direct or indirect negative environmental impacts; and (ii) designing and implementing a reliable participatory monitoring system to evaluate both negative and positive impacts through community involvement. The pilot provides financing for these activities. In view of the limited scope and nature of the pilot, the processing of the proposed project will adhere to environmental requirements for Category B projects. See also section 7.2 below for a discussion on the project safeguards in this regard.

5.3 For Category A and B projects, timeline and status of EA:

Date of receipt of final draft:

For the reasons explained in 5.1 and 5.2, a specific EA is not contemplated. Road subprojects identified through local involvement will be subject to environmental screening and environmental impact assessments carried out in accordance with the procedures in the MOP.

5.4 How have stakeholders been consulted at the stage of (a) environmental screening and (b) draft EA report on the environmental impacts and proposed environment management plan? Describe mechanisms of consultation that were used and which groups were consulted?

Local government officials and community leaders participate in the screening of road subprojects and in validating the design of the selected projects to include local solutions and respond to local needs. NGOs are extensively involved in project activities and participate in project monitoring and evaluation. Other stakeholders involved are government agencies involved in rural development activities. The participatory mechanisms used under the project are described with detail in the next section.

5.5 What mechanisms have been established to monitor and evaluate the impact of the project on the environment? Do the indicators reflect the objectives and results of the EMP?

The mechanisms described in (ii), (iii) and (iv) in 5.1 above will be applied to monitor and evaluate the impact of the project on the environment. For its very nature, the objective and outcome of the pilot on river transport improvement in the *Selva* are directly associated with the environmental sustainability of both rural accessibility improvements (direct impacts) and social and economic development (indirect impacts).

6. Social:

6.1 Summarize key social issues relevant to the project objectives, and specify the project's social

development outcomes.

Social assessment under the RRP is an evolving process that entails a continuum of participatory approaches, assessments and studies performed throughout the design, implementation and evaluation of the various phases of the program. The program concentrates on ensuring that rural accessibility improvements reach the poorer segment of the rural population. The results achieved during the first phase corroborate that the methodologies applied gave adequate priority to reaching impoverished communities in the project area. This proposed second phase provides the opportunity to deepen the analysis of social issues building on the recommendations of those activities and on the feedback from the monitoring activities that will take place during project implementation.

Annex 11 outlines the various studies and participatory exercises conducted since the program started in 1995, conveniently grouped in accordance with the four traditional pillars of social assessment. This annex thoroughly discusses the findings of the study completed in 2000 to assess the multiple impacts of the RRP on the beneficiaries' access to health, education, markets, and opportunities for income generation activities. The study measured a comprehensive list of indicators that characterize the livelihoods of rural communities benefited by the project's transport interventions as compared to similar communities in the project area that were not. The same study provides a baseline survey for the second phase and has been the basis for project appraisal.

Since the project entails the rehabilitation of existing roads, no direct negative effects are foreseen and the risks of indirect negative impacts linked with human activities (i.e., colonization, deforestation, resettlement) are minimal. A case study was conducted in 1999 to document possible social side effects associated with the execution of large project investments in relatively isolated areas. The study, carried out in the district of Kiteni, concluded that road construction activities neither had negative impacts on the local labor market and the price of goods with greater local demand, nor caused social disruption (e.g., excessive pressure on health services, delinquency, social conflicts). The study also depicted the high vulnerability of these local economies and how road expenditures had only partially mitigated the significant downturn of economic activity in the surveyed area that takes place every year after the coffee harvest.

Similarly, another case study conducted in 1999 assessed the social and cultural impact of improving non-motorized tracks in communities that have no other form of access. One of the issues explored in the study was whether compensating the communities (albeit partially) for their work under the project could weaken their willingness to undertake communal initiatives on their own (the collective *faenas* had been traditionally remunerated providing coca and *aguardiente*). On the contrary, a small compensation in cash proved quite beneficial for it helped communities to strengthen their organizations and cope with their staggering needs for cash (which is scarce in the highlands given the extensive use of bartering). Communities and road committee members reinvested their savings in local undertakings, improving their welfare and stimulating their local economies. Another issue was whether the creation of road committees resulted in overlapping or interference with elected authorities. No complains were found in this respect. Communities were able to choose the form of organization. In cases where the communities chose to collectively undertake the project works, the community leaders were designated to lead the road committee; in other cases where only community members willing to participate joined the committee, committee authorities were elected by its members. For some communities, participating in a "Road Committee" meant having first time access to a bank account and acquiring new organizational and technical skills.

Potential Impacts on Indigenous People. (See also section 7.2.) An estimated 1.7 million people live in

registered indigenous communities in the highlands or the Amazon region of Peru, of which 81 percent are extremely poor. With its strong poverty focus, the RRP (and its NMT component in particular) has reached many impoverished communities composed of indigenous groups. As it is current practice among NGOs operating in the highlands, the on-going project has not dealt with its beneficiaries identity as *Indigenas* per se, but rather has sought their participation in project decisions and activities, and to the extent possible has relied on traditional community structures to deliver project components.

In contrast, NGOs working in the Amazon basin take into account the indigenous identity as a major variable. Accordingly, the pilot on river transport improvement will explore the potential impact of rural accessibility improvement on the population, with special attention to indigenous and vulnerable groups, and their access to project benefits. As noted in previous Bank sector work, one of the most universally expressed desires of indigenous peoples is to gain equitable access to government operations and to the basic public and social services offered to other citizens.¹² During the consultations with grassroots organizations in Pucallpa (November 1999), various representatives of indigenous organizations made a strong statement in this respect. While the nature of the interventions planned under the pilot does not pose any risk to indigenous groups, the pilot is an opportunity to develop participatory processes that are inclusive and address the needs of these vulnerable groups. Indigenous communities are socio-economic organizations legally recognized under the Peruvian constitution, and as such may carry out projects on their lands with funding obtained from their members, government and other agencies. The holistic approach underlying the design of the pilot presents an opportunity to promote activities aimed at empowering indigenous groups and gaining self sufficiency and local capacity to deal with development problems. The table below summarizes some basic social indicators pertaining to the three locations where the pilot will be implemented. The data illustrate the severity of poverty in the three locations selected.

Social Indicators - Area Selected for Pilot Activities

<i>Pilot Location</i>	District	Masisea	Tahuania	Campoverde
	River Port Location	Masisea	Bolognesi-Nueva Italia	Nueva Requena
<i>Population</i>	Total District	12,083	5,608	14,000
	Target w/Pilot	9,251	1,745	3,793
<i>Villages</i>	Number	47	6	14
	Population	6,646	499	n.a.
<i>Indigenous Settlements</i>	No. communities	18	35	n.a.
	Population	3,447	4,666	n.a.
<i>Poverty Indicators</i>	Ethnic groups	Shipibo - Conibo	Shipibo - Conibo - Ashaninka	Shipibo - Conibo
	Malnutrition (%)	75.4	89.4	n.a.
<i>Basic Needs - Housing</i>	Illiteracy (%)	13.3	39.2	n.a.
	Poverty Category	Extreme	Extreme	n.a.
<i>Housing</i>	No fresh water (%)	99.0	100.0	n.a.
	No sanitation (%)	99.8	100.0	n.a.
	No electricity (%)	88.5	95.1	n.a.
	Precarious housing (%)	92.4	92.6	n.a.
	Overcrowded housing (%)	70.6	72.0	n.a.

Indigenous communities account for about 29 percent of the population in the district of Masisea and 83 percent in Bolognesi and Nueva Italia. Social issues to be dealt with under the pilot include: i) the inclusion of indigenous groups living in settlements along the selected pilot locations in screening pilot interventions; ii) participation of indigenous groups in pilot activities and benefits; and iii) participation of indigenous groups in monitoring impact of pilot activities. PCR will engage an NGO with ample experience in

working with indigenous communities settled along the Upper Ucayali river to design and carry out a comprehensive consultation process aimed at involving indigenous groups in the selection, design and implementation of pilot activities and preparing an Indigenous Peoples Development Plan (IPDP) with the people affected. Prior to starting implementation of the pilot works, PCR will furnish to IDB and the Bank the IPDPs for each of the locations selected to be prepared following guidelines satisfactory to the Bank (which were received before Board presentation), together with the results of the consultation process as well as a participation strategy for engaging indigenous groups in pilot implementation and monitoring activities.

Impact on women. An exploratory gender impact assessment (performed by Centro, a Peruvian NGO, with funding provided by the Gender Support Fund) analyzed gender roles and attitudes, and the differential effects of the project on the lives of women and men, with respect to seven issues: access to services, women's mobility, time use in domestic activities, access to resources and benefits, participation in local markets, labor market dynamics, and women's participation in community organization and leadership. On balance, the authors report generally positive effects of improvement of the rural roads system: to a greater or lesser degree it has facilitated mobility, communications, access to resources, and participation in the labor market for both women and men, and women report a high level of satisfaction with the improvements made. However, the authors report inter- and intra-gender differences in the extent and nature of the effects of the project; also, in some variables, no effects were detected; and some aspects of the project may have had negative effects (for example, low levels of women participation in maintenance micro-enterprises might contribute to reproducing a pattern of male authority in the organization of road maintenance). Local gender relations, economic realities, and other factors (e.g., alcoholism and increased rural-urban migration, male abandonment of household) mediate the ability of road improvements to effect changes in many major aspects of daily life, including access to services, women's mobility patterns, labor market participation. The usefulness of the findings is greatly increased by the recognition that (i) neither women nor men constitute homogenous groups, and (ii) gender relations vary locally (in spite of the apparent homogeneity of the communities sampled); consequently, project impact studies need to differentiate between relevant groups and tie their findings to specific geographic areas or communities. More details are given in Annex 11.

^v *Peru Indigenous Peoples' Development Background, Policies and Program Strategy.* World Bank, November 1998.

6.2 Participatory Approach: How are key stakeholders participating in the project?

Participation in Sub-project Generation. To achieve the intended objectives of alleviating poverty and building up local institutional capacity for sustainable maintenance, the on-going project makes the beneficiaries participate in the various phases of subproject generation, design, implementation and maintenance. Box 4 gives a brief description of the participatory processes carried out during the implementation of the on-going project, their intended purposes and main contributions to the project. These exercises will continue under the proposed project, further strengthened with the introduction of various measures identified in the context of the social assessment completed in 2000, which aim at: (i) improving the identification of key stakeholders based on beneficiary profiles and outlining an outreach strategy when relevant; (ii) retooling the participatory mechanisms as necessary to ensure active involvement of the most vulnerable groups; (iii) addressing possible issues that may arise from a planned expansion to poor areas in the Selva region; and (iv) refining 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. Table 10 in Annex 11 presents the RRP's stakeholder analysis and outreach strategy.

Box 4 : The Participatory Approach under the RRP

- *Role of Participatory Processes under the Project.* The on-going project makes the beneficiaries participate in the various phases of subproject generation, design, implementation and maintenance. While the whole project design is built on this participatory approach, it relies on the systematic use of participatory workshops especially designed to ensure that community participation is undertaken in a systematic and organized manner. The workshops have provided an opportunity to: (i) assess transport needs at the community level, ensuring that the needs of the rural poor are taken into account; (ii) confirm with the beneficiaries the priority of the proposed road rehabilitation subprojects and the commitment of the community to their maintenance; (iii) validate the design of the selected subprojects to include local solutions; (iv) mobilize support for road maintenance through increasing ownership of the project and promoting micro-enterprises formation; and (v) provide local communities with necessary information about the project and their role in the project. Participation processes were also used to conform with community members the micro-enterprises for road maintenance (see Annex 11 for a description of selection process), and design training materials and guidelines for building rural road management capacity at the local level (whose adequacy was tested on a sample of municipal officials representing the intended final users).
- *Workshops for Subproject Generation.* In 1996 PCR carried out 23 participatory workshops in those provinces within the project area that have the highest poverty levels, with the overall purpose of identifying in consultation with local authorities and community leaders those road rehabilitation and NMT improvements with higher priority for the communities. PCR's field offices conducted another round of participatory workshops (20 in total) in 1997 to assess the outcome of the rehabilitation and maintenance program, re-ascertain the priorities set in 1996, and give *alcaldes* who did not participate in previous exercises the opportunity to submit their proposals, as a first step to expand the project to new provinces. *Alcaldes* have usually been the first resource used in giving detailed information about the basic structure of the community and its organizations, and in identifying those leaders from the rural communities that should be invited. However, often spontaneous mobilization happens: when local leaders knew about the meetings, they invited themselves.
- *Main Contributions.* Community participatory workshops are a powerful way to mobilize public involvement in and create ownership of a development project. The workshops confirmed the validity of the project design and also proved very useful in: (i) confirming to PCR officials the adequacy of local participation in identifying priorities and local bottlenecks to development; (ii) demonstrating the comparative advantage of using NGOs already working in the areas for implementing some project components; (iii) identifying a large demand for the rehabilitation of non-motorized tracks that in the absence of the workshops would have not materialized. As the relevance of the NMT component had been questioned at certain government levels, PCR took two years to start its implementation until communities confirmed their strong interest; (iv) bringing a more "holistic" understandings of the problems and needs faced by the communities. This perception has permeated most of the project responses in a way that is far from conventional for a road agency; and (v) exposing local authorities to participatory approaches and enhancing coordination between provincial municipalities and their respective districts.

Consultations for the River Transport Improvement Pilot. In November 1999, open consultations with the communities of Atalaya, Yparia and Masisea along the Ucayali River made it clear that building wharves and storage facilities and rehabilitating the rural roads and tracks that give access to them, in isolation, were not perceived by these communities as an adequate response to their staggering needs. In spite of lacking elementary river infrastructure (which would allow better and safer river transport operations), communities give little attention to these river facilities because they believe that only through more ambitious road investments is how their communities will solve their integration problems and they will get out of poverty. Also, it became evident through the consultations that certain social and economic behaviors, inter-link among themselves to end in the problems (malnutrition, alcoholism, poor productivity) that are driving these communities into stagnation and poverty.

Based on this early consultations, the project team agreed to broaden the interventions under the pilot in order to complement transport improvements with: (i) offering technical assistance in areas such as land use planning and marketing or commercialization strategies for local products; (ii) promoting strategic

partnerships to strengthen local organizations and obtain technical and financial support to develop productive projects; (iii) coordinating interventions in other sectors such as water, sanitation, health and education. The first two aim at helping communities to identify those products with greatest market potential and produce them in the quantities and quality these markets require, while the latter aims at delivering a holistic response to the "problems" that drive these communities into a situation of extreme poverty and vulnerability. The participatory process will continue during pilot design and implementation to ensure that communities have a clear understanding of the opportunities offered by the pilot, and the reasons for rejecting certain community proposals (i.e., those that are either too ambitious for the scope of the pilot or might lead to negative direct or indirect environmental impacts) as well as the activities included instead to help these communities realize the benefits of the planned interventions.

6.3 How does the project involve consultations or collaboration with NGOs or other civil society organizations?

The on-going project is making ample use of local NGOs to deliver those programs where civil society organizations participation offers comparative advantages over other alternatives. The non-motorized track improvement component is particularly suited to NGOs' work, as it requires building trust and ownership among community members through a long-term involvement. Box 5 gives a brief account on how the project has benefited from NGOs participation, based on an assessment done by PCR in November 1997. The positive experience gained through the pilot on non-motorized transport played a key role in overcoming an initial resistance to involve representatives of civil society in government programs.

The second phase of the program will further this cooperation in two ways: i) broadening the involvement of NGOs in strengthening local organizations and facilitating access to long-term assistance for the communities to better realize the benefits brought by transport improvements (especially those to non-motorized tracks as they affect the most isolated villages); and ii) establishing strategic partnerships with networks of NGOs involved in rural development, to create new spaces for civil society and support forms of privately-led growth capable of leveraging the multiplier effect of public expenditure rather than depending exclusively on public expenditure (see Annex 2 for a description of the so-called "Local Development Window").

Box 5 : Experience with NGOs under the first phase of the RRP

- *Rationale.* NGOs offer comparative advantages in delivering programs where a well-established, trusted relationship with the community is critical to mobilizing ownership at the local level and achieving long-term sustainability, and where NGOs have the potential to leverage other local development initiatives and enhance side social effects.
- *Breadth of NGO Involvement.* About 25 NGOs have so far participated in project activities, with 21 local NGOs involved in the design and implementation of NMT improvements, and the remainder in activities such as the formation of micro-enterprises for rural road maintenance, preparation of training materials and guidelines for institutional strengthening through participatory methods. This success is predicated on an appropriate selection of the local NGOs as well as PCR's commitment to the program. (The cornerstone behind them were the advise and valuable contacts provided by the Bank's NGO coordinator in the Lima Office, who gained the trust of both PCR and NGOs involved).
- *Comparative Advantages of NGOs.* In an assessment performed in November 1997, PCR concluded that: (a) the methodology used for procuring the services resulted in the selection of NGOs with extensive knowledge of the local conditions and a proven record in the execution of local development projects. Both are vital for increasing ownership and gaining support from community members; (b) the comparative advantages of NGOs over other alternatives include: (i) lower costs due to economies of scale achieved by being already operating in the area; (ii) greater capacity to mobilize and link with the community due to the involvement they have through their own development projects; (iii) a clear identification with a geographic area (to the extent that an NGO not active in a given area declined the invitation to participate); and (iv) greater flexibility to accommodate local priorities as perceived by the communities.
- *Best Practices under the Project.* The NGO who assisted the communities of Paruro and Accobamba in designing and carrying out NMT improvements did a remarkable job in two particularly relevant aspects: i) the effort placed to ensure that the community internalizes and commits itself to the project objectives. For example, the "after the project" targets were based on realistic growth assumptions discussed and agreed upon with the community rather than the larger potential offered by the project area. (These rural communities cultivate only a small portion of the available arable land as they perceive that the lack of access to markets constrains commercialization of larger surpluses, on average only 20% of the production is sold). The heads of community household agreed to increase by 28% the area subject to farming, as part of their commitment to the project; and ii) the flexibility and strong commitment to accommodating local priorities, to the extent that it prepared engineering designs and supervise the execution of additional works at no cost to the project to better respond to the community needs. Although their contract had long ago expired, the NGO continues to be involved with the community and promotes the mobilization of additional assistance by other NGOs active in the area. It becomes evident that for NGO, the client to which they felt accountable was the community rather than PCR, as the relationship and credibility already established with the community is what they value most.

6.4 What institutional arrangements have been provided to ensure the project achieves its social development outcomes?

For its demonstrated capacity and position within PCR, the Social Mobilization and Institutional Development Unit -one of the three main organizational divisions within PCR -is well-prepared to undertake the proposed project activities and ensure that the project achieves its intended social development outcomes. Furthermore, gender and social analysis training will be mandatory for the staff working in the unit as well as for staff working in the 10 field units. The unit will also be trained in participatory methodologies to strengthen its work with municipal governments and communities. The training on gender has already started. Training would also be offered to local officials and community leaders (majors, community leaders) as part of the municipal strengthening efforts (see Annex 2). The training modules range from raising awareness raising to acquiring of skills relevant in the performance of their (sometimes new) duties.

6.5 How will the project monitor performance in terms of social development outcomes?

The project includes a comprehensive project monitoring and evaluation system based on a combination of:

(i) surveys and compilation of data collected by PCR to report the selected monitoring indicators agreed upon under the project logical framework, which are shown with greater detail in Annex 1; (ii) a series of participatory workshops with beneficiaries and interviews with focus groups performed on a regular basis by PCR and the NGOs involved in the "Local Development Window" to gather information on communities needs and perceptions. A great deal of the project's success is due to the committed participation of manifold groups diligently contributing their "grain of sand" to accomplish project aims. These groups have been mobilized and are being supported by staff from the project and from other collaborating organizations within civil society or the public sector; (iii) rapid social assessments exercises, centered on a particular theme to better understand social links or effects; and (iv) a formal assessment of the impact of project activities on the livelihood of the beneficiaries. A study similar to the one completed in 2000 will be repeated in 2003.

7. Safeguard Policies:

7.1 Do any of the following safeguard policies apply to the project?

Policy	Applicability
Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Natural habitats (OP 4.04, BP 4.04, GP 4.04)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Forestry (OP 4.36, GP 4.36)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Pest Management (OP 4.09)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Cultural Property (OPN 11.03)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Indigenous Peoples (OD 4.20)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Involuntary Resettlement (OD 4.30)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Safety of Dams (OP 4.37, BP 4.37)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)	<input type="radio"/> Yes <input checked="" type="radio"/> No

7.2 Describe provisions made by the project to ensure compliance with applicable safeguard policies.

The safeguard policies on Environmental Assessment and Indigenous Peoples would apply to one of the project components only: the pilot on River Transport Improvement. The pilot is of a very limited scale -- it represent less than 3.5 percent of the total project cost - and its purpose is, precisely, to develop and test a strategic framework for improving rural accessibility in the *Selva* region in a manner that will enable a sustainable social and economic development of these areas.

For the pilot on river transport improvement, the environmental policy and indigenous policy of the Bank have technically not been complied with because the environmental assessment and IPDP were not prepared and fully disclosed before appraisal. An exception to these policies is requested because the activities in question are minor and will only begin to take place two years after the expected date of effectiveness and, in addition, the following conditions would provide an adequate safeguard: (a) before Board presentation the Borrower has presented to the Bank satisfactory guidelines for carrying out an environmental assessment and preparing an IPDP with regard to this pilot component; (b) a disbursement condition has been established in the Legal Agreement that the IPDP and environmental assessment for the pilot on river transport improvement will be carried out in accordance with said guidelines; and (c) a covenant has been incorporated to the Legal Agreement that the component will not be carried out absent the existence of such satisfactory environmental assessment and IPDP, regardless of where the financing may come from (IBRD, IDB or local counterpart funds). Finalizing full consultation and analysis from an environmental and indigenous point of view at appraisal would have meant that the results would become stale by the time they would be applied in two years time. Hence, it seems more sensible to finalize the safeguard work when needed, controlling the situation through the conditions listed above.

The pilot would finance small subprojects screened and designed through community involvement. The specific environmental impact assessment (EIA) will be completed as the pilot interventions are identified and designed, in compliance with the Environmental Assessment safeguard. A "negative list" of environmentally sensitive activities will be included in the MOP once the EIA is completed. Moreover, key safeguards built into the pilot design ensure its implementation will have no adverse impacts on the environment and/or the livelihood of the communities in the pilot area, namely: (i) the pilot will be carried out in a purposely limited area. Centering the activities around a few locations helps to keep under control the pilot interventions and their impacts, thus reducing any risks associated with them; (ii) the proposed accessibility improvements hinge on the use of existing waterways and river transport services for inter-regional transportation, to avoid environmental damage and eliminate the risk of induced migration; and (iii) a substantial portion of the pilot resources --which represent about 23 percent of the pilot total cost-- are devoted to completing environmental, social and economic impact assessments for each of the areas selected, and designing and implementing a participatory monitoring and evaluation system to keep track of outcomes and medium term direct and indirect impacts.

The exploratory assessments conducted during pilot preparation confirmed there are indigenous peoples among the intended beneficiaries of the pilot. Preparation of the pilot has followed the sound participatory principles that PCR has been applying under the RRP. Based on country reports (indigenous profile, legal framework studies), and lessons learned with ongoing operations including the RRP and the Peru Indigenous People LIL, the project has prepared a specific strategy to address indigenous issues. This strategy provides the framework required for the preparation of specific IPDPs for the indigenous communities in the upper Ucayali River through a participatory process to ensure they get their full share of the intended pilot benefits. The reasons for taking this approach are as follows: (i) as noted above, the pilot consists of small subprojects to be screened, designed and implemented by the respective beneficiary communities. For their small size, these interventions do not pose a risk to Indigenous Groups living in settlements closed to the three pilot locations, (in fact the pilot will benefit Indigenous Groups); and (ii) the pilot interventions are scheduled for implementation in the third year of the project implementation period. Completing the participatory assessments so in advance would not only render these processes outdated but also raise expectations within the communities that could even turn into undesirable social effects if the entire cycle --from identification to implementation-- is not closely managed, and/or the interventions are not materialized in a timeframe perceived as reasonable by the communities. PCR will complete these processes once both funding and management capacity are in place. The IPDPs developed under the pilot will be submitted to the Bank to ensure full compliance with the safeguard policy before starting implementing any civil works (condition of disbursement under the pilot). This is considered appropriate given the nature of the pilot, its very limited scale within the context of the project, and PCR's track record on the systematic use of participatory and impact evaluation tools.

F. Sustainability and Risks

1. Sustainability:

The project derives its sustainability from two different aspects: financial and institutional. On the financial side, the project provides a venue for continuous dialogue with the Government of Perú regarding the mobilization of local resources and revenue-sharing mechanisms for road maintenance. This will constitute a preamble to the ultimate definition of the Government's decentralization agenda. On the institutional side, the project exposes 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 would increase capacity and build pressure on local governments for continuous road maintenance.

Long-term project sustainability is linked to the establishment of a financial mechanism for the municipalities to undertake road maintenance activities. Without adequate allocations on road maintenance, the condition of the rehabilitated roads would begin to deteriorate. However, municipalities lack the necessary financial resources, as intergovernmental transfers from the FCM and other federal sources are presently insufficient to cover maintenance expenditures. Shifting investment resources to current expenditures, improved revenue generation and increased intergovernmental transfers could potentially increase road maintenance resources. The latter mechanisms would be developed under the proposed project to ensure a sustainable source of funds for road maintenance and management

The implementation of the first phase has demonstrated how beneficiary participation and a clear perception of the social impact of the project invigorate sustainability in many ways (see lessons learned). It has also shown that community arrangements (such as the Roads Committees formed for the non-motorized tracks) will not consistently deliver maintenance without some kind of support (either monetary or in kind).

2. Critical Risks (reflecting the failure of critical assumptions found in the fourth column of Annex 1):

Risk	Risk Rating	Risk Mitigation Measure
From Outputs to Objective		
Local governments and communities do not develop ownership of the project or link the purpose of the project to individual progress.	N	This risk is mitigated by the success of the first phase of the RRP and the participatory mechanisms that underpin its design. The proposed project includes measures to further strengthen these mechanisms and a new component specifically design to enhance the social and economic impact of project interventions.
Government unable to set a decentralization agenda that would enable the development of local capacity (institutional and financial) and support the gradual transfer of resources for a decentralized execution of project activities	S	Recent developments in the political arena suggest that a new administration will have to move forward in the decentralization agenda. The project supports a gradual and controlled transfer of resources to local governments

<p>Municipalities are not eager to commit technical and financial resources to effectively assume their rural road management responsibility</p>	<p>M</p>	<p>Mitigation measures include: (i) strong incentives for the expansion of the RRP within the jurisdiction of participating municipalities; and (ii) the RRP's pragmatic approach to institutional building --gaining support by showing results, which has proved a powerful instrument during the first phase.</p>
<p>From Components to Outputs</p> <p>Untimely release of counterpart funds jeopardizes continuity of maintenance program and implementation of investment program.</p> <p>MTC not committed to the project's poverty and institutional goals.</p> <p>Municipalities are not eager to co-finance rural road maintenance under the project arrangements and do not participate in the project's institutional program.</p> <p>Lack of flexibility in the use of the transfers under the FCM prevents Municipalities from supporting the project's MCM.</p>	<p>S</p> <p>N</p> <p>N</p> <p>N</p>	<p>The size of the investment program was scaled down to align project expenditure requirements with conservative macro-economic projections. GOP has included the project among the social programs to be protected in terms of budgetary allocations and timely release of funds.</p> <p>MTC has strengthened its participation in the National Dialogue on Poverty. PCR represents MTC in the committee set by PROMUDEH to coordinate government strategy for poverty reduction. Recent developments in the political front suggest that a new administration is likely to carry on with this strategy as well as further the decentralization agenda.</p> <p>The design of the cofinancing arrangement (e.g., size of the contributions required, implementation arrangements) was done in consultation with municipalities. The arrangements include strong incentives to ensure sustained support (e.g., additional investments conditioned to compliance with cofinancing arrangement). These incentives are reinforced by (i) the credibility of the RRP, established during the first phase; and (ii) the decision to keep the project area within the 12 departments to avoid competition for scarce project funds .</p> <p>The removal of current administrative restrictions barriers that inhibit the availability of local funds for recurrent expenditures is a condition of loan effectiveness.</p>
<p>Overall Risk Rating</p>	<p>M</p>	

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N(Negligible or Low Risk)
Low

3. Possible Controversial Aspects:

No controversial aspects envisaged.

G. Main Loan Conditions

1. Effectiveness Condition

- *Sector Policy. Making Operational the MCM:* (i) the Borrower shall have issued legislation, satisfactory to the Bank, that allows the Municipalities to utilize the transfers under the Municipal Compensation Fund to meet their contributions under the MCM; and (ii) PCR shall have entered into at least 65 Participation Agreements with the Provincial Municipalities with jurisdiction over rural roads rehabilitated under the (First) Rural Roads Rehabilitation and Maintenance Project, by which Municipalities and PCR commit the respective technical and financial resources to put into effect the MCM under terms satisfactory to IDB and the Bank.
- *Implementation.* The Steering Committee of PCR shall have formally approved and put into effect, in a manner satisfactory to IDB and the Bank, the MOP that will guide project implementation.
- *Financial.* (i) a financial management arrangement satisfactory to the Bank shall have been established in PCR and become operational; and (ii) the selection process of the independent auditors shall have been started.

2. Other [classify according to covenant types used in the Legal Agreements.]

Agreement was reached at negotiations that the Borrower will undertake the following:

- *Implementation.* Enter into Participation Agreements with each of the Provincial Municipalities, with the consent of the District Municipalities within the jurisdiction of the respective Provincial Municipality) under terms and conditions satisfactory to the Bank, for the purpose of ensuring the participation of such Municipalities in the implementation of the Project; such agreements to include the obligations of the Municipalities and the Borrower in respect of the financial arrangements and budgetary allocations required to support the MCM, the implementation of the institutional action plans, the provision of technical assistance, and the coordination for the selection of rural roads to be rehabilitated or maintained under the Project. In the event that a Municipality fails to perform its obligations under the applicable Participation Agreement: (i) not include activities in the jurisdiction, or for the benefit, of such Municipality in any proposed annual investment program until such Municipality has taken corrective action; and (ii) exclude from the annual investment program activities (including subprojects) within the jurisdiction, or for the benefit of such Municipality, other than the activities for which the contracting of works or services has been finalized.
- Carry out the Project in accordance with the MOP.
- Through PCR, not later than November 30 of each year of project implementation, starting in November 30 2001, furnish to the Bank for its review and approval, an annual investment program for the following calendar year prepared in consultation with the Municipalities, specifying: (i) the subprojects and activities to be financed out of the proceeds of the loan; (ii) the respective justification, implementation schedule and budget proposal; and (iii) information on the rehabilitation and periodic maintenance activities that MTC intends to undertake with its own funds in the project area on roads that are critical for the integration of the RRP's networks .
- Through PCR, ensure that the Participation Agreement with the Province of Arequipa entrust to RIPA the implementation of the pilot on Provincial Road Management.
- Through PCR, (i) not later than October 31, 2002 complete the implementation of the environmental and social assessments, including the respective EIAs and IPDPs, and the design and implementation of a participatory monitoring and evaluation system to keep track of outcomes and medium term direct and indirect impacts under the pilot on River Transport Improvement; (ii) not later than November 30, 2002 start implementation of partnerships among local authorities, other donors and civil society for the pilot; and (iii) not earlier than February 28, 2003 commence the procurement of the civil works

under the pilot.

- *Environment.* Through PCR, prior to approval of any proposed subproject, apply the environmental assessment procedures and guidelines prescribed in the MOP to carry out an environmental screening of each subproject.
- *Monitoring and Evaluation.* (a) Through PCR furnish to the Bank not later than January 31, April 30, July 31, and October 31 of each year of project execution, quarterly progress reports on the execution of the project during the preceding calendar quarter.
- Through PCR, (i) contract technical audits for each semester of project implementation with independent auditors to focus on the performance of the PCR and its UZs in the implementation of the Project, including achievement of physical targets, quality and cost of the works, and compliance with eligibility criteria, procurement, disbursement and environmental procedures set forth in the Operational Manual; and (ii) furnish to the Bank within 90 days after each semester the report of such auditors.
- Through PCR (i) not later than June 30, 2003, contract an impact evaluation study with independent consultants to assess overall project economic, social and environmental impact; (ii) not later than October 31, 2003 furnish to the Bank for its review and comments the findings and recommendations of the study; and (iii) not later than November 30, 2003 review with NGOs involved in Project activities, other agencies of the Borrower involved in rural development programs and project beneficiaries the results of such impact evaluation study taking into account the Bank's comments thereon.
- Hold a project annual review with the Bank not later than November 30 of each year of project implementation. The annual review to be held not later than November, 2003, shall focus on the following additional matters: (i) progress in the Borrower's administrative decentralization within the rural roads sector and possible adjustments to the Project operational setup; (ii) adoption of a strategy for rural roads funding; (iii) improvement of inter-agency coordination in the rural roads sector; and (iv) evaluation of the implementation of the pilots.
- *Financial Covenants.* Have the records, accounts and financial statements of the Project and the records and accounts for the Special Account for each fiscal year audited, in accordance with auditing standards acceptable to the Bank, and furnish to the Bank not later than four months after the end of each such year certified copies of the financial statements, an opinion on such statements, records and accounts and report of such audit by said auditors.
- Carry out a time-bound action plan acceptable to the Bank for the strengthening of its financial management system for the Project in order to enable the Borrower, not later than April 30, 2002, to prepare quarterly PMRs acceptable to the Bank
- *Disbursement.* As condition of disbursement in respect of: (a) payments for expenditures in respect of project activities within the jurisdiction, or for the benefit of a provincial municipality, unless the respective Participation Agreement has been entered into; and (b) payments made for civil work expenditures under the Pilot on River Transport Improvement, unless PCR has completed to the satisfaction of the Bank (i) the specific environmental, social and economic assessments, and engineering studies for each location considered under the pilot, including IPDPs and Environmental Mitigation Plans satisfactory to the Bank, (ii) the design and implementation of a reliable participatory monitoring system to evaluate the pilot's social, economic, and environmental impacts through community and Indigenous People involvement; and (iii) a detailed framework for a concerted action agreed with the various stakeholders in each pilot area..
- Retroactive financing, in an aggregate amount not to exceed \$5,000,000, may be made in respect of project expenditures incurred after January 1, 2001.

H. Readiness for Implementation

- 1. a) The engineering design documents for the first year's activities are complete and ready for the start of project implementation.
- 1. b) Not applicable.

- 2. The procurement documents for the first year's activities are complete and ready for the start of project implementation.
- 3. The Project Implementation Plan has been appraised and found to be realistic and of satisfactory quality.
- 4. The following items are lacking and are discussed under loan conditions (Section G):

I. Compliance with Bank Policies

- 1. This project complies with all applicable Bank policies.
- 2. The following exceptions to Bank policies are recommended for approval. The project complies with all other applicable Bank policies.

For the pilot on river transport improvement, the environmental policy and indigenous policy of the Bank have technically not been complied with because the environmental assessment and IPDP were not prepared and fully disclosed before appraisal. An exception to these policies is requested because the activities in question are minor and will only begin to take place two years after the expected date of effectiveness and, in addition, the following conditions would provide an adequate safeguard: (a) before Board presentation the Borrower has presented to the Bank satisfactory guidelines for carrying out an environmental assessment and preparing an IPDP with regard to this pilot component; (b) a disbursement condition has been established in the Legal Agreement that the IPDP and environmental assessment for the pilot on river transport improvement will be carried out in accordance with said guidelines; and (c) a covenant has been incorporated to the Legal Agreement that the component will not be carried out absent the existence of such satisfactory environmental assessment and IPDP, regardless of where the financing may come from (IBRD, IDB or local counterpart funds). Finalizing full consultation and analysis from an environmental and indigenous point of view at appraisal would have meant that the results would become stale by the time they would be applied in two years time. Hence, it seems more sensible to finalize the safeguard work when needed, controlling the situation through the conditions listed above. (See further details in section 7.2.)



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Annex 1: Project Design Summary
PERU: SECOND RURAL ROADS PROJECT

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
<p>Sector-related CAS Goal:</p> <ul style="list-style-type: none"> ● Alleviate rural poverty and raise living standards of rural communities in Peru. 	<p>Sector Indicators:</p> <ul style="list-style-type: none"> ● Overall reduction of poverty and extreme poverty by 1.0 and 2.0 percentage points, respectively. ● 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. ● Visits to health posts and hospitals in project area increased on average by 20 percent. ● Gradual diversification of income-generation structure and more dynamic labor markets in areas benefited by the project (e.g., percentage of wage-earned income, percentage of non-agriculture income increased). 	<p>Sector/ country reports:</p> <ul style="list-style-type: none"> ● Comparison of data pertaining to the project area in LSMS survey carried out by INEI or Cuánto. ● Impact Evaluation Assessment, performed over a sample of benefited and control areas. 	<p>(from Goal to Bank Mission)</p> <ul style="list-style-type: none"> ● Absence of national macro-economic shocks and natural disasters maintains a favorable environment for achieving the project poverty reducing goal (poverty baseline remains stable throughout project implementation).

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
<p>Project Development Objective:</p> <ul style="list-style-type: none"> ● Improve the access of rural poor to basic social services, market integrating infrastructure and income-generating activities with gender equity. 	<p>Outcome / Impact Indicators:</p> <p>At project end:</p> <ol style="list-style-type: none"> 1. Poorly accessible rural zones are integrated to social services and regional economic drivers, as indicated by: <ul style="list-style-type: none"> ● 3.5 million beneficiaries in the project area are interlinked by a reliable and affordable transportation system. ● Travel time to markets and district centers decreased by 40 percent after rehabilitation of project roads. ● Availability of freight and passenger transport services (in terms of volume) 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. <ul style="list-style-type: none"> ● 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 are engaged in local development initiatives/income-earning undertakings identified through the LDW, with women participation above 30%. 	<p>Project reports:</p> <ul style="list-style-type: none"> ● Impact Evaluation Assessment, performed over a sample of benefited and control areas. ● Project Participatory Evaluation and Impact Monitoring System. ● PCR's project information system. ● Evaluation Report issued by Coordinator of LDW. ● Implementation Completion Report prepared by the Bank. 	<p>(from Objective to Goal)</p> <ul style="list-style-type: none"> ● Enhanced coordination and targeting of rural poverty reduction programs improve quality and availability of basic social and infrastructure services, create productivity-increasing human capital in project area. ● Implementation of on-going poverty reduction programs in project area not scaled down due to fiscal constraints or shift in government priorities.

	<p>3. Strengthened local institutional capacity to manage rural transport infrastructure on a sustainable basis and to launch community-based development initiatives:</p> <ul style="list-style-type: none"> ●100% of provincial municipalities co-finance with PCR 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 		
<p>Output from each Component:</p> <ul style="list-style-type: none"> ●Selected rural transport infrastructure systems brought up to, and kept in good condition. 	<p>Output Indicators:</p> <p>At project end:</p> <ul style="list-style-type: none"> ●3,225 km of rural roads rehabilitated to an adequate level of trafficability. ●350 km of connecting primary and secondary roads rehabilitated to "good" condition. ●13,500 km of roads routinely maintained at project standards by micro-enterprises formed and trained under the project. ●3,100 km of community tracks for non-motorized transport improved. 	<p>Project reports:</p> <ul style="list-style-type: none"> ●Supervision reports by Bank missions. ●MTC's road inventory and PCR's project monitoring database. ●Biannual progress report. ●Registry of micro-enterprises, contractors and consultants administered by PCR. ●Activity Reports issued by Coordinator of LDW. 	<p>(from Outputs to Objective)</p> <ul style="list-style-type: none"> ●Local governments and communities develop ownership of the project and link its purpose to their individual and regional progress. ●Government sets a decentralization agenda that enables the development of local capacity (institutional and financial) and supports the gradual transfer of resources for a decentralized execution of project activities. ●Municipalities are eager to commit technical and financial resources to effectively assume their rural road management responsibility.

●Strategic framework for improving rural accessibility in the *Selva* region tested.

●Rural roads sector planning and management strengthened at central and municipal levels.

●Local development assistance channeled to rural communities in project area.

●Pilot for River Transport Improvement implemented in demonstration areas.

●Participatory monitoring and evaluation system for tracking outcomes and medium term direct and indirect impacts established in demonstration areas.

●Distribution of responsibilities among levels of government clarified through enactment of the *Reglamento de Jerarquización Vial* and implementation of project operational instruments.

●Pilot for Provincial Road Management implemented in the province of Arequipa, and institutional and financial models for enhanced coordination between the province and its districts tested.

●Contracts for road maintenance adapted to road class and usage conditions, and supervision mechanisms strengthened through effective municipal involvement.

●"Local Development Window" established with civil society, donor and government organizations.

●Concerted intervention strategy for enhancement of project impact and responsiveness to local needs/capabilities.

Project Components / Sub-components:	Inputs: (budget for each component)	Project reports:	(from Components to Outputs)
<ul style="list-style-type: none"> ● Rehabilitation of Rural Roads and Connecting Roads. 	US\$61.70 million	●Project Implementation Plan.	●Timely release of counterpart funds ensures continuity of maintenance program and implementation of investment program.
<ul style="list-style-type: none"> ● Routine and Periodic Maintenance of Rural Roads and Connecting Roads. 	US\$51.80	●Biannual progress reports on project execution issued by PCR.	●MTC remains committed to the project's poverty and institutional goals.
<ul style="list-style-type: none"> ● Improvement of Non-Motorized Rural Transport. 	US\$5.65 million	●Biannual Performance Audits.	●Municipalities eager to co-finance rural road maintenance under the project arrangements and participate in the project's institutional program.
<ul style="list-style-type: none"> ● Provincial Road Management Pilot. 	US\$2.95 million		●Increased flexibility in the use of the transfers under the Municipal Compensation Fund allows municipalities to tap sufficient local funds to support the project co-financing mechanism.
<ul style="list-style-type: none"> ● River Transport Improvement Pilot. 	US\$5.30 million		
<i>Institutional Development:</i>			
<ul style="list-style-type: none"> ● Improvement of Rural Transport Policy and Strategies. 	US\$1.37 million		
<ul style="list-style-type: none"> ● Improvement of Rural Road Planning and Management. 	US\$3.71 million		
<ul style="list-style-type: none"> ● Development of community-based micro-enterprises for road maintenance. 	US\$2.80 million		
<ul style="list-style-type: none"> ● Strengthening local capacity to engage in social and economic development initiatives. 	US\$0.72 million		
Project Administration	US\$14.00 million		
Front-end Fees	US\$1.00 million		

Annex 2: Detailed Project Description

PERU: SECOND RURAL ROADS PROJECT

The project comprises six components, namely: (i) rehabilitation of rural roads and connecting primary and secondary roads; (ii) routine and periodic maintenance of roads; (iii) improvement of non-motorized transport; (iv) provincial road management pilot; (v) river transport infrastructure improvement pilot; and (vi) institutional building. A brief description of each component follows.

By Component:

Project Component 1 - US\$61.70 million

Rehabilitation of Rural Roads and Connecting Primary and Secondary Roads

This component would finance rehabilitation of about 3,575 km of roads in the 12 participant departments to improve accessibility to rural areas and restore operating conditions along regional economic road corridors. It would entail works such as spot improvements to eliminate drainage deficiencies, correcting existing surfaces with regravelling to provide a more durable running surface over poor soils and on steep gradients, removing landslides, building retaining walls and additional drainage and erosion control structures; these works would aim at restoring year-round trafficability and ensuring a level of access tailored to the specific transport needs of the local communities. Through rehabilitation and spot improvement access is substantially improved at a low cost, in terms of transport time required and accessibility during the rainy season. Paving, widening or realignment are not envisaged, to avoid unnecessary high standards that affect both cost and program output over time.

The project will rehabilitate about 3,225 km of rural roads. Though poorly engineered, these roads have geometric standards reasonably adapted to the terrain and the traffic they serve (from a few vehicles a day up to 15-20 vehicles on peak market days, mostly micro-buses and 3 tons trucks).

This component will also provide for the rehabilitation of primary and secondary roads that give access to the rural road systems rehabilitated under the project and connect them with markets and economic centers. These are unpaved roads carrying traffic in the range of 50 to 200 vehicles per day, and that after many years with very little maintenance are in deplorable condition. PCR has already rehabilitated about 2,300 km of primary and mostly secondary roads during the first phase of the RRP, so the 350 km planned under the proposed project would consist of carefully selected roads that are critical to integrating into consolidated networks all the roads restored under the program.

Primary and secondary roads are under the direct responsibility of MTC. Thus, the works on these roads will be coordinated with the road programs undertaken by DGC and SINMAC on an annual basis. Agreement was reached at negotiations that MTC and PCR will coordinate their annual programs, and PCR will furnish to IDB and the Bank by November 30 each year, starting in 2001, the rehabilitation and maintenance programs to be undertaken during the next calendar year by the project and by MTC with its own resources in areas that are critical for the integration of the RRP networks.

Because of the simple nature of the rehabilitation works, they can be carried out through labor-intensive methods without compromising quality and cost-effectiveness. Most of the works will be contracted out to small local contractors, who will make ample use of the labor force available from the benefited communities. The implementation of the first phase of the RRP has opened up a regular market for simple mechanized and labor-based rehabilitation works, strengthening the local construction industry. Use of

local labor would increase farm incomes during periods of reduced agriculture activity, notably between March and September in the *sierra*, which is the dry season when most of the works will be carried out.

Project Component 2 - US\$51.80 million

Routine and Periodic Maintenance of Rural Roads and Connecting Primary and Secondary Roads

This component seeks to give continuity to, and further strengthen the routine maintenance system set up during the first phase of the program. It would entail maintaining from about 11,300 km of roads at the beginning of the project to about 13,495 km at the project end. The strategy pursued under the project is that the road network in most of the *sierra* region first must receive rehabilitation before maintenance activities 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, whose need typically arises during the rainy season between December and April. The project would basically finance routine maintenance of those roads rehabilitated through the project, but other roads could be included if local governments commit themselves to supporting these activities. Maintenance of roads built or rehabilitated by other rural development programs would also be eligible for project support, provided they are linked with, or in the vicinities of road sub-projects being implemented under the project.

The first phase of the RRP set up a cost-effective routine maintenance system based on contracting out labor-intensive works to micro-enterprises, local cooperatives and other community-based organizations. The system has overcome the difficulties of ensuring central-government maintenance of a myriad of scattered rural roads and the failure of traditional municipal force account works. The impact study completed in 2000 has demonstrated its comparative advantages over other traditional approaches. Moreover, the system has excelled in its social impacts, as micro-enterprises have generated employment opportunities and acted as catalysts for other local development initiatives at the community level. The perception of these side benefits has built pressure over central and local authorities for continuous road maintenance. The micro-enterprise system would be fine-tuned through a well-focused technical assistance program described under Project Component 6 below. In particular, maintenance costs under the RRP will be reduced during the second phase taking into account the lower opportunity cost of local labor (agricultural daily wages), an increase in the productivity of micro-enterprises after several years of training, and the introduction of various forms of contracts. Altogether, these measures will enhance the sustainability of the micro-enterprise program under a municipal environment.

Emergency maintenance activities will continue being handled through contracts with associations of micro-enterprises, supported by municipalities and contractors for equipment-intensive works. The follow on project would introduce a more systematic approach to periodic maintenance, demonstrating how labor-based routine maintenance contracts can be effectively combined with equipment-based area-wide periodic maintenance contracts. While the project extensively relies on the provision of services through the private sector, municipalities and associations of municipalities capable of setting up an efficient plant pool would be eligible to undertake periodic maintenance works under agreements that would set out the program targets and quality standards to be met, as well as the standard rates to compensate the municipalities upon completion of the agreed works. The rationale for this is that many municipalities have recently acquired new road equipment financed through a central government-sponsored program; the loans were provided by *Banco Nación* and their amortization backed by the FCM transfers to participant municipalities, further constraining their ability to make cash contributions to local programs. Pressed for cash, some municipalities are renting the equipment to contractors without making appropriate provisions for equipment amortization and maintenance. Thus, in these cases, participating in the periodic

maintenance program would serve a twofold purpose: ease the financial burden imposed by the co-financing arrangements under the project and put the equipment to good use; more importantly, the program incentives would assist in building up ownership and local capacity for network-wide maintenance planning, resource usage and control, and increase accountability through stakeholder involvement and close monitoring by PCR. Any force account-type arrangement with the municipalities would be subject to prior review by IDB and the Bank.

Due to the high vulnerability of the rural road infrastructure, year-round access is possible only if maintenance is provided on a continuous basis immediately after the rehabilitation. Thus, maintenance is an integral part of the project design to ensure sustainability and credibility over time. The project provides a structured learning exercise and adequate funding not only for developing innovative schemes but also for sustaining their effectiveness through implementation. The IDB and the Bank loans would continue financing the maintenance program on a declining basis, while the local contribution (central and local governments) would increase accordingly throughout project execution.

The rationale for funding routine maintenance is that local governments have very limited resources available for recurrent expenditures, especially in the poorest areas which are the main target of the project. By providing a demonstration of the benefits from adequate and sustained road maintenance over the past five years, the first phase of the program has developed a great deal of support for the concept of simple day-to-day maintenance among the beneficiaries and central government authorities. However, central government also faces tight fiscal constraints and, since local governments have the main responsibility over the rural roads network, it is not sustainable to conceive a rural road maintenance system that entirely relies on a recurrent transfer of resources from central government. A study conducted during the first phase analyzed the system of road user charges and the financial position of the municipalities, concluding that rural municipalities lack the funds needed to assume full responsibility for rural road maintenance. The study proposed the creation of a Road Maintenance Fund to secure a steady flow of funds for road maintenance at the various levels of administration. For its fiscal implications, this sectoral solution was eliminated from the legislation approved by Congress (Transport Law of October 1999) leaving the development of a more sustainable strategy firmly linked with and contingent on broader developments in Peru's decentralization framework, especially those related to local fiscal powers and intergovernmental transfers.

The proposed project would implement a co-financing arrangement between central government and the benefited local governments --the Maintenance Cofinancing Mechanism--, which although not a definitive solution (it still relies on transfers from MTC's budget), represents an effective step in the transition towards fully decentralized management and financing of rural roads. From January 1, 2002 and on, municipalities participating in the RRP will start contributing to the cost of routine maintenance activities carried out in their jurisdiction. The municipal contribution is defined through a *cofinancing formula* in terms of a "quota" per km rehabilitated by the RRP in each province. The cost of this quota --initially set at US\$300/km for all provinces-- will be borne jointly by the district municipality with specific jurisdiction over the road and the provincial municipality with jurisdiction over the entire province. The quota might vary during project implementation depending on the progress in fiscal decentralization. To ensure the timely availability and release of funds, the MCM will put in place the following two administrative instruments, which will become part of the new Participation Agreements between PCR and the municipalities:

1. *Budgetary Transfer Agreements (Convenios de Transferencia Presupuestal)* signed by the Provincial Municipality and each one of the District Municipalities of the province, whereby the district municipalities transfer to the provincial municipality the resources for rural road maintenance agreed under the cofinancing formula. This transfer is made automatically from each municipality's allocation

of the Municipal Compensation Fund (*Fondo de Compensación Municipal – FCM*) deposited in its account in the *Banco de la Nación*, and into a special account in the same bank in the name of the Provincial Municipality, which is to be used exclusively for the financing of rural road maintenance activities under the PCR. The Provincial Municipality also deposits its share of the cofinancing formula into this special account through an automatic transfer from its own allocation of the FCM. This agreement also establishes procedures for the Provincial Municipality to report to the District Municipalities on the use of the funds;

2. *Budgetary delegation agreement (Convenio de Encargo)* signed by the Provincial Municipality and the PCR, which gives the PCR authority to carry out rural road routine maintenance activities in the province, according to the contracting and supervision methodologies agreed under the Project Operating Manual (POM), and to have exclusive access to the resources deposited in the special account of the province in the *Banco de la Nación* to cover the portion of the maintenance costs corresponding to the local governments under the agreed cofinancing formula. The agreement also establishes the reporting procedures to be used by the PCR to meet its fiduciary responsibilities with the municipalities.

Project Component 3 - US\$ 5.65 million
Improvement of Non-Motorized Rural Transport

This component would mainstream a pilot developed and successfully tested during the first phase of the program. Non-Motorized Transport (NMT) programs are strategic interventions to alleviate rural poverty, as they provide access to the most vulnerable and poor of the rural areas. In the highlands of Peru, large communities depend exclusively on tracks and trails to connect them to the closest village, district or road in order to access basic social services and move their products to markets.

The unclassified network of tracks and footpaths services a substantial part of the transport needs of isolated rural communities and of women in particular, for whom a significant portion of transport movements are unrelated to the rural road network. Transport and mobility of goods and people in rural areas rely on the existence of adequate infrastructure and on the access to means of transport. Mobility needs in rural areas are often met by non-motorized transport (NMT) modes, even on classified roads. Widespread use of non-motorized vehicles (bicycles, tricycles, and man-pulled carts) and pack animals is hampered by both the poor condition of rural transport infrastructure (compounded with difficult terrain conditions) and their high acquisition price, which is above the cash income earning capacity of most rural households.

The non-motorized rural transport component provides 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 will finance: (i) technical assistance for village-level infrastructure management. Participant communities will be 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 will 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 would finance 70 percent of the total cost estimated by PCR for the proposed works based on standard designs and unit costs. This would fully cover the cost of materials, equipment and skilled labor, while part of the unskilled labor would be contributed by the community.

Under the proposed project, the scope and time frame of the NGO's work would be broadened to help communities take full advantage of the benefits brought about by improved accessibility, expand physical targets beyond the project-funded ones at their own initiative, and undertake local development initiatives (the latter through strategic partnerships describe under the institutional component below).

The project will not directly address the issue of improving affordability to more efficient means of NMT. It is anticipated, however, that the project would have 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 below), and generating supplemental income through implementation of the road components.

Project Component 4 - US\$2.95 million
Provincial Road Management Pilot

The proposed pilot will 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 road network. This would avoid the current institutional and financial segmentation that prevents 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 involving provincial and district officials as well as key representatives of the business community with vested interests in good roads. Municipal authorities have 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. Thus, although pilot investments will start in 2002, substantial institutional building has already taken place through the preparatory work made by the provincial authorities. The Assembly of Majors of the province has already issued the ordinance establishing the Road Institute for the Province of Arequipa (RIPA), approved its statutes and appointed its Manager. Due to its legal identity (a decentralized public agency), the unit has a 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 PCR, participant local governments), and with its own budget separate from those of other provincial organizations. As stated by the mayors of the province, the success of this coordinated approach will likely lead to its adoption by other sectors in the province.

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 PCR, these activities would serve as a controlled test of a model for decentralized road management. PCR will gradually expand to other provinces the model and implementation arrangements tested under the pilot, as their adequacy are proved and other provinces achieve the basic institutional and financial capacity to implement them.

Prior to starting the pilot implementation, PCR and RIPA will enter into: (i) a Delegation Agreement, which will set out the operational procedures and specific conditions for the transfer of project funds to the

province; and (ii) a Trust Agreement for operation of a trust account in *Banco Nación* through which the funds will be channeled. Both model agreements were reviewed and found satisfactory by IDB and the Bank. The RIPA would apply the same project operational directives in the POM agreed between PCR, IDB and the Bank for the proposed project, and report quarterly to PCR on the execution of the agreed program. PCR would transfer the funds to the trust account on the basis of a three-month payment plan prepared by RIPA and adjusted at the beginning of each quarter in line with the actual use of funds during the previous period. Subsequent transfers would be subject to RIPA's submission of the agreed supporting documentation to PCR for justification of project disbursements. PCR would retain the right to suspend the transfers to the trust account in case RIPA fails to comply with the terms stipulated under the Delegation Agreement. RIPA's operating expenses would be covered by the participating municipalities, and the corresponding annual budget authorization would be a pre-condition for the transfer of resources from PCR to the trust account.

The pilot would also help PCR in developing 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. They are critical to achieving PCR's long term mission goal --which is to focus on rural road policy formulation, provision of technical assistance to local governments and performance monitoring-- and gradually moving away from its current executing role.

Project Component 5 - US\$5.30 million
River Transport Improvement Pilot

The purpose of this pilot is to develop a strategic framework for improving rural accessibility in the *Selva* region to enable a sustainable social and economic development of these areas. Poor people from the highlands and even the coast migrate to the *Selva* in search of economic opportunities, increasing the pressure over its fragile environment. They often end up settling in areas that spoil environmental resources, place hefty demands on government agencies responsible for the provision of basic infrastructure and services, and ultimately can not support a sustainable livelihood. This trend is favored by the weakness of existing local regulations on land use, which are not enforceable in the absence of adequate incentives to stimulate sustainable development patterns (e.g., basic social and infrastructure endowments). The pilot will 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 will 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 Aguaytía river). The area was carefully selected for three reasons. Firstly, the proposed locations illustrate different constraints and challenges to improving both transport accessibility and rural livelihoods in a sustainable manner. The pilot would thus test different approaches to addressing these challenges. Secondly, centering the activities around a few locations helps to keep under control the pilot interventions and their impacts, thus reducing the risks associated with them. Finally, the proposed accessibility improvements hinge on the use of existing waterways and river transport services for inter-regional transportation. While this is an important safeguard to prevent undesirable environmental

and social effects, it represents perhaps the greatest challenge for the pilot, since it has to demonstrate to the pilot beneficiaries that their accessibility needs can be met through river transport in a place where residents view water transport as an inefficient last resort alternative to the lack of road access.

The pilot would entail: (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.

Although badly needed, the proposed accessibility improvements, in isolation, are not perceived by riverside communities as an adequate response to their staggering needs. These communities believe that only through more ambitious road investments is how they will solve their integration problems and get out of poverty. Furthermore, the consultations held to date revealed certain social behaviors that inter-link among themselves and end up in the problems that are driving these communities into stagnation and poverty (i.e., malnutrition, alcoholism, poor productivity). Thus, the pilot supports a more holistic view of development interventions, in which the proposed transport improvements are 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 first two, to be funded by the project, aim at helping communities to identify those products with greatest market potential and organize their production in the quantities and with the quality these markets require. The latter aims at delivering a holistic response to the "problems" that drive these communities into a situation of extreme poverty and vulnerability, and though not funded by the project would result from a concerted effort with other agencies to coordinate interventions in the pilot areas. The on-going preparatory work includes an inventory of social programs, actors, and the networks sponsoring them (government, donor agencies, civil society), which will provide a framework for coordinating the respective interventions.

As changes of community attitudes are necessary, the people whose behavior has to change must see their interests linked with the change and commit themselves to it. Implementing the pilot under the proposed holistic framework is expected to help riverside communities internalize the desired behavioral changes. This also requires furthering the participatory process started in late 1999 throughout the pilot phases of final design, implementation, and evaluation. Through it, communities would have a clear understanding of the opportunities created by the pilot and other concerted interventions, the reasons for rejecting certain community-driven proposals (i.e., those that are either too ambitious for the scope of the pilot or might lead to negative direct or indirect environmental impacts) and the activities to be included instead to help the communities realize the benefits of the planned interventions. In particular, the workshops during the final design phase would assist in triangulating social data gathered under the studies and reflect more accurately the perceptions and interests of vulnerable stakeholders (ethnicity, gender, and age) in the definition of the proposed interventions. The monitoring and evaluation of positive and negative changes brought by the pilot in each location would 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, 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 envisages an intense involvement of civil society, community organizations, and the population at large in the planned monitoring activities.

The civil works under the pilot are scheduled to start in 2003. Prior to commencing their execution, PCR will furnish to IDB and the Bank for review and approval: (i) the specific environmental, social and economic assessments and engineering studies for each location considered under the pilot, including Indigenous Peoples Plans and Environmental Mitigation Plans satisfactory to the Bank prepared on the basis of the guidelines submitted to the Bank prior to Board presentation, and (ii) the design and implementation of a reliable participatory monitoring system to evaluate the pilot's both negative and positive social, economic and environmental impacts through community and Indigenous groups involvement, and (iii) a detailed framework for concerted action agreed upon with the various stakeholders (government or donor programs, NGOs, and municipalities) in each area.

**Project Component 6 - US\$8.60 million
Institutional Development**

This component would further develop the institutional building program started under the first phase. While its main objectives remain broadly the same, some methodological approaches and contents have been fine tuned to better reflect road sector, governance, and social issues exposed by the implementation of the first project, and nurture new policy values which the follow-on project would emphasize (i.e., preparation for gradual decentralization, strengthening social capital formation, gender equity) and whose effect must permeate throughout every activity of the program. The institutional program is organized into four streams: (i) improving rural transport policy and strategies at a central level (MTC, PCR); (ii) improving planning and management of rural road networks, at the level of provincial and district municipalities; (iii) developing and training-on-the-job community-based micro-enterprises for road maintenance; and (iv) strengthening rural communities capacity to create and engage themselves in development opportunities by setting a "local development vehicle" through strategic partnerships sponsored by the project.

Improving rural transport policy and strategies. MTC's Planning Office and PCR are the main targets of this technical assistance and on-the-job training effort. 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). With the assistance of consultants MTC has drafted the various *Reglamentos* stipulated in the Law, which would provide key elements of the policy framework; (ii) engage on 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 PCR in further strengthening the road maintenance system, so successfully implemented during the first project. The technical assistance 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. PCR has already retained the services of a consultant.

In addition, PCR staff would receive training on areas that either demand new skills or will 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. The same NGO who conducted the exploratory analysis of gender impacts in 2000 has recently started training PCR staff on gender issues. The program would continue throughout project implementation to reach first PCR field staff and social promoters, and then micro-enterprise members, community leaders and other organizations engaged in project activities; the content of the program has been adjusted in line with the needs of the different targeted groups. 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 PCR to 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.

Improving Planning and Management of Rural Roads. The project would provide technical assistance to provincial and district municipalities to strengthen their capacity to: (i) manage the core road network under their jurisdiction; (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. Designing effective institutional programs aimed at building local capacity poses probably one of the greatest challenges for development projects. The quality and sustainability of these programs become even more critical when dealing with poor rural municipalities which are institutionally weaker and more difficult to reach.

This institutional program builds on a three-part effort. First, exposing 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. This "demonstration" effect --perhaps the greatest institutional achievement under the first project-- will be further invigorated with the introduction of the MCM, since it expands the functions entrusted under the project to all participating municipalities. With the assistance of an NGO, PCR developed during the first project a set of guidelines to assist municipalities in strengthening their procedures. The guidelines are organized in five modules conveniently suited to the municipal environment; they cover all phases of road management, with special emphasis on maintenance. A key strategy behind this effort is to enhance coordination between municipal provinces and their districts, and between districts and their villages. A piece-meal approach has generally dominated municipal interventions in the road sector, bolstered in part by an unclear allocation of competencies and responsibilities between the two levels of municipal government as well as funding constraints that are further exacerbated by the current system of intergovernmental transfers under the FCM. Establishing effective mechanisms to enhance the ability of the municipalities to work together and build up trust among them, is critical to developing an integrated network and functional transportation system for the province. PCR, through its local offices, would also promote the dissemination of "good practices" adopted by municipalities, as these experiences, successful but yet at reach, carry strong motivation and become an effective way of speeding up the development of local capacity.

<i>Capacity to be developed</i>	<i>Tools to be implemented</i>	<i>By Whom?</i>
<ul style="list-style-type: none"> • Identification of provincial and district road network and their physical and usage features (jurisdiction, functional class, level of service) • Assessment of needs (road infrastructure and rural transport services) through participatory processes, and formulation of priorities coordinated between province and its districts and in line with PCR's eligibility criteria • Maintenance management: contracting routine maintenance to micro-enterprises and managing periodic and emergency maintenance. • Development of a co-financing scheme between each province, its districts, and PCR, and annual allocation of funds 	<ul style="list-style-type: none"> • Road Inventory; • <i>Reglamento Jerarquizacion Vial</i> under Transport Law; • Workshops (prioritization of road program) • Monitoring maintenance program and micro-enterprises • Payment approvals • Participation Agreement with PCR (<i>Convenio Encargo Ejecución Presupuestal</i>) 	<ul style="list-style-type: none"> • All provinces participating in project • All provinces and districts participating in project
<ul style="list-style-type: none"> • Provincial Management of road network (strengthening organization to plan, carry out pre-investment studies and works, supervise and evaluate programs) • Identification of financial sources and institutional coordination with other agencies at the provincial level 	<ul style="list-style-type: none"> • Provincial Road Management Pilot • Technical Assistance Program for provinces to be "graduated" • Provincial Road Plan; • Road Management System; • Dissemination of experiences by successful provinces • PCR procedures for monitoring/controlling performance of provincial networks and the agencies that manage them 	<ul style="list-style-type: none"> • Arequipa Province • Provinces requesting assistance, candidate for graduation
<ul style="list-style-type: none"> • Community management of informal network of Non Motorized Tracks (prioritizing tracks, organizing Road Committees, designing upgrading programs, and setting up collective action initiatives for track maintenance). 	<ul style="list-style-type: none"> • Track Improvement Program at district level; • Strengthening Road Committees and district governments in track maintenance management; • Accompaniment by NGOs 	<ul style="list-style-type: none"> • Districts where NMT component is active

Secondly, setting up a demand-driven, flexible assistance program for provincial municipalities in their way to becoming eligible for direct execution of project activities in subsequent phases of the Rural Roads Program. Sustainable development of capacity at the local level is possible when there is effective demand by local administrations. This initiative would 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. The targets envisaged under the proposed project are necessarily modest, especially because initial progress would build on the experience gained through the execution of the Provincial Road Management Pilot. The program would enable participant municipalities to steer the definition of an agenda (activities, sequence, and progressive benchmarks) tailored to their specific needs and realities. The use of benchmarks would help focus the programs on a few prioritized goals, facilitate the assessment of progress and outcome, and increase motivation by showing early results. These benchmarks may extend beyond the implementation timeframe of the proposed project. In spite of this flexibility, the program would have a clear and practical purpose, namely to "graduate" municipalities that have assimilated the policies and practices supported by the project for an effective provincial management of their road networks, demonstrating sustained commitment while accomplishing progressive results. The technical assistance program would be carried out in a decentralized manner. PCR field offices are well-positioned to accompany the municipalities in this process since they are close to them and enjoy their trust after a proven record of working together with the poorest municipalities.

Thirdly, involving road users and other stakeholders in the road management process to increase municipalities' accountability. The first project put in place effective local participation mechanisms to improve selection and execution of rural road projects, and regularly assess progress in achieving the project development objectives. The follow on project would now institutionalize these mechanisms so to ensure they provide opportune and systematic feedback to the various agents implementing project activities and evaluating project performance. The challenge is to create an environment capable of mobilizing responsible leadership and participation at the local levels, in which multiple agents are positioned to offer support to local governments.

Developing community-based micro-enterprises for road maintenance. The first project addressed the difficulties of ensuring central-government maintenance of a myriad of scattered rural roads, and the failure of traditional municipal force account works, by contracting out to micro-enterprises routine and emergency maintenance of the roads rehabilitated under the project. The program proved very successful (see assessment in Annex 11). 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.

Strengthening rural communities and households' capacity to create and engage in social and economic development opportunities. This component is a step forward towards enhancing the impact of improved rural accessibility on the ability of rural communities to develop capabilities and access concrete income-earning opportunities to compose more sustainable and poverty reducing rural livelihood strategies. The project would establish a "local development window" (LDW)^U through a network of strategic partnerships with civil society, government and donor organizations. These organizations have expressed their willingness to set up a concerted strategy to complement the work done by PCR with other development interventions that may help rural communities make the most of the opportunities opened by the accessibility improvements achieved under the project. This confluence of activities is expected to produce synergies and enhance the probability of sustainable success. The specific objectives of the LDW are: (i) to strengthen rural people 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 PCR 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 PCR.

The rationale behind the LDW can be traced to the experience gained through the first project. The impact evaluation performed in 2000 showed that about 40% of the micro-enterprises were able to start new productive endeavors, taking advantage of their access to a secure income stream, technical assistance, and entrepreneurial training through the project. About 21% of these initiatives had to be discontinued for a variety of reasons (e.g., lack of markets, insufficient technical assistance, and financing constraints). While still quite a success given the difficulty of working in a rural environment, the results nevertheless stress the importance of having access to appropriate "know-how" and market links to ensure the production of goods and/or services with the quality and in the quantities for which there is effective demand. Through this component the follow-on project aims at both strengthening the sustainability of productive undertakings started by micro-enterprises and creating similar opportunities for other members of the rural communities, in particular the most vulnerable and poor reached through the NMT component.

But the LDW goes beyond being a catalyst of productive undertakings. Rural people access resources by engaging in relationships with other actors who operate within the State, market and civil society spheres, and who are both present, but more often than not, absent from their day to day activities. Access to other actors is conceptually prior to access to material resources in the determination of livelihood strategies, for such relationships become the mechanisms through which resources are distributed and claimed, and through which the broader social, political, and market logic governing the control, use, and transformation of resources are either reproduced or changed. Thus, being effective in enhancing rural community livelihoods requires acquiring competence to manage the relationships and transactions with the respective actors in each of the three spheres, taking advantage of what can be achieved through one sphere, and complementing it with actions in the other spheres.² This can happen through actions either of rural people or of external organizations, from the inside out, and from the outside in.

Strong organizations with networks linking them to other market actors (e.g., PRA, a poverty reduction program sponsored by USAID) can help open up market possibilities to rural producers that otherwise they would not have, and can in this way increase their ability to turn their assets (of whatever type) into income streams. At the community level, networks of trust and mutual accountability linking individuals in communities (not usually all the community) are critical to helping break the problem of access to financial capital and to promoting forms of collective action that facilitate the accumulation of produced capital, and through this a more effective participation in certain markets (e.g., consortia formed by all the project micro-enterprises in Apurimac or in Cusco to reach economies of scale and wider markets).

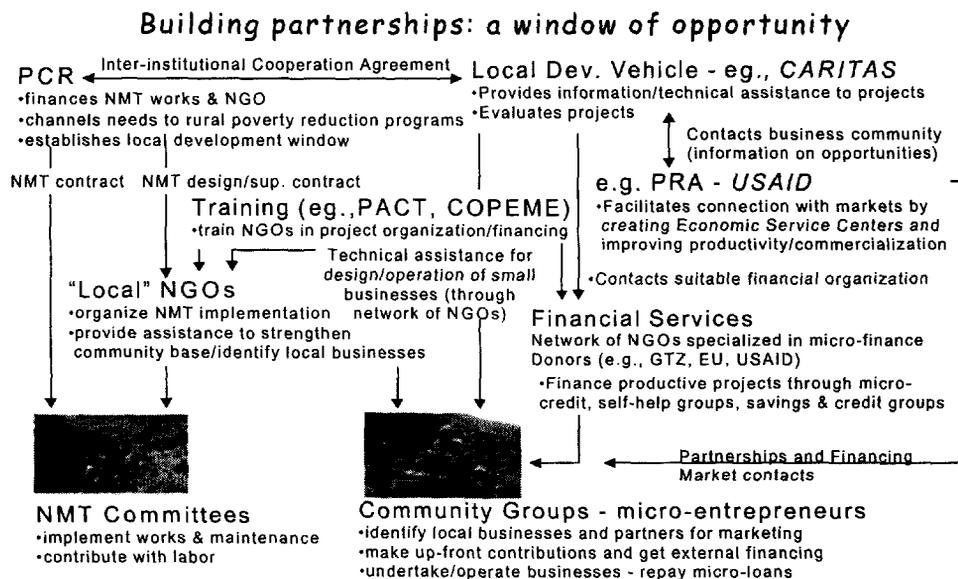
For the kind of skills and field presence needed, and to reach scale while maintaining a strong poverty focus, PCR can not lead this effort. The LDW, with all the interactions between rural communities, grassroots groups and key external actors, would be coordinated by an NGO with an established reputation in working with communities and micro-enterprises in rural areas, and capable of operating in a highly decentralized manner. Thus, the LDW would become the facilitating vehicle through which channel all the project assistance to foster local development initiatives.

The project would finance part of the coordination costs, through a Partnership Agreement between the selected NGO and PCR, and also training for NGOs and grassroots organizations participating in the LDW. The Partnership Agreement would spell out the overall goals, outputs and expected outcomes, with the inputs to be made by each institution, following a Logframe design of the LDW; the agreement will be renewed annually by mutual conformity. Funding for other activities would be raised by the respective participants.

The LDW would mobilize demand-driven technical assistance for identification of opportunities and design

of micro-businesses and productive projects. This would ensure the rational design and sequencing of development initiatives, so that the economic assets created or services rendered by the community meet the quality standards, price and volume needs required by the intended market. It would also improve information flows, reducing transaction costs faced by both, community grassroots organizations and private providers of technical assistance, financiers or purchasers of goods and services produced by community organizations.³¹ The LDW would open up spaces for civil society and widen the communities' contacts with prospective investors, donor agencies, NGOs specialized in micro-finance, and development projects. It may also help in making financial institutions, especially the small and medium-sized ones, look for market niches and opportunities for furthering their micro-finance programs to rural areas. However, the responsibility for structuring, operating and financing these undertakings would remain with the respective stakeholders and financial intermediaries involved. The LDW would not provide funding for this purpose. It is likely that certain undertakings may need additional investments in basic infrastructure, which might go beyond the capacity of the private sector, municipality or community involved. PCR will channel these needs to the appropriate government or donor programs capable of funding them, in line with the synergies sought by the LDW.

The graph below schematically describes the LDW, with the interactions and main roles contemplated for some of the public and private organizations who have already expressed their commitment to participate in this concerted effort. CARITAS-Peru is well positioned to perform the role of coordinator with its 48 diocesan organizations spread over the country and their experience in participatory social and needs assessments and the structuring of local development initiatives.³² Other actors who participated in the design of the LDW, include: PRA, an initiative funded by USAID that seeks the articulation of rural areas with markets through selected economic/commercial corridors; COPEME, a consortium of 72 NGOs specialized in training assistance and micro-financing for small and medium size enterprises; and PACT, an NGO specialized in training NGOs in organizing development undertakings.³³



Box 1: Main roles of NGOs under the LDW

Role of Coordinator of LDW. The coordinator would perform the following activities:

- (a) Identify institutions, initiatives and resources available in areas where project is active, and promote the engagement of new actors, by: (i) inventorying the institutions (civil society, private firms, donor and government agencies) involved in development activities in the area, mapping them according with their characteristics and capacity (sphere of operation, business type, services offered, financial strength, market position); (ii) opening up spaces and forms of cooperation among those organizations and the respective development programs; and (iii) establishing a web-site with information on the LDW and the opportunities offered of interest for prospective participants;
- (b) Assess needs and opportunities for local development with a view to identifying lines of action and delineating profiles for those productive undertakings that meet the needs and capabilities of the rural communities, and have an established market or solid demand potential. This would imply: (i) defining the specific requirements that make viable those productive activities (type, quality, volume, price, inputs); and (ii) assessing with the help of local NGOs and participatory planning exercises the human and social capabilities required to implement the proposed productive activities. In particular, the LDW would emphasize the promotion of those programs and undertaking most suited to ensure women participation and access to income-earning activities.
- (c) Provide technical assistance to "field NGOs", and through them, to the respective communities, for the structuring and marketing of productive activities and local development initiatives. The specific activities include: (i) assisting in mobilizing specialized skills and services when necessary to support the design or implementation of productive activities (e.g., production processes, quality control, commercialization strategies, information on prices; (ii) reviewing feasibility studies, especially with regard to demand forecasts and local capacity for implementation; (iii) exploring the availability of micro-credit and financial services, and contacting prospective investors and financiers; and (iv) accompanying implementation of productive activities until their financing/sustainability is ensured. When the level of effort of providing these services exceeds the general guidelines established under the LDW, the additional costs would be internalized by the respective subprojects.
- (d) Implement a monitoring and evaluation system for evaluation of LDW activities and their development impacts. This includes establishing monitoring indicators and baselines and preparing reports for dissemination among participants in the LDW.

Role of field NGOs. NGOs engaged in the NMT component would perform the following responsibilities: (i) design and supervise NMT improvements through participatory and capacity building processes; (ii) help rural villages target in the NMT component in creating self-managed grassroots groups and training them to develop the necessary capabilities and be more inclusive in addressing the needs of vulnerable groups (e.g., extreme poor, women); and (iii) assist grassroots groups/institutions to identify micro-businesses development opportunities, analyze their feasibility and prepare their business development plans.

^{1/} The proposed local development vehicle was named a "local development window" to reflect what it means for the rural communities: a window of opportunity through which translate their expectations into actions and realities.

^{2/} Each sphere has its own logics influencing the distribution, control and transformation of assets. What can be done to enhance livelihoods and access to resources by engaging in relationships within the market sphere is limited by basic commercial logic; what can be done through engaging with the State is constrained (and enabled) by the ways in which the state works; and what can be achieved by collective action and engaging with other civil society actors is structured by the range of benefits and limits of this form of action.

^{3/} The information relevant for grassroots organizations may refer to terms, conditions and procedures for accessing certain markets, prices in main markets outside the region, regional initiatives and their prospective markets, prospective investors, donors and government agencies, qualified providers of technical assistance, etc. For private providers, the information may refer to local needs, activities with greater potential by locality; terms and conditions for accessing financing or donors aid, etc.

^{4/} CARITAS brings invaluable experience in local development accumulated through extensive community work and its portfolio of development projects that extends across multiple sectors (health, nutrition, education, basic sanitation, agricultural and non-farm productive undertakings, micro-credit, labor training, community infrastructure). Spending the equivalent of three months in each community, CARITAS' specialists have carried out participatory diagnoses in about 1200 poor rural communities, which represents a 300 year/specialist effort. This methodological approach implies that CARITAS'

interventions are centered on the specific demands/needs perceived by the communities.

^{3/} Other groups interested in joining the LDW and the areas of interest are: International Labor Organization, training of micro-enterprises; CECI-Andes, a Canadian center for studies and international cooperation with interest in poverty alleviation, democracy and human rights, environment and resource management; *Grupo Acción Comunitaria*, a consortium of five Peruvian NGOs associated with Action International (a leader of the Consultative Group for Alleviating the Poor that manages micro-credit funds), development of entrepreneurial capacity, micro-finance services (one of the NGOs is MiBanco).

Annex 3: Estimated Project Costs
PERU: SECOND RURAL ROADS PROJECT

Project Cost By Component	Local US \$million	Foreign US \$million	Total US \$million
Rehabilitation of Rural Roads and Connecting Primary or Secondary Roads	24.50	25.56	50.06
Maintenance of Rural and Connecting Roads	30.40	17.85	48.25
Rehabilitation of Tracks for Non-Motorized Transport	4.20	1.05	5.25
Pilot on Provincial Road Management	1.40	1.38	2.78
Pilot on River Transport Improvement	2.50	2.39	4.89
Consultant Services	5.50	2.38	7.88
Institutional Development	6.00	1.83	7.83
Administrative Expenses	14.00	0.00	14.00
Total Baseline Cost	88.50	52.44	140.94
Physical Contingencies	3.11	2.38	5.49
Price Contingencies	2.10	1.47	3.57
Total Project Costs	93.71	56.29	150.00
Front-end fee		1.00	1.00
Total Financing Required	93.71	57.29	151.00

Project Cost By Category	Local US \$million	Foreign US \$million	Total US \$million
Goods	0.00	0.00	0.00
Works	67.01	51.23	118.24
Services	10.40	4.75	15.15
Training	2.30	0.31	2.61
Project Administration Costs	14.00	0.00	14.00
Total Project Costs	93.71	56.29	150.00
Front-end fee		1.00	1.00
Total Financing Required	93.71	57.29	151.00

¹ Identifiable taxes and duties are 18.18 (US\$m) and the total project cost, net of taxes, is 132.82 (US\$m). Therefore, the project cost sharing ratio is 37.64 % of total project cost net of taxes.

Annex 4: Cost Effectiveness Analysis Summary

PERU: SECOND RURAL ROADS PROJECT

Introduction

The implementation of the first phase of the project showed the multidimensional nature of poverty and the multiple interactions that take place in the local socio-economic environment with improved rural roads. As reported in other sections of the PAD, improvements in rural roads bring about changes in the multiple variables that affect poverty by enhancing the accessibility to a variety of services and facilitating social interactions, in addition to reducing the transaction costs of rural products and stimulating the possibilities of local people in developing productive activities. More crucially improvements in rural roads bring about increases in the opportunities of rural populations, spurring their ability to increase their incomes.

As expressed in the World Development Report 2000, the impacts from investments in public goods, such as rural roads, may take time before the effects on income distribution and human development are felt. It appears that the rural economies take time to readjust to improved access to social services and to economic opportunities. (In the second phase of the RRP, the effects are expected to be accelerated with the establishment of the "local development window" to spur the initiation of local productive projects and coordinate the potential efforts of various government agencies and non-governmental organizations.) In order to assess the ultimate impact of the rural roads rehabilitation sub-projects the current project will continue to monitor the impacts of the first phase and strengthen the monitoring function with the PCR.

The experience of the first phase of the program illustrates the analytical tradeoffs implied in the design of adequate eligibility criteria and the related cost/benefit methodology when there is not an efficient method for measuring the multidimensional impacts of investments in rural road infrastructure. A balance must then be struck between the need to achieve comprehensiveness and the need to have a methodology that can be applied in the field. In this respect, the proposed eligibility methodology attempts to capture those various dimensions in a stepwise fashion, with an emphasis on institutional (grassroots-oriented) actions first, the consideration of poverty indicators second, and on the evaluation of economic worthiness third. In this last step, the impossibility of capturing all the benefits generated by the rehabilitation of a rural road (as expressed in the impact survey) and the need to establish a sufficiently reliable but applicable approach, required to limit the quantification of benefits to those that provide a good proxy of the adequacy of the investments to advance the ultimate economic wellbeing of poor rural areas (namely, the growth in agricultural and livestock production). In the course of the implementation of the second phase of the RRP, several studies will be undertaken to continue monitoring the impacts of rural roads in advancing the livelihood of rural communities towards incorporating further adjustments to the proposed methodology.

The eligibility criteria consists of a process of steps that will ensure that the projects selected enjoy the agreement and ownership of the affected communities, are technically sound, and respond to certain levels of attention of poor areas and/or to reasonable expected economic benefits. In all, this process responds to a bottom-up approach in its identification and a top-down approach in checking its compliance with selected criteria. As is stated in the World Development Report 2000, for local infrastructure investments to be effective and sustainable, the demand-based (bottom-up) approach generally has to be complemented by supply-side inputs (capacity building, information, outreach). Balancing a bottom-up identification of investments with carefully selected supply-side inputs should enhance the prospects for equitable and sustainable infrastructures for poor people.^v

The impact survey showed a noticeable increase in the benefits derived from better access to social services

(particularly, health) and the better opportunities for social interrelations. These benefits will ultimately generate additional income from the enhanced social contacts, health and education characteristics of the population, which coupled with lower transaction costs should help communities to improve their economic output. In all, the ultimate impact should lead to positive changes in the value of the net capital assets of the poor, as can be reflected by the expansion of their income earning activities (being them agricultural, livestock raising, craft production, tourism, etc.). The project includes studies to further the knowledge created during the first phase (as epitomized by the impact survey) and to confront the challenge of developing better tools to capture through quantitative analyses the estimation of the benefits improved accessibility can create to the local economies in a broader sense. Further research on the short and long term impacts of this type of projects should help elucidate the effect that better accessibility may have in improving the livelihood of the rural poor.

In the context of the project's participatory framework, the economic evaluation represents a step within the eligibility criteria that are applied to corroborate the feasibility of the sub-projects in achieving the objectives of the RRP. The selection of sub-projects consists of a process of steps that will ensure that the selected sub-projects enjoy the acceptance and ownership of the affected communities, are technically sound, and respond to the needs of poor areas and/or to the expected economic benefits.

Priority areas of intervention and pre-conditions for the application of the eligibility criteria

The second phase of the rural roads rehabilitation program will continue to be implemented within the same 12 departments where the first phase of the program was executed (plus a handful of contiguous provinces for which the Government will present a justification to be agreed upon at negotiations). This will ensure that the social and economic benefits are further maximized in the 12 poorest departments of Peru. The distribution of resources (in terms of kilometers to be rehabilitated) among departments and, within each department, among its provinces attempts to achieve that maximization of benefits while redistributing resources on a manner that reflects poverty conditions, the still untapped potential of those communities, and their commitment to the project. The indicative distribution of resources among departments and provinces was established in discussions with key stakeholders considering poverty levels and compensating for the amount of kilometers already rehabilitated.

The allocation of the total number of kilometers to be rehabilitated under the project among the 12 departments was undertaken on the basis of the following factors: (a) the percentage of kilometers of the rural road network not yet rehabilitated; (b) the population of each department; (c) the percentage of population in extreme poverty (as estimated by the latest publication of the Minister of Finance of Peru); and (d) the percentage of poor in the non-extreme bracket. These indicators are normalized for the ensemble of the 12 departments (in such a manner that the sum of the normalized indicators equals 1) and added on the basis of the following formula:

$$\text{Allocation factor} = (1/3) * \text{Normalized indicator for the percentage of rural roads not yet rehabilitated} \\ + (1/3) \text{ Normalized indicator for population} + (1/3) * [(2/3) * \text{Normalized indicator for the number} \\ \text{of extreme poor} + (1/3) * \text{Normalized indicator for the number of poor in non-extreme conditions}]$$

The weights given to each indicator reflect a large emphasis on poverty conditions for each department complemented with the first factor that attempts to compensate those departments among the twelve on which the number of rehabilitated kilometers has been low. The formula attempts to capture the needs of each department while considering the poverty level in each department in a manner that is clear and coherent. The formula was discussed with the key stakeholders and agreed upon with them. The application of this allocation yields the results shown in Table 1.

Table 1. Departamental Allocation of the Number of Kilometers to be Rehabilitated

Departamento	Carinos										FA	Red		Cobertura al final PCR2		
	Red Vecinal no asfaltada kms	Rehab. PCR1 kms	Cobertura por Dpto %	Falta por cubrir 1-cobert.	0.333 Factor	Poblacion Rural 2000	0.333 Factor	No. pobres	% pobres extremos	0.222 Factor		% pobres no extremos	0.111 Factor		Factor de asignacion	Red Asignada 3,300 \$	Monto US$ asignado 15,500 por km
Ancash	2,470	1,092	44%	56%	0.069	602,077	0.084	576,790	51%	0.087	45%	0.087	0.080	263	4,079,644	55%
Apurimac	2,288	899	39%	61%	0.075	426,904	0.059	423,062	79%	0.135	21%	0.040	0.079	261	4,041,388	51%
Ayacucho	2,349	867	37%	63%	0.078	423,202	0.059	412,622	65%	0.111	33%	0.063	0.077	255	3,949,800	48%
Cajamarca	3,328	1,324	40%	60%	0.074	1,351,942	0.188	1,280,289	42%	0.072	52%	0.101	0.115	378	5,862,640	51%
Cusco	3,048	568	19%	81%	0.100	946,769	0.131	853,039	25%	0.043	65%	0.125	0.101	332	5,152,016	30%
Huainuco	1,439	678	47%	53%	0.065	697,765	0.097	682,414	70%	0.120	28%	0.053	0.087	286	4,430,908	67%
Huancavelica	2,984	804	27%	73%	0.090	431,088	0.060	427,208	85%	0.145	14%	0.027	0.085	282	4,365,340	36%
Junin	4,035	583	14%	86%	0.106	1,074,947	0.149	949,178	33%	0.056	56%	0.107	0.109	361	5,587,884	23%
Madre de Dios	334	182	54%	46%	0.056	84,383	0.012	80,081	8%	0.014	63%	0.121	0.039	130	2,010,231	93%
Pasco	1,229	270	22%	78%	0.096	247,872	0.034	216,640	30%	0.051	58%	0.111	0.067	222	3,439,311	40%
Puno	1,717	520	30%	70%	0.088	582,331	0.081	573,596	77%	0.131	22%	0.042	0.089	295	4,576,755	47%
San Martin	1,575	253	16%	84%	0.104	340,141	0.047	282,997	20%	0.034	63%	0.122	0.071	236	3,654,084	31%
Total	26,797	8,040	30%		1.000	7,209,421	1.000	6,737,916	49%	1.000	45%	1.000	1.000	3,300	51,150,000	42%

The distribution among the provinces of each department has been established along criteria similar to the one applied to the departments (though with some changes to take into account the availability of reliable information at the provincial level) and complementing them with institutional factors that measure the capacity of each province to carry out the management and maintenance of the network within their jurisdiction. Once again the methodology attempts to maximize the benefits of the investments (by somewhat concentrating the investments on areas where the PCR is already allocating resources) while distributing them to other provinces on the basis of poverty indicators. The allocation among provinces of one department takes into consideration the following factors: (a) the percentage of kilometers of the rural road network not yet rehabilitated within the province; (b) the population of the province; (c) the percentage of population in extreme poverty (as estimated by the latest publication of the Minister of Finance of Peru); (d) the financial capacity of the province to sustain the future maintenance of the rehabilitated road network, as measure by the amount of co-participation resources (FONCOMUN) currently assigned to the provincial and district municipalities within that province; (e) the quality of the relationship of the provincial government with the PCR, as a measure of the level of ownership and commitment of the province with the objectives and components of the project, and as expressed through interviews with the staff of the corresponding UED; and (f) the management capacity of that provincial government also as expressed with interviews with the staff of the corresponding UED and based on past experience during the implementation of the first phase of the RRP. The values for these factors are normalized for the ensemble of the provinces within each department, in such a manner that the sum of the normalized indicators equals 1, and added up on the basis of the following formula, that provides 80% weight to (a), (b), and (c) and 20% to the institutional factors:

$$\text{Allocation factor} = 0.8 * [(1/3) * \text{Normalized indicator for the percentage of rural roads within a province not yet rehabilitated} + (1/3) \text{Normalized indicator for the population of the province} + (1/3) * \text{Normalized indicator for the number of extreme poor in the province}] + 0.2 * [(1/3) * \text{Normalized indicator for the FONCOMUN resources of the province} + (1/3) * \text{Normalized indicator for the relationship with PCR} + (1/3) * \text{Normalized indicator for the management capacity}]$$

The allocated resources would be presented by the UEDs to each provincial council, with an explanation of the eligibility criteria (as explained below) for these provinces to present their priorities of roads to be rehabilitated under the project within the amount of resources allocated to them.

Process of the application of eligibility criteria

Projects will continue to be identified and generated by the communities. As it was successfully implemented during the first phase, the communities will hire promoters to identify and prepare draft sub-projects that will be submitted to the de-concentrated executing units of the PCR. The PCR will evaluate the sub-projects and bring them into the context of other sub-projects in the same geographical area in order to try to maximize the ultimate impacts of several sub-projects which are located next to each other and with possibilities of being interconnected. If the functional characteristics of a project are not deemed appropriate (as stated below), the PCR can attempt to identify complementary sub-projects to make adequate from a technical standpoint the community's proposal. If new complementary sub-projects are identified, they should be presented to the communities for them to agree on their suitability and to ensure the communities' ownership to the complete sub-project.

Previous experience with the implementation of the first phase of the program will be assessed to ascertain that local commitment (now also in terms of contributions to the maintenance of the roads rehabilitated under the first phase) has been and is present. In this respect, the condition for the second phase of the program to continue further interventions in a province is that the provincial government and the district municipalities had signed the co-financing agreements and are contributing to the maintenance costs of the road already rehabilitated under the first phase. It would also be necessary the elaboration of a strategic transport plan that delineates the priorities of the communities in the area regarding transport investments. The presented sub-projects should have been identified through the definition of a strategic transport plan for the region by the municipalities along the area of influence of the road and with participation from the communities at large.

The geographic distribution among provinces represents an indicative allocation of resources. On the basis of this allocation of resources and the eligibility criteria (as would be detailed in the Project Operational Manual), the communities at the provincial level would gather together and each Provincial Council will present proposals to the UEDs in the context of the definition of a strategic transport plan for the region with the participation of the communities at large. The UEDs will contract the necessary studies to analyze those proposals and forward the results to the PCR for final approval and the initiation of the tendering process for the contracting of the related works. The final approval by the PCR will allow to take into account possible network effects, such as the identification of road segments that may be in one province but may benefit another or that an isolated link in one province may only achieve its benefits if connected to other links in another province.

The PCR will evaluate the sub-projects and bring them into the context of other sub-projects in the same geographical area in order to try to maximize the ultimate impacts of several sub-projects which are located next to each other and with possibilities of being interconnected. If the functional characteristics of a project are not deemed appropriate, the PCR can attempt to identify complementary sub-projects to make community's proposal adequate from the geographical standpoint. The UED will confirm with the Provincial Council this adjustment. The signature of a co-financing agreement by which these municipalities will contribute to the maintenance costs of the rehabilitated roads (under the first or second phases of the program) would be a further condition for going ahead with the analysis of the proposed sub-project.

The sub-projects must have the technical and environmental qualifications specified in the MOP. The former refer to the construction characteristics of the proposed sub-projects and their functionality within the road network in the pertinent province or department. The technological characteristics require that the proposed works allow for adequate future maintenance with micro-enterprises and the use of local labor.

Furthermore, the construction and maintenance costs of the proposed sub-projects would have to keep relation with the expected benefits of the road. As to the functionality, the proposed sub-projects would be analyzed within the context of the broader transport network and, in particular, of the connection of the road to market and/or social services centers of the province or department, with the objective of implementing interconnected “trees” or rural roads and, when necessary, or departmental roads to maximize the economic, transport and social benefits of the investments. The Project Operational Manual includes a section on the environmental regulations that must be complied with—as specified in the pertinent contracts—by the rehabilitation contractors and the maintenance micro-enterprises. All rehabilitation works will take place within existing rights-of-way and will not entail any displacement of population or noticeable impact to the natural habitat.

When these technical and environmental conditions are assessed, the PCR proceeds with the analysis of the data related to the poverty, social and economic conditions of the direct area of influence of the road sub-projects. The analysis of these data will cover a spectrum of development stages and functional characteristics of the rural roads, namely: (a) those roads that provide access to rural communities with prevalence of poverty; (b) those—mostly on the secondary network—that enjoy a certain level of traffic as they connect areas with recognized economic benefits; and (c) those in between, that connect rural towns and villages with poverty conditions less stringent than those under the first stage but with limited use by motorized vehicles (as measured by the number of vehicles per day). These three stages are described below.

Direct area of influence would include 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. This consideration attempts to eliminate the impact that the most populous city, with linkages beyond the proposed road sub-project, would have in the accounting in benefits without the actual realization of them. In the description of this Direct Area of Influence a listing of those communities should be provided along with the social and economic indicators described later to apply the corresponding methodologies. (Indirect Area of influence would include communities around a 10 km band along the road—5 km to each side—taking information at the district level prorated by the geographic square kilometers delimited by that band. This information would be collected in order to ascertain the broader number of people that would be affected by the investments.)

Sub-projects in a first stage of development: the poverty threshold. In areas with a high prevalence of poverty, the proposed sub-projects would be analyzed on the basis of poverty (social) considerations. When a sub-project entails a total cost and a cost per beneficiary below certain thresholds (US\$250,000 per project and US\$100 per beneficiary), these sub-projects will be evaluated under a social criteria related to infant mortality rates (with the threshold set at 80) and unsatisfied basic needs of the area of influence (with the threshold set at 70%), prorated on the basis of population. These thresholds were set on the basis of the experience of the sub-projects undertaken in the successful first phase of the program. They ensure that sub-projects in poor communities that attempt to enhance at low cost their accessibility to social services are approved on the basis of access improvement regardless of the ultimate impact on the potential increase in agricultural, pecuniary or other economic production. When the minimum thresholds are not met, the sub-project had then to be analyzed following any of the other approaches, as listed below.

More advanced stage of development: the economic threshold based on benefits to vehicle operating costs. In those proposed roads where motorized traffic volumes are higher than 30 vehicles per day, an economic analysis would be undertaken on the basis of comparison of the rehabilitation and maintenance costs with the benefits derived from savings in vehicle operating costs, following the application of the Road Economic Development (RED) model developed by the World Bank (on the basis of the HDM program). This methodology is expected to be largely applied to segments of the primary and secondary network that may be identified as critical to allow the connection with or among networks of rural roads.

The RED Model has been developed to improve the decision-making process for the development and maintenance of low-volume rural roads. The model performs an economic evaluation of road investments options using the consumer surplus approach and is customized to the characteristics and needs of low-volume roads such as the high uncertainty of the assessment of the model inputs, particularly the traffic and condition of unpaved roads, the importance of vehicle speeds for model validation, and the need to clearly define all accrued benefits. RED computes benefits for motorized traffic, and takes into account changes in road length, condition, geometry, type, accidents, and days per year when the passage of vehicles is further disrupted by a highly deteriorated road condition (wet season). The model also allows users to add other benefits, such as those that may accrue to non-motorized traffic, if computed separately. Further details on the measurement of the variables required for the application of the RED model are included in the Project Operational Manual.

Intermediate stage of development: accounting for benefits in agricultural and livestock production (producers' surplus approach). For the rest of the cases, the producers' surplus approach would be applied. This approach relates the rehabilitation and maintenance costs of a sub-project with the benefits that the sub-project would bring in terms of increases in net agricultural and livestock production (net of local consumption and production costs). 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 rural roads. These assumptions built on the experience of the first phase and the results of the impact survey. A benchmark of 10% was established as the minimum economic rate of return for a project to be eligible. When a sub-project does not meet these criteria, it should be either discarded or reformulated.²

The impact survey showed a noticeable increase in the benefits derived from better access to social services (particularly, health) and the better opportunities for social interrelations, through the percentage of trips related to these benefits in the impact survey amounts to about 40 percent (while those for labor and economic activities amount to 54%). These benefits originate from the reduction in travel times, as access to health and education facilities or to other friends and families is facilitated.

The economic analysis methodology will incorporate specific assumptions in relation to future increases in agricultural and livestock production as a consequence of the rehabilitation of rural roads. These assumptions are in line with the results of the impact survey, though they reflect the hypothesis (still to be proved) that net production benefits as a consequence of improvements in accessibility require a reasonable time frame to be realized. The following conservative assumptions have been adopted for the analysis of sub-projects in the second phase of the RRP: (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% (to take place in year 3) in the overall agricultural area for the key agricultural products in the area of influence of the subproject; and (c) a decrease of 5% in the costs of production for either agricultural or livestock-related products (to take place in year 3). No adjustments would be made to the agricultural yields or to farm gate prices.

On the basis of these assumptions, the producers' surplus approach was applied to a representative sample of 36 sub-projects completed under the first phase (representing about 20% of the investments in the rehabilitation of rural roads and in the number of kilometers rehabilitated). In the application of this approach, adjustments were made to better reflect the prevailing values for production in the rural areas of the Peruvian Sierra as reported by the Agricultural and Livestock Census of 1994. (This Census provides information on the number of rural inhabitants of the provinces in the Peruvian Sierra and the production of agricultural products and the raising of livestock.) On the basis of this information, production and productivity ratios were obtained and applied to adjust the values reported in the relevant studies. The results of the analysis yield a prorated (by the cost of the investments) economic rate of return (ERR) of 25% and a net present value (NPV) of US\$20 million, or about US\$1 per US\$ invested in the rehabilitation of those roads. Two of the 36 sub-projects complied with the poverty thresholds and 30 percent presented ERR less than the required minimum of 10%. (These sub-projects however did show positive NPVs at the 10% discount rate when the assumptions established at the beginning of the first phase are held.) The application of the average NPV per US\$ invested to the expected targets of the second phase yields an NPV of almost US\$50 million for the project's rehabilitation component. Table 2 shows the results of the analysis.

The combined NPV of the representative sample of sub-projects would remain positive even if, independently, the area of production does not increase (though the number of sub-projects with positive NPVs would be reduced to only 12%) or if livestock production does not increase or if no reductions take place in production costs (with an increase to 44% in the number of cases with negative NPV at a 10% discount rate). On the contrary, if productivity (yields) were to increase by 10% (in year 3) all the sub-projects except one would present ERRs greater than 10% and the overall combined ERR would increase to 48%. With the initial assumptions, in the event that the costs of road rehabilitation and maintenance had increased by 20%, the NPV and the ERR for that representative sample of sub-projects would have been reduced to US\$16 million and 20%, respectively.

The results of the analysis were obtained after taking into consideration to the extent possible the results of the impact survey. They must be seen with some caution as the reliability of the information regarding the values for the variables related to production and productivity in rural areas from the initial socio-economic studies was low (though they were adjusted through their comparison with the latest agricultural and livestock census of 1994) and the results of the impact survey appears not to have captured the possible longer-term changes in agricultural production. The results of the impact survey for the first phase of the program has shown the apparent paradox that significant improvements in the conditions of travel, from reductions in travel times and distances to enhancements in the provision of transport services have accompanied improvements in access to certain social services but have not yet translated into more specific economic benefits (such as noticeable improvements in agricultural productivity or in general agricultural production). The hypothetical explanation is that the impacts from investments in transport infrastructure, such as rural roads, may take time before they translate into noticeable effects on income growth and human development. The second phase of the program will attempt to gain more definite answers in this respect. The enhancement of the project monitoring system and the systematic application of impact surveys shall allow the methodical measurement of the benefits of sub-projects before and after their implementation and the comparison of those benefits to control areas of similar socio-economic characteristics.

Table 2. Key Economic and Cost Variables for Representative Sample of First Phase Sub-Projects

Nombre proyecto	Departamento	No. kms	No.		Costo rehab. US\$	Costo rehab. US\$/km	Costo Inversion por benef.	Costo mant. US\$/km	ERR	NPV (US\$'000) @10%
			benef.	per km						
Puente Parco-Colaparraco-Allpacocha	Ancash	62.5	3,463	55	\$1,010,404	\$16,156	\$304	\$1,566	<10%	(\$346)
Punta Caitan-Coris-Huallan / Succcha-Huay	Ancash	93.3	4,248	48	\$1,031,948	\$11,085	\$298	\$1,200	<10%	(\$554)
Haqira y Mara	Apurimac	31.3	11,999	383	\$427,445	\$13,656	\$36	\$1,200	23%	\$236
Casinchihua-Chaihuani/Casinchihua-Chac	Apurimac	74.8	8,499	114	\$980,185	\$13,097	\$133	\$1,200	<10%	(\$218)
Ocobamba, Ongot, Huaccana	Apurimac	44.8	29,322	654	\$619,942	\$13,819	\$26	\$1,200	>50%	\$1,542
Camino Vecinal Tintay-Lucre	Apurimac	6.8	662	97	\$100,501	\$14,758	\$152	\$1,200	21%	\$42
Camino Vecinal Chacapanle-Soraya	Apurimac	5.7	395	69	\$60,860	\$10,659	\$154	\$1,200	19%	\$22
Camino Vecinal Chaya-Sañayca	Apurimac	10.7	409	38	\$120,166	\$11,273	\$294	\$1,200	11%	\$4
Pucara-Laramate	Ayacucho	20.5	2,540	124	\$308,055	\$15,000	\$121	\$1,200	13%	\$31
Camala - Huac-huas	Ayacucho	54.2	2,800	52	\$468,052	\$8,631	\$289	\$1,000	<10%	(\$77)
Palpa-Saramate-Ocaña-Laramate	Ayacucho	74.6	3,367	45	\$618,382	\$8,280	\$289	\$1,200	<10%	(\$144)
Carretera (Chota-La Palma-Chadin) Quero	Cajamarca	23.9	9,988	418	\$275,683	\$11,559	\$41	\$1,200	50%	\$580
Cajamarca - San Pablo	Cajamarca	120.7	17,702	147	\$1,741,149	\$14,424	\$116	\$1,200	22%	\$767
Culervo-Socola/Socola-San Luis de Lucm	Cajamarca	68.7	10,934	164	\$582,364	\$8,726	\$78	\$1,200	29%	\$462
Colquepata-Paurcarlambo	Cusco	25.6	400	18	\$297,189	\$11,808	\$743	\$710	<10%	(\$144)
Yaurisque - Huanquite	Cusco	30.9	8,996	292	\$422,502	\$13,695	\$60	\$1,200	27%	\$307
Carretera Izcuchaca - Cruzpata	Cusco	13.2	7,028	530	\$165,984	\$12,529	\$35	\$1,200	>50%	\$495
Chuquicahuana-Acomayo	Cusco	62.6	6,864	110	\$546,151	\$8,730	\$128	\$1,200	39%	\$779
Empalme Ruta 101-Hualihua-Huaribamba	Huancavelica	26.0	8,917	343	\$217,742	\$8,378	\$24	\$1,200	>50%	\$868
Palca-Tantara	Huancavelica	24.9	1,047	42	\$261,563	\$10,488	\$250	\$1,200	<10%	(\$51)
Palca-Arma-Arahua-Chupamarca	Huancavelica	57.9	1,944	34	\$681,807	\$11,436	\$340	\$1,000	<10%	(\$172)
Carretera Higueras - Yurumayo - Chaulan	Huanuco	33.9	1,567	46	\$476,297	\$14,082	\$304	\$1,200	<10%	(\$126)
Tomay Kichwa - Conchamarca	Huanuco	15.0	2,176	145	\$388,108	\$24,407	\$188	\$1,172	28%	\$277
Litcllambo-Pechas	Huanuco	24.0	7,292	304	\$518,616	\$21,511	\$71	\$1,200	17%	\$132
Sapallanga-Huayucachi-Viques-Chupuro-I	Junin	82.1	17,178	209	\$1,008,399	\$12,255	\$65	\$1,373	42%	\$1,577
Mazarmay-Liyilla	Junin	10.9	2,345	216	\$114,197	\$10,525	\$49	\$1,200	>50%	\$378
Sallpo-Coviriali-Liyilla-Capiro	Junin	27.8	12,817	455	\$504,472	\$18,179	\$40	\$1,200	>50%	\$2,654
Vitoc-Monobamba	Junin	26.2	2,913	111	\$332,209	\$12,704	\$114	\$1,200	19%	\$113
Pto.Maldonado-Infierno	Madre de Dios	24.0	876	37	\$482,660	\$20,111	\$551	\$1,200	<10%	(\$138)
LaJoya-Chonta	Madre de Dios	8.8	635	73	\$137,845	\$15,754	\$217	\$1,200	10%	\$2
Mazuco-Puerto Mazuco-Punquiri-Huapathi	Madre de Dios	25.9	5,944	230	\$634,532	\$24,537	\$107	\$1,200	10%	\$9
Pallanchaca-Sta. Ana de Tusi Goyllariqu	Pasco	117.4	5,965	51	\$1,798,737	\$15,318	\$302	\$1,200	<10%	(\$277)
Oxapampa-Chontabamba-Abra San Golan	Pasco	69.0	35,415	513	\$1,057,815	\$15,324	\$30	\$1,200	>50%	\$7,257
Calapuja-Nicasio-Laro-Jose D. Choquehu	Puno	52.9	16,392	310	\$623,866	\$11,800	\$38	\$1,200	27%	\$458
Yaurisque - Huanquite	Puno	30.0	8,898	300	\$398,559	\$13,285	\$80	\$1,200	>50%	\$1,629
Pomata-Crucero-Chutiami e Ilave-Pharata	Puno	83.3	19,584	235	\$973,576	\$11,685	\$50	\$1,200	46%	\$1,747
Total		1,562.7	261,377	180	\$20,341,942	\$13,017	\$82	\$42,821	25%	\$20,271

Summary of benefits and costs:

As explained above, benefits from rural roads are multidimensional and are reflected in the described methodology through a proposed series of steps that attempt to capture social, poverty-related and economic impacts. These steps include a participatory process, a methodology for the distribution of resources among the 12 departments and their provinces largely on the basis of poverty indicators, and, for those sub-projects in areas of more advanced stages of development, the application of producers' or consumers' surplus approaches. The latter include the benefits derive, in one case, from net increases in agricultural and livestock production, and in another case, from net savings in the operating costs of motorized traffic. In these cases, the costs include those related to the rehabilitation of the rural roads and to their maintenance through micro-enterprises.

Main Assumptions:

For the application of the producers' surplus approach, the economic analysis methodology incorporates specific assumptions in relation to future increases in agricultural and livestock production as a

consequence of the rehabilitation of rural roads. In line with the results of the impact survey, the following assumptions would be taken into account: (a) an increase of 7.5% in the number of livestock (to take place in year 3), maintaining the same level of net benefits per unit of livestock; (b) an increase of 5% (to take place in year 3) in the overall agricultural area for the key agricultural products in the area of influence of the subproject; and (c) a decrease of 5% in the costs of production for either agricultural or livestock-related products (to take place in year 3). No adjustments would be made to the agricultural yields or to farm gate prices. In the case of the application of the consumers' surplus approach to those cases where motorized traffic is expected to be higher than 30 vehicles per day, the main assumption is an average annual increase in traffic of 3%. Taxes (IGV) are subtracted from the values of benefits and costs to generate their economic values.

Cost-effectiveness indicators:²

Not applicable

^{1/} World Development Report 2000, page 91.

^{2/} The application of the methodology follows the same steps as the one used during the first phase: (a) calculation of the number of hectares cultivated in the direct area of influence of the road for the five major agricultural products as well as the production of livestock and milk if this production is of significance in that area; (b) definition of the percentage of the production that stays in the area for local consumption; (c) quantification of the production of agricultural and livestock-related products; (d) definition of the sales prices for those products; (e) estimation of the rehabilitation costs of the road and of the future routine maintenance costs, including any possible environmental-mitigation costs; and (f) application of the corresponding conversion factors (to account for taxes—IGV—and the abundance of unskilled labor). The values would be inputted into a spreadsheet model within which the specific assumptions related changes in production would be pre-defined and the various net flows and calculations for the ERR and NPV would be modelled.

Annex 5: Financial Summary
PERU: SECOND RURAL ROADS PROJECT

Years Ending
December 31

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Total Financing Required							
Project Costs							
Investment Costs	4.7	29.0	33.0	31.4	0.0	0.0	0.0
Recurrent Costs	10.6	12.8	13.8	14.7	0.0	0.0	0.0
Total Project Costs	15.3	41.8	46.8	46.1	0.0	0.0	0.0
Front-end fee	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Financing	16.3	41.8	46.8	46.1	0.0	0.0	0.0
Financing							
IBRD/IDA	3.9	14.5	16.1	15.5	0.0	0.0	0.0
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Central	8.5	9.9	10.3	10.8	0.0	0.0	0.0
Provincial	0.0	2.9	4.3	4.3	0.0	0.0	
Co-financiers/IDB	3.9	14.5	16.1	15.5	0.0	0.0	0.0
Beneficiaries fees (*)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Project Financing	7.8	29.0	32.2	31.0	0.0	0.0	0.0

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Total Financing Required							
Project Costs							
Investment Costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recurrent Costs	0.0	0.0	0.0	0.0	13.8	13.8	13.8
Total Project Costs	0.0	0.0	0.0	0.0	13.8	13.8	13.8
Front-end fee	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Financing	0.0	0.0	0.0	0.0	13.8	13.8	13.8
Financing							
IBRD/IDA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Government	0.0	0.0	0.0	0.0	13.8	13.8	13.8
Central	0.0	0.0	0.0	0.0	9.5	9.5	9.5
Provincial	0.0	0.0	0.0	0.0	4.3	4.3	4.3
Co-financiers/IDB	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beneficiaries fees (*)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Project Financing	0.0	0.0	0.0	0.0	13.8	13.8	13.8

(*) In-kind (labor) contributions by beneficiaries for rehabilitation and maintenance of NMT tracks.

Main assumptions:

Municipalities' contribution to routine maintenance range from 50.0% in 2001 to 66.7% in 2004.

Annex 6: Procurement and Disbursement Arrangements

PERU: SECOND RURAL ROADS PROJECT

Procurement

Procurement Methods (Table A). Works will be procured in accordance with the provisions of the "Guidelines for Procurement under IBRD Loans and IDA Credits" published by the Bank in January 1995 and revised in January and August 1996, September 1997 and January 1999. Although not expected because of the rather small size of the works financed under the project, works estimated to cost more than US\$3,000,000 or more will be procured under contracts awarded in accordance with International Competitive Bidding (ICB) procedures. Participation of contractors from countries outside the region in NCB and ICB is very unlikely. However, the procurement advertisements and the bidding documents, will clearly state that participation of foreign firms from any country eligible under the Bank guidelines is not precluded, and that the financing will be secured by the Bank loan. In the event that the bidder who has submitted the lowest evaluated bid is from a country not eligible under IDB, the Bank will authorize an increase in the *pari-passu* established under the respective loan category in order to cover IDB's portion and meet the expenditures incurred in respect of that contract. IDB will authorize a similar increase in respect of other contracts eligible under IDB guidelines until the balance is reestablished. Works estimated to cost less than US\$3,000,000 equivalent per contract may be procured following National Competitive Bidding (NCB) procedures acceptable to the Bank. It is anticipated that about US\$60 million will be procured under NCB procedures, with contracts ranging from US\$200,000 to US\$1.5 million. The use of standard bidding documents and standard contract forms satisfactory to the Bank will be agreed upon during negotiations.

Procurement of small works estimated to cost less than US\$50,000 up to an aggregate of US\$57.7 million may be done through direct contracting with Road Committees, which are a recognized entity formed by members of a community to support implementation of a specific investment in their area, and micro-enterprises for road maintenance developed under the project. This procurement modality would allow poor rural communities to directly manage small investments (and make the required 20 percent contribution to the work under the non-motorized rural transport component work through partial donation of unskilled labor) and take an active role in maintaining their road infrastructure. The contracting of each work would be supported by a technical proposal with its budget (*expediente técnico*). PCR will establish a system of standard regional unit prices to guide both the budgeting of the works and review of contracts under direct contracting. PCR inspectors or the consultants engaged to supervise the work programs in a project area will provide monthly certificates and a final certificate at completion of the works (*actas mensuales-acta de recepción*), which will specify the works completed and expenditure incurred, as a proof of successful execution of the work and justification for reimbursement by the Special Account. Model agreements have been incorporated into the Project Operational Manual.

Subject to approval by IDB and the Bank, periodic maintenance works: (i) estimated to cost less than US\$50,000 equivalent and US\$3,000,000 equivalent or less in the aggregate, (ii) of an equipment-intensive nature; and (iii) to be performed in accordance with the technical standards set up in the Project Operational Manual, may be carried out through direct contracting with Provincial Municipalities or associations of municipalities, procured through force account procedures satisfactory to the banks. The total cost of these force account packages will be determined on the basis of pre-agreed schedules of costs per activity.

Consultants will be procured under contracts awarded in accordance with the provisions of the "Guidelines:

Selection and Employment of Consultants by World Bank Borrowers, published by the Bank in January 1997 and revised in September 1997 and January 1999". Table A1 shows the selection arrangements. The services include studies, engineering designs, construction supervision, technical assistance, training courses and auditing services. By and large, they will be provided by local firms and individuals.

For the kind of skills and field presence needed, and to reach scale while maintaining a strong poverty focus, the coordination of the Local Development Window will be entrusted to 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 the whole project area. Single source selection will be applied for these services under contracts estimated to cost less than \$100,000.

Procurement Capacity Assessment. A recent capacity assessment, approved by the RPA, has demonstrated that PCR's procurement system is comprehensive and covers all aspects related to procurement of works and selection of consultants. Procurement procedures and guidelines are established in the Project Operational Manual agreed with IDB and the Bank. Given the small scale of the project works and the project's support to strengthening small local contractors, the preferred method of procurement during the first phase was Limited Local Competitive Bidding (where works estimated to cost US\$250,000 equivalent or less were procured under fixed-price contracts awarded publicly on the basis of quotations obtained from five local contractors registered with PCR). Nevertheless, PCR also demonstrated capacity to procure civil works contracts through International Competitive Bidding procedures (about 500 km of departmental roads were awarded through ICB procedures). The proposed follow-on project would mostly rely on National Competitive Bidding, as the number of local contractors has grown substantially and NCB is more suitable for the municipal environment PCR's central unit is adequately staffed with trained procurement, planning, scheduling and cost estimating personnel. The procurement system is computerized and consolidates information sent by regional offices and field supervisors. Every six months, independent auditors acceptable to IDB and the Bank conduct a performance audit of the project, examining a sample of sub-projects under execution, procurement procedures and contract administration practices applied by PCR. There is also an internal control unit within MTC that performs procurement reviews on a regular basis. The general quality of procurement documentation produced by PCR is satisfactory. However, there is scope for improvement in some areas, namely: i) reducing the level of discretion exercised by PCR headquarters in nominating contractors and consultants invited to submit bids or proposals. The use of NCB would avoid this problem; ii) decentralizing to field units the procurement of small works and services, which entails strengthening field units staff; iii) restoring the 20-day standard for payment of services and works which PCR applied until September 1999. At present, work certificates are generally paid within 40 days of their submission to PCR (and even later) to accommodate MEF's monthly expenditure authorizations. PCR expects to restore the 20 day-standard during the second phase; and iv) improving procurement scheduling and packaging. Greater effort would be placed in aligning project activities with the most appropriate season so as to increase the productivity of consultant services and construction works, and enhance the social impact of those activities.

Prior Review Thresholds (Table B). For civil works, all bidding packages of US\$1.0 million or higher will be subject to prior review of advertising, bidding documents, bid evaluation and contract award; they will be handled directly by PCR's central office. The first two NCB bidding packages and all direct contracts with municipalities, irrespective of the amount, will also be subject to prior review. For consulting firms, services estimated to cost US\$100,000 or higher, as well as all single-source assignments, will be subject to prior review of contracts, terms of reference, and selection procedures; for individual consultants, services of US\$50,000 or higher will be subject to prior review. For consultant services under the above limits only the terms of reference will be subject to prior review. The Project Operational Manual includes terms of

reference for pre-investment studies (socio-economic analysis and engineering) and work supervision.

Although the level of prior review would be low (about 13 percent for civil works and about 25 percent for consultant services), it would be compensated for in several ways: (i) external auditors will conduct performance audits every six months on a sample of sub-projects satisfactory to the Bank and IDB. These performance audits will cover technical, environmental, procurement and management aspects; (ii) the project information and monitoring system, would be used to compare costs of similar sub-projects within an executing unit and among units in order to detect possible discrepancies which might indicate procurement problems and the need for further analysis. Accuracy of the data in the project information system will be checked through the audits; and (iii) Bank and IDB supervision missions will conduct random reviews, including frequent field visits and reviews of procurement documentation. It is anticipated that the IDB local office will play a key role in this regard.

Procurement methods (Table A)

Table A: Project Costs by Procurement Arrangements
(US\$ million equivalent)

Expenditure Category	Procurement Method ¹			N.B.F.	Total Cost
	ICB	NCB	Other ²		
1. Works	0.00 (0.00)	60.65 (25.65)	57.50 (16.30)	0.00 (0.00)	118.15 (41.95)
2. Goods	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
3. Services	0.00 (0.00)	0.00 (0.00)	17.85 (7.55)	0.00 (0.00)	17.85 (7.55)
4. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	14.00 (0.00)	14.00 (0.00)
5. Front-end fee	0.00 (0.00)	0.00 (0.00)	1.00 (0.50)	0.00 (0.00)	1.00 (0.50)
Total	0.00 (0.00)	60.65 (25.65)	76.35 (24.35)	14.00 (0.00)	151.00 (50.00)

^{1/} Figures in parenthesis are the amounts to be financed by the Bank Loan. All costs include contingencies.

^{2/} Includes civil works to be procured through direct contracting with community-based organizations and municipalities, consulting services, training and technical assistance services.

Table A1: Consultant Selection Arrangements (optional)
(US\$ million equivalent)

Consultant Services Expenditure Category	Selection Method							Total Cost ¹
	QCBS	QBS	SFB	LCS	CQ	Other	N.B.F.	
A. Firms	8.51 (3.60)	3.71 (1.57)	0.00 (0.00)	0.00 (0.00)	1.29 (0.55)	0.72 (0.30)	0.00 (0.00)	14.23 (6.02)
B. Individuals	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	3.62 (1.53)	0.00 (0.00)	3.62 (1.53)
Total	8.51 (3.60)	3.71 (1.57)	0.00 (0.00)	0.00 (0.00)	1.29 (0.55)	4.34 (1.83)	0.00 (0.00)	17.85 (7.55)

1\ Including contingencies

Note: QCBS = Quality- and Cost-Based Selection

QBS = Quality-based Selection

SFB = Selection under a Fixed Budget

LCS = Least-Cost Selection

CQ = Selection Based on Consultants' Qualifications

Other = Selection of Firms under Single Source and Selection of individual consultants (per Section V of Consultants Guidelines), Commercial Practices, etc.

N.B.F. = Not Bank-financed

Figures in parenthesis are the amounts to be financed by the Bank Loan.

Prior review thresholds (Table B)

Table B: Thresholds for Procurement Methods and Prior Review ¹

Expenditure Category	Contract Value Threshold (US\$ thousands)	Procurement Method	Contracts Subject to Prior Review (US\$ millions)
1. Works	>3,000,000	ICB	All / 0
	>1,000	NCB	All / 12.0
	> 50	NCB	First 2 Contracts / 0.5
	<50	Other: Direct Contracting with community-based organizations	None / 0
	<50	Other: Direct Contracting with Municipalities	All / 3.0
2. Goods			
3. Services			
Firms and Individuals			
Firms	>100	QCBS, QBS, CQ	All / 3,73
	<100	Other-Single Source	All / 0.73
	<100	All	Terms of Reference
Individuals	>50	Other	All / 0
	<50	Other	Terms of Reference
4. Miscellaneous			
5. Miscellaneous			
6. Miscellaneous			

Total value of contracts subject to prior review: US\$20 million equivalent

Overall Procurement Risk Assessment

Low

Frequency of procurement supervision missions proposed: One every 6 months (includes special procurement supervision for post-review/audits)

¹ Thresholds generally differ by country and project. Consult OD 11.04 "Review of Procurement Documentation" and contact the Regional Procurement Adviser for guidance.

Disbursement

Allocation of loan proceeds (Table C)

Allocation of loan Proceeds (Table C). Table C sets forth the categories of items to be financed out of the proceeds of the Bank loan, the allocation of the amounts of the loan to each category and the percentage of financing in each category. Retroactive financing not exceeding US\$5 million would be provided for eligible expenditure incurred after January 1, 2001.

Table C: Allocation of Loan Proceeds

Expenditure Category	Amount in US\$million	Financing Percentage
CIVIL WORKS	32.17	50%
(1) Rehabilitation of Roads and NM Tracks and Periodic Maintenance of Roads		
(2) Maintenance Works Performed by Municipalities under Account Procedures	1.50	50%
(3) Routine Maintenance	5.22	20.0% of expenditures incurred prior to December 31, 2002, and 15% thereafter
CONSULTANT SERVICES	4.00	50%
(4) Pre-investment Studies, Supervision Performance Audits, Impact Studies		
(5) Institutional Strengthening and Training	3.32	50%
(6) Unallocated	3.29	
Total Project Costs	49.50	
Front-end fee	0.50	
Total	50.00	

Use of statements of expenditures (SOEs):

Disbursements will be based on full documentation for all eligible expenditures. The use of Statement of Expenditure (SOEs) will be permitted for withdrawal from the loan account in respect of expenditures for: (i) contracts for works estimated to cost less than US\$1,000,000; (ii) periodic maintenance works procured through force account procedures with Municipalities; (iii) contracts for the employment of consulting firms and individuals costing less than US\$100,000 and US\$50,000 equivalent, respectively; and (iv) training activities. It is anticipated that the project will develop its reporting system to move to PMR based disbursement within 6 months of effectiveness. Supporting documentation for all project expenditures, including those supporting disbursement application, would be retained by PCR for Bank and auditors review for at least one fiscal year after the year in which the last disbursement takes place.

Special account:

A special account of up to US\$4 million will be opened in a commercial bank under terms and conditions acceptable to the Bank. The Authorized Allocation will be limited to US\$1 million until the aggregate amount of withdrawals plus the total amount of all outstanding special commitments is equal to or exceed US\$5 million. PCR will control the use of the Special Account and be responsible for preparing the disbursement requests on behalf of the Borrower. When disbursements will be based on PMRs, the limit of

the authorized allocation will be US\$8.5 million. The PMR will be submitted quarterly and will include a cash forecast for a six-month period.

Local Currency Account. In addition to the Special Account in US Dollars, PCR will use a local currency account. Agreement was reached at project negotiations that the Government will deposit counterpart funds into PCR's local currency account at the beginning of each month to cover the counterpart funds needed for all payments anticipated for that month. All project accounts will be managed in accordance with generally accepted international accounting standards.

**Annex 7: Project Processing Schedule
PERU: SECOND RURAL ROADS PROJECT**

Project Schedule	Planned	Actual
Time taken to prepare the project (months)	16	20
First Bank mission (identification)	04/18/99	10/21/99
Appraisal mission departure	04/10/2000	10/23/2000
Negotiations	07/03/2000	05/23/2001
Planned Date of Effectiveness	09/19/2001	

Prepared by:

Ministry of Transport and Communications (Peru) in collaboration with IDB and the World Bank.

Preparation assistance:

MTC – Rural Roads Program Budget (2000-2001)
World Bank Loan 3962-PE and IBRD Loan 901/OC-PE

Bank staff who worked on the project included:

Name	Speciality
José Luis Irigoyen	Task Team Leader - World Bank
Rodolfo Huici	Task Team Leader – IDB
Aurelio Menendez	Transport Economist
Elizabeth Dasso	NGO Coordinator – Social Specialist
Francisco Wulff	Operations Specialist
David Varela	Legal Counsel
Paul Sisk	Financial Management Specialist
Colin Gannon	Transport Economist
Carlos Emanuel	Procurement Specialist
Gladys Sakata	Program Assistant
Vera Vicentini (IDB)	Environmental Specialist
Jacob Greenstein (IDB)	Highway Engineer
Alfonso Tique (IDB)	Highway Engineer

Annex 8: Documents in the Project File*
PERU: SECOND RURAL ROADS PROJECT

A. Project Implementation Plan

PCR. "*Manual de Operaciones del Proyecto*" (Electronic File). Revised. 2000.

PCR. "*Manual Técnico de Mantenimiento Rutinario de Caminos Rurales*".

PCR. "*Manual Técnico Mejoramiento de Caminos de Herradura*"

PCR. "*Manual Ambiental*".

PCR. "*Manual de Reforestación*".

IPES. "*Guías para la Capacitación en Gestión Vial Municipal: 1 - Criterios generales para la gestión vial municipal; 2 - Administración del Sistema de Gestión Vial Municipal; 3 - Elaboración de Inventarios Viales a nivel distrital; 4 - Formulación del Plan Vial Provincial; 5 - Análisis de la sostenibilidad de recursos financieros.*" 1999

CENCA - Tecnoconsult. "*Seis Herramientas de Capacitación para Microempresas: 1 - Manual básico de gestión empresarial; 2 - Guía para el fortalecimiento de la organización interna; 3 - Guía para el fortalecimiento institucional de las Micro-empresas; 4 - Guía para el autodiagnóstico de la gestión empresarial; 5 - Guía para la elaboración de Proyectos de Inversión Social; y 6 - Guía para el fortalecimiento de los proyectos de inversión en ejecución.*" August 1999.

MTC. "Reglamento de Jerarquización Vial". Draft. June 2001

República de Perú. "Ley 27181 – Ley General de Transporte y Tránsito Terrestre". 1999

República de Perú. "Ley 23853 – Ley Orgánica de Municipalidades" September 1984.

B. Bank Staff Assessments

Implementation Completion Report on a (First) Rural Roads Rehabilitation and Maintenance Project (Loan 3962-PE). Social Development BBL Series. February 2001.

Irigoyen, José L., Menendez, Aurelio. "Cost-Benefit Analysis of Rural Road Projects in Peru" 14th IRF Road World Congress. Paris, June 11-15, 2001

Irigoyen, José L. "Understanding Poverty Links in the Rural Highlands of Perú - Insights from the Rural Roads Project". BBL Social Series. February 2001

Procurement Capacity Assessment of the PCR. 2000

C. Other

IADB. PERU - *Programa Nacional de Infraestructura Rural de Transporte. Segunda Etapa. Informe de Proyecto.* February 2001

Cuanto. "Economic, Social, Environmental and Institutional Evaluation of the Rural Road Program" July 2000.

Cuanto. "*Evaluación de los Impactos Socio-Económicos generados durante la fase de rehabilitación de los caminos rurales - Estudio de Caso: Kiteni*". December 1999

Centro. "*Estudio de los Efectos de los Caminos Rurales en las Relaciones de Género*." Final Report. August 1999.

Escobar, Javier. "*Impacto del Proyecto de Caminos Rurales: un Análisis Complementario*". Mimemo, October 2000

Oré, Teresa. "*El Impacto Socio-Cultural del Programa Caminos de Herradura 1995-2000*". 1999

Manoukian, Violeta. "Social Assessment and Participatory Mechanisms: Review and Recommendations". February 2000

Maximize. "*Estudio sobre la capacidad institucional Financiera de los Municipios con el objetivo de establecer la sostenibilidad del sistema vial de caminos rurales*" March 1999

SASE. "*Estrategias para crear oportunidades de empleo: Documento Base -III Diálogo para el Desarrollo y Lucha contra la Pobreza*". October 2000

Ministerio de Economía y Finanzas. "*Un nuevo instrumento de focalización para la asignación de recursos destinados a la inversión social en el marco de lucha contra la pobreza - Mapa de Pobreza del Perú, 2000*". Diciembre 1999

Foncodes. "*Mapa de Pobreza 2000*". October 2000
*Including electronic files

Annex 9: Statement of Loans and Credits
PERU: SECOND RURAL ROADS PROJECT
 May-2001

Project ID	FY	Purpose	Original Amount in US\$ Millions		Cancel.	Undisb.	Difference between expected and actual disbursements*	
			IBRD	IDA			Orig	Frm Rev'd
P060499	2000	Indigenous Peoples Development	5.00	0.00	0.00	4.95	-0.05	0.00
P062932	2000	PE-HEALTH REFORM PROGRAM	80.00	0.00	0.00	27.00	0.00	0.00
P047690	2000	RES. & EXTENSION	9.60	0.00	0.00	9.10	-0.50	0.00
P039086	1999	PE URBAN PROPERTY RIGHT	38.00	0.00	0.00	21.36	8.63	0.00
P042442	1997	SIERRA NATURAL RES.	51.00	0.00	0.00	12.97	3.80	0.00
P008037	1997	IRRIG. REHAB	85.00	0.00	0.00	40.16	35.96	24.16
P008051	1995	LIMA WATER Rehabilitation & Mgt. Proj.	150.00	0.00	0.00	22.51	22.51	0.00
P008055	1995	PE-PRIM.EDUC	146.40	0.00	20.71	6.61	27.33	4.46
Total:			565.00	0.00	20.71	144.66	97.67	28.61

PERU
STATEMENT OF IFC's
Held and Disbursed Portfolio
May-2001
In Millions US Dollars

FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic	Loan	Equity	Quasi	Partic
1993/94/99	Yanacocha	20.00	0.00	0.00	80.00	9.00	0.00	0.00	36.00
1998/01	agroguayabito	2.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00
2000	Agrokasa	6.00	0.00	0.00	0.00	6.00	0.00	0.00	0.00
1999	Alicorp	20.00	0.00	20.00	20.00	20.00	0.00	20.00	20.00
1979/83/90/93	Buenaventura	0.00	0.38	0.00	0.00	0.00	0.38	0.00	0.00
1997	Interbank-Peru	20.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00
2000	Laredo	10.00	0.00	5.00	0.00	4.00	0.00	5.00	0.00
1998	Latino Leasing	10.00	2.50	0.00	0.00	10.00	2.50	0.00	0.00
1999	Milkito	3.50	0.00	3.50	0.00	3.50	0.00	3.50	0.00
1984	Minera Regina	1.29	0.00	0.00	0.00	1.29	0.00	0.00	0.00
1994	PPF Cayman	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	Paramonga	22.00	0.00	0.00	20.53	14.18	0.00	0.00	12.35
1994	Peru Prvtzn Fund	0.00	13.89	0.00	0.00	0.00	13.89	0.00	0.00
1993/96/00	Quellaveco	0.00	0.60	0.00	0.00	0.00	0.56	0.00	0.00
1999	RANSA	10.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00
2001	UPC	7.00	0.00	0.00	0.00	7.00	0.00	0.00	0.00
1982/92/95	Wiese Leasing	4.55	0.00	0.00	0.00	4.55	0.00	0.00	0.00
Total Portfolio:		136.34	17.37	28.50	120.53	111.21	17.33	28.50	68.35

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic
1998	Wong	25.00	5.00	0.00	60.00
2000	CAMSA	2.00	0.00	0.00	0.00
2001	Inka Terra	8.00	0.00	0.00	0.00
2001	Peru OEH	10.00	0.00	0.00	0.00
Total Pending Commitment:		45.00	5.00	0.00	60.00

Annex 10: Country at a Glance

PERU: SECOND RURAL ROADS PROJECT

POVERTY and SOCIAL

1999

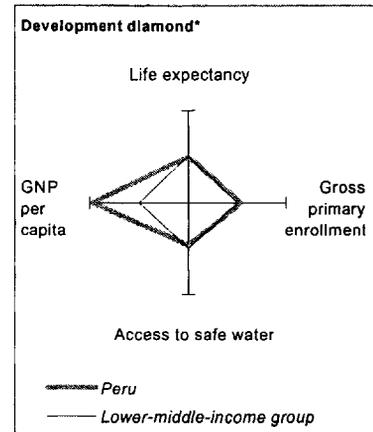
	Peru	Latin America & Carib.	Lower-middle-income
Population, mid-year (millions)	25.2	509	2,094
GNP per capita (Atlas method, US\$)	2,350	3,840	1,200
GNP (Atlas method, US\$ billions)	59.3	1,955	2,513

Average annual growth, 1993-99

	Peru	Latin America & Carib.	Lower-middle-income
Population (%)	1.7	1.6	1.1
Labor force (%)	2.6	2.5	1.2

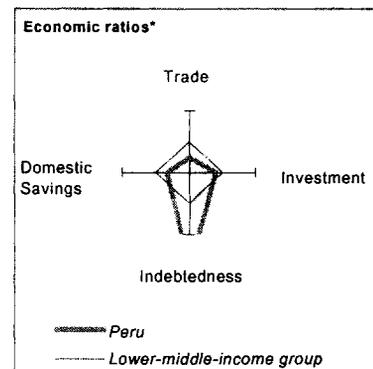
Most recent estimate (latest year available, 1993-99)

	Peru	Latin America & Carib.	Lower-middle-income
Poverty (% of population below national poverty line)	41	..	..
Urban population (% of total population)	72	75	43
Life expectancy at birth (years)	69	70	69
Infant mortality (per 1,000 live births)	40	31	33
Child malnutrition (% of children under 5)	8	8	15
Access to improved water source (% of population)	80	75	86
Illiteracy (% of population age 15+)	10	12	16
Gross primary enrollment (% of school-age population)	123	113	114
Male	..	..	114
Female	..	..	116



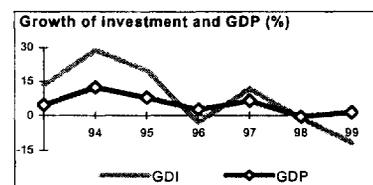
KEY ECONOMIC RATIOS and LONG-TERM TRENDS

	1979	1989	1998	1999
GDP (US\$ billions)	15.5	28.6	62.7	57.2
Gross domestic investment/GDP	21.7	20.7	24.3	21.7
Exports of goods and services/GDP	27.7	12.4	12.0	13.6
Gross domestic savings/GDP	30.3	20.8	19.5	19.9
Gross national savings/GDP	..	..	18.3	18.2
Current account balance/GDP	4.7	-0.8	-6.0	-3.6
Interest payments/GDP	3.7	0.5	1.8	2.4
Total debt/GDP	59.6	64.9	51.6	56.8
Total debt service/exports	33.8	8.9	27.4	26.2
Present value of debt/GDP	..	..	53.5	..
Present value of debt/exports	..	..	374.8	..
	1979-89	1989-99	1998	1999
(average annual growth)				
GDP	0.5	4.3	-0.5	1.4
GNP per capita	-2.3	3.3	-2.4	-0.8
Exports of goods and services	-1.8	7.3	3.3	7.4



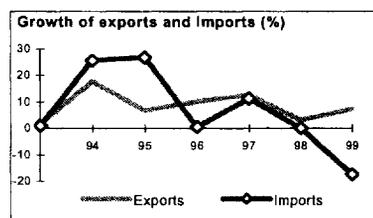
STRUCTURE of the ECONOMY

	1979	1989	1998	1999
(% of GDP)				
Agriculture	11.7	8.0	7.1	7.2
Industry	42.8	36.2	36.8	37.3
Manufacturing	23.5	25.3	23.1	23.7
Services	45.5	55.8	56.1	55.5
Private consumption	61.0	68.7	71.6	71.1
General government consumption	8.6	10.5	8.9	9.0
Imports of goods and services	19.1	12.3	16.7	15.5



(average annual growth)

	1979-89	1989-99	1998	1999
Agriculture	2.8	4.5	0.4	12.9
Industry	0.3	5.5	-0.3	0.0
Manufacturing	0.3	3.7	-3.6	0.3
Services	0.2	3.6	-0.7	0.9
Private consumption	2.5	2.4	-0.4	0.8
General government consumption	1.2	2.3	1.8	3.2
Gross domestic investment	-2.5	8.9	-1.3	-11.9
Imports of goods and services	-2.9	9.7	0.1	-17.3
Gross national product	-0.1	5.1	-0.7	1.0

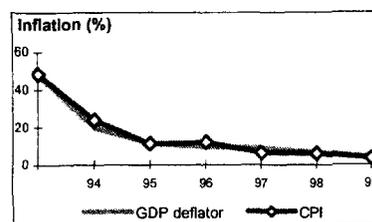


Note: 1999 data are preliminary estimates.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

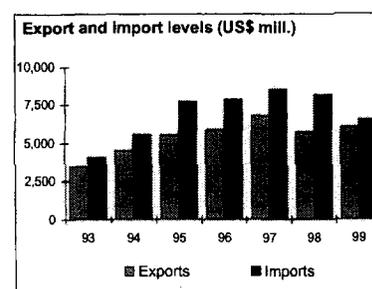
PRICES and GOVERNMENT FINANCE

	1979	1989	1998	1999
Domestic prices				
<i>(% change)</i>				
Consumer prices	64.7	3,398.7	6.0	3.5
Implicit GDP deflator	73.5	2,926.6	6.4	3.8
Government finance				
<i>(% of GDP, includes current grants)</i>				
Current revenue	..	..	14.0	12.8
Current budget balance	..	..	1.7	0.0
Overall surplus/deficit	..	..	-0.7	-2.7



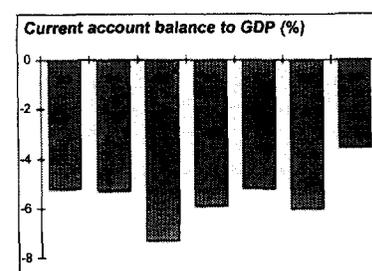
TRADE

	1979	1989	1998	1999
<i>(US\$ millions)</i>				
Total exports (fob)	..	3,533	5,735	6,114
Copper	..	764	779	776
Fishmeal	..	405	392	533
Manufactures	..	989	1,968	1,874
Total imports (cif)	..	2,287	8,200	6,581
Food	..	366	1,146	932
Fuel and energy	..	219	579	629
Capital goods	..	801	2,592	2,140
Export price index (1995=100)	..	90	83	72
Import price index (1995=100)	..	82	96	95
Terms of trade (1995=100)	..	110	86	76



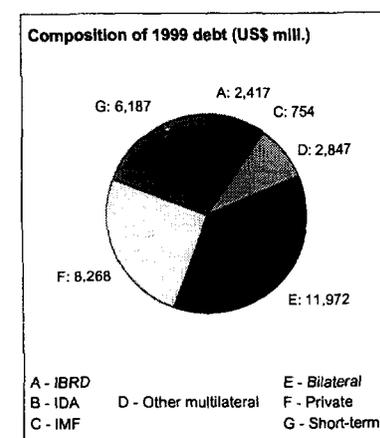
BALANCE of PAYMENTS

	1979	1989	1998	1999
<i>(US\$ millions)</i>				
Exports of goods and services	4,085	4,369	7,487	7,793
Imports of goods and services	2,511	3,429	10,492	8,857
Resource balance	1,573	940	-3,005	-1,064
Net income	-966	-1,355	-1,484	-1,635
Net current transfers	123	175	697	669
Current account balance	730	-240	-3,792	-2,030
Financing items (net)	418	780	2,786	1,255
Changes in net reserves	-1,148	-540	1,006	775
Memo:				
Reserves including gold (US\$ millions)	..	..	9,982	9,002
Conversion rate (DEC, local US\$)	2.25E-7	4.02E-3	2.9	3.4



EXTERNAL DEBT and RESOURCE FLOWS

	1979	1989	1998	1999
<i>(US\$ millions)</i>				
Total debt outstanding and disbursed	9,269	18,582	32,397	32,445
IBRD	235	1,085	2,128	2,417
IDA	0	0	0	0
Total debt service	1,402	407	2,454	2,387
IBRD	31	0	184	249
IDA	0	0	0	0
Composition of net resource flows				
Official grants	47	121	239	..
Official creditors	195	117	61	709
Private creditors	248	76	620	310
Foreign direct investment	71	59	1,930	2,068
Portfolio equity	0	0	174	-352
World Bank program				
Commitments	171	0	38	390
Disbursements	61	0	271	381
Principal repayments	12	0	64	89
Net flows	49	0	207	291
Interest payments	19	0	120	166
Net transfers	31	0	88	125



**Additional
Annex 11**

**The First Phase of the Rural Roads Program
An Economic and Social Impact Assessment**

The Project Area. There are huge welfare disparities across Perú, but there is a heavy concentration of poverty along the most geographically adverse regions, as in the *sierra* and the *selva* (Table 1). The differences in poverty between areas could be due to differences in the characteristics of the households living in the various areas or to differences in the characteristics of the areas themselves (the latter as a result of direct geographic effects or of differences between areas in the returns to household characteristics). Although these welfare disparities can be partly attributed to geography, they are also related to a significant dispersion in access to infrastructure and other public assets. As the availability of infrastructure is constrained by geography, the more adverse geographic regions are the ones with less access to public infrastructure. This has implications for policy design since the larger the area effects the stronger the rationale for investing in the physical and social infrastructure of poor areas.

Table 1: Population's Poverty Level By Regions Surveyed (%)
(Poverty line criterion)

	<i>Total</i>	<i>Northern Highland</i>	<i>Central Highland</i>	<i>Southern Highland</i>	<i>Jungle Jungle</i>
<i>TOTAL</i>	100.0	100.0	100.0	100.0	100.0
Total Poor	70.1	64.1	65.4	76.7	73.6
1. Extremely Poor	34.6	25.1	25.3	44.8	45.8
2. Not Extremely Poor	35.5	39.0	40.2	31.9	27.8
Not Poor	29.9	35.9	34.6	23.3	26.4

Source: Cuanto, 2000

The RRP was targeted to investments in the 12 departments that rank among the highest in rural poverty: Ancash, Apurimac, Ayacucho, Cajamarca, Cuzco, Huancavelica, Huánuco, Junín, Madre de Dios, Pasco, Puno and San Martín. Most of the project area encompassed the highlands of Peru, where any rural intervention can be considered targeting the poor. Nevertheless, within those 12 departments, the project targeted those regions (districts) with high prevalence of rural poverty, as measured by indicators such as unsatisfied basic needs or infant mortality rates (Table 2).

Table 2: Main Social Indicators for Project Area – 1995

<i>Indicator</i>	<i>Districts within RRP area</i>		
	<i>All</i>	<i>Covered</i>	<i>Not cov.</i>
<i>(Average for 12 departments)</i>			
Rural Population (%) ⁽²⁾	54.9	70.2	50.7
Health Malnutrition Rate	57.9	63.6	56.3
Education Adult Illiteracy Rate	23.7	30.0	22.0
Student Absenteeism	14.3	16.7	13.7
Housing Overcrowded housing	32.4	35.3	31.6
Precarious housing	28.4	34.4	26.7
Services No water in dwelling	72.7	85.0	69.3
No sanitation	79.1	90.1	76.1
No electricity	65.5	79.8	61.6

⁽²⁾ Percentage of rural population for entire country = 30.2

Source: FONCODES.

Table 2 shows some social and basic needs indicators weighed by population for districts in the project area benefited and not yet benefited by the RRP during the first phase. The comparison stresses the strong

poverty focus of this first phase. Table 3 gives a snapshot of the project area in terms of number of districts covered during the first phase of the RRP by poverty level. The RRP has been implemented in about 314 municipalities. Half of these municipalities fall within the category of "very poor", 32 percent of "poor", 10 percent of "extreme poor", and 8 percent of "non poor" (that is, 92% of the districts within which roads were rehabilitated under the RRP present high rural poverty indicators). In terms of the length of the network already rehabilitated and the total length in each department, the first phase has covered slightly above 31 percent of the total rural network for the 12 departments. Most of the rehabilitated rural roads connect with the district capital cities and with other rural and secondary roads, with a small percentage connecting directly to the primary (national) network or paved roads. The proposed follow-on phase will continue centered on the same 12 departments, where there is ample scope for expansion. This second phase will deepen the coverage within those districts and provinces already benefited by the first project -in part to support the achievement of institutional goals--, as well as expand the program to other districts not yet covered.

Table 3: Districts Covered and Rural Roads Rehabilitated during First Phase of RRP

Regions/ Departments	Districts Covered by Poverty Level					N° of Districts in Project Area.				Rural Road Network		
	Fair	Poor	Very Poor	Extr. Poor	Total	Total	% Covered	Extreme poor		Total (km)	Rehabilitated (km)	(%)
								Total	% covered			
<i>Northern Highland</i>	1	18	22	0	41	127	32%	2	0%	3,559.00	1,364.78	38.35%
Cajamarca	1	18	22	0	41	127	32%	2	0%	3,559.00	1,364.77	38.35%
<i>Central Highland</i>	16	41	66	11	134	484	28%	53	21%	13,138.40	3,843.82	29.26%
Ancash	3	14	30	2	49	166	30%	13	15%	2,590.00	1,236.17	47.73%
Huancavelica		9	17	0	26	93	28%	7	0%	2,485.60	917.59	36.92%
Huanuco	4	2	10	9	25	74	34%	31	29%	1,805.20	795.68	44.08%
Junin	9	10	6	0	25	123	20%	2	0%	4,847.20	618.35	12.76%
Pasco		6	3	0	9	28	32%	0		1,410.40	276.03	19.57%
<i>Southern Highland</i>	7	34	56	22	119	405	29%	99	22%	10,127.90	3,136.47	30.97%
Apurimac		11	18	11	40	80	50%	23	48%	1,855.00	958.93	51.69%
Ayacucho	1	12	17	2	32	109	29%	18	11%	2,782.50	951.20	34.19%
Cusco	1	6	9	9	25	108	23%	30	30%	2,866.80	683.03	23.83%
Puno	5	5	12	0	22	108	20%	28	0%	2,623.60	543.31	20.71%
<i>Jungle</i>	1	7	12	0	20	87	23%	12	0%	1,727.60	536.98	31.08%
Madre de Dios		1	2	0	3	10	30%	3	0%	598.00	190.95	31.93%
San Martin	1	6	10	0	17	77	22%	9	0%	1,129.60	346.03	30.63%
TOTAL	25	100	156	33	314	1103	28%	166	20%	28,552.90	8,882.05	31.11%
<i>Percentage</i>	<i>8%</i>	<i>32%</i>	<i>50%</i>	<i>10%</i>	<i>100%</i>							

Source: Based on data from FONCODES' Poverty Map, PCR's project records, and DGC's statistics.

Rural Road Accessibility Improvement to Help Reduce Poverty. Improved accessibility is a key element in the reduction of poverty in rural areas. Table 4 shows the distribution of the about 1,800 districts in Peru, classified by main type of access and poverty category. Does quality of access matter?

The strong correlation between the quality of access to a district municipality and its poverty level is evident. While it can be argued whether is a cause or its effect, the fact is that poverty is more pronounced in places that are more remote from market and cities. These same places have the least non-farm income earning opportunities, the least developed infrastructure and generally poorer access and quality of schooling.

The importance of rural infrastructure and transport services is reflected in the results of a 2000-household survey conducted in 2000 to assess the impact of the first phase of the RRP, which are indicative of the conditions found in about 381 villages in the project area. Table 5 disaggregates the average distance from sample households to various services by location (geographic domain) and poverty level. Accessibility has to do with the siting of the facilities and services, and with the mobility made possible by the availability of both, rural transport infrastructure and means of transport. The table suggests that beyond the more basic levels of the services (e.g., primary education, local health post), access to important services such as hospitals, secondary schools and markets entails traveling over relatively large distances.

Table 4: Distribution of Peru's districts by main type of access and poverty level

Quality of Access	Level of poverty Type of Access	Ext. Poor	Very Poor	Poor	Moderate	Acceptable	Total
Extremely Difficult	Path	24	3	1			28
	Non-motorized track	97	33				130
	Waterway/lake	30	26				56
Difficult	Motorized road	50	400	119	3		572
	Airway		2	1			3
	Railway		3				3
Accessible	Gravel road		121	393	68		582
	Paved road		4	204	189	15	412
	Avenue				10	22	32
Total		201	592	718	270	37	1,818

Source: FONCODES 2000, based on information from INEI "Transporte y Comunicaciones en el Peru"

Table 5: Average Distance from Households to Main Destinations, by Geographic Domain and Household Poverty Level (km)																			
Geographic Domain	Education			Health		Basic Services							Trip distance by Purpose of Trip						
	Household Poverty Level	Pre-Prim.	Prim. School	Sec. School	Local Hosp.	Water Source	Tele. phone	Mail Post	Police Post	Public Transp.	Market Place	Agric. Fair	Judge Registry	Public Work	Sell Goods	Buy Goods	Visit Fam.	Social Act.	
TOTAL	1.1	2.0	6.2	30.2	8.0	1.4	5.4	27.5	15.3	7.1	16.7	10.7	7.1	36.2	8.0	19.5	33.1	39.6	24.7
Extreme Poor	1.2	1.9	6.0	30.7	5.0	1.5	6.1	32.4	20.6	3.8	12.8	8.8	4.3	39.1	5.6	17.4	28.6	35.9	25.9
Other Poor	1.1	1.5	3.6	22.3	8.8	1.3	6.2	28.6	12.4	7.8	16.5	11.5	4.5	33.7	7.3	20.5	35.3	42.6	26.5
Non Poor	0.9	2.8	8.6	33.9	9.8	1.4	4.4	22.5	14.4	9.3	19.6	12.2	12.5	35.9	11.5	22.4	36.9	40.4	21.2
Northern Highlands	1.4	1.7	1.8	13.3	2.9	0.7	4.3	3.1	4.8	3.1	6.1	7.9	7.1	10.0	7.0	13.0	13.7	21.4	11.4
Extreme Poor	1.7	2.5	2.2	16.4	3.6	0.7	3.4	4.3	6.1	4.1	6.5	10.2	3.8	4.2	3.6	10.2	10.4	17.4	7.1
Other Poor	1.7	1.3	1.9	9.4	2.5	0.7	7.1	-	6.5	3.4	7.5	9.5	16.0	10.5	4.5	12.5	12.1	20.9	13.2
Non Poor	0.3	0.5	1.1	14.1	2.9	0.8	2.6	2.4	3.0	1.3	4.2	5.1	1.6	16.6	12.7	18.6	22.0	25.6	14.0
Central Highlands	1.0	1.8	5.6	32.4	4.4	0.8	6.5	32.4	26.2	4.8	23.5	12.5	11.1	40.2	7.0	21.0	31.6	42.0	23.1
Extreme Poor	1.0	1.3	5.4	32.6	3.7	0.9	8.3	40.1	33.0	3.1	16.3	8.2	6.8	48.0	7.3	22.2	28.0	39.7	23.1
Other Poor	0.5	1.4	2.7	20.4	2.8	0.8	8.0	28.9	20.2	4.6	23.7	13.3	5.6	42.0	7.1	20.7	29.8	41.2	18.7
Non Poor	1.5	2.9	7.6	37.5	6.5	0.8	4.6	27.1	24.6	6.8	27.6	18.1	24.2	33.4	6.7	18.6	38.1	44.9	25.1
Southern Highlands	1.0	2.6	9.4	40.1	13.8	1.3	6.0	23.8	7.9	7.8	16.9	10.6	4.0	37.8	10.0	23.6	44.3	45.6	31.1
Extreme Poor	1.2	2.3	8.7	47.8	7.2	2.0	7.1	20.3	7.4	4.4	14.3	8.7	1.7	35.0	5.5	16.0	37.7	39.2	35.3
Other Poor	1.0	2.1	5.0	33.5	19.6	1.0	5.7	27.5	2.8	10.1	17.2	11.1	0.4	16.9	9.3	32.9	52.5	55.4	34.4
Non Poor	0.6	3.9	14.9	42.0	14.4	0.3	5.6	26.3	9.9	8.9	18.7	12.6	8.2	43.8	17.1	30.2	44.0	42.1	14.8
Jungle	1.0	1.4	4.8	30.0	5.4	2.5	3.1	16.1	16.1	12.1	20.6	17.1	7.2	47.8	6.5	12.0	28.5	41.3	30.7
Extreme Poor	0.6	0.6	2.4	21.7	2.3	1.8	1.1	-	4.0	4.2	19.5	-	-	-	4.2	7.3	26.7	45.9	6.9
Other Poor	1.3	1.0	4.8	22.7	2.3	2.2	3.6	27.5	13.3	10.7	18.6	15.3	5.9	-	5.9	7.3	28.2	36.4	36.3
Non Poor	0.9	2.8	6.5	39.0	12.1	3.4	3.5	8.5	19.7	17.9	23.1	18.9	9.8	47.8	10.7	23.8	29.9	44.5	43.8

Source: Instituto Cuánto. Encuesta Socioeconómica de Hogares, 2000. The departments included in each geographic domain are listed in Table 3

Furthermore, a recent study (see Box 1) analyzed the impact of transaction costs in the commercialization of potatoes in Huancavelica and their linkage with the quality of access. The study estimated transaction costs to be around 50 percent of sale prices for producers connected to markets through rural roads, and 60 percent for producers connected through non-motorized tracks. The report concluded that the volume of sales in the research sample were about 48% lower due to these high transaction costs.

Box 1: Quality of access and transaction costs in the commercialization of potatoes

- *Study Scope.* In March 1999, GRADE (*Grupo de Analisis para el Desarrollo*) performed a study to measure the impact of transaction costs in the Peruvian agriculture. The study analyzed transaction costs in the commercialization of potatoes, the dominant product in the rural Andes, and how they affected producers' decisions to articulate with markets.
- *Study Coverage.* The study sample covered about 1400 potato producers in the districts of Pazos y Huaramba, Province of Tayacaja (Huancavelica) located between 2,500 and 3,500 meters above sea level. On average, the owner of about 49% of the land where the potatoes are cultivated sell their production in the markets. The transaction costs measured in the study are classified into (i) information costs (incurred before the transaction and associated with learning about market products and prices and identifying commercial counterparts), (ii) negotiation costs (associated with the process of agreeing on the sale terms, paying transaction fees, and preparing formal/informal contracts), and (iii) monitoring costs (incurred after the transaction and associated with ensuring compliance with the contract terms, such as quality of goods, payments, etc). Some of the findings are summarized below.
- *Quality of Access and Information.* For those connected through NMT tracks, it took on average about 3.4 days to know the final transaction/sale price, as opposed to about 0.7 days for those connected through roads. All of those connected through NMT tracks had to travel to the market to learn about the price, as opposed to about 70% of those connected through roads. Less than 20% of those connected through NMT knew the prices prevailing in Lima, as opposed to about 87% of those connected through roads. While on average 4.6 merchant dealer visited each producer connected through roads, only on average 0.12 visited those connected through NMT.
- *Negotiation.* Only 32% of producers connected through NMT tracks felt they could sell to someone else, against 88% of producers connected through roads. The former negotiated the price on average 1.07 times, against 1.47 times in the case of the latter group. Market prices varied considerably, from 0.45-0.58 S/kg in the local market to an average 0.75 S./kg in Huancayo (regional market), and 1.01 S./kg in Lima (national market).
- *Monitoring.* The degree of informality in transactions increases as the quality of access decreases. Only about 55% of the transactions are documented for those connected through NMT, against about 79% for those connected through roads. The number of merchants visited before selling was higher for those connected through NMT (6.5 against 3.9 for those connected through roads). Establishing a stable and reliable relationships appeared to be key to reducing monitoring costs and getting lower prices.
- *Access Condition and Sale Prices.* The data collected in the sample showed that both price per kg and sale/production ratios were higher when the access was in good condition (on average S./0.47 per kg and 0.76 respectively, against S./0.36 per kg and 0.66 when the access was in poor condition) or travel time from farm to market were shorter (S./0.48 per kg and 0.75 for trips shorter than 3 hrs. against S./0.38 per kg and 0.66 for trips longer than 3 hrs.).

Balancing Poverty Targeting and Development Opportunities. The RRP focuses on restoring basic accessibility conditions through low cost solutions, rather than on improving geometric standards, paving or building new roads. This strategy was chosen for two reasons. First, road rehabilitation needs are staggering in Peru due to the extensive deterioration of the unpaved secondary and rural road networks. This, combined with the low density distribution of the population in rural areas, calls for low cost investments that can reach remote areas within the justification of cost-effectiveness principles. Secondly, basic access introduces qualitative changes in the nature of access (threshold effects). Thus, restoring basic access maximizes impact at the lowest cost.

One of the main principles of a poverty alleviation strategy is the recognition that a sustainable solution for poverty should rest on income generation. However, the poorest communities are precisely the least able to generate income mainly because they are isolated from marketplaces. Consequently, a strategy oriented toward poverty reduction should necessarily seek to establish links between the poorest and the marketplaces. An effective link between the poor and marketplaces depends mainly on linking rural areas to urban settlements, where market places are found; not only to big cities (such as department capitals) but also to second- and third-range cities (province capitals and district capitals, respectively). The importance of these types of cities arises from the relationships established between them, with the result that the development of a city is in reality part of the formation of a system of inter-linked cities.

Due to Peru's geographical conditions, urban systems usually form longitudinal corridors, which given their economic potential may be identified as "economic corridors". Therefore, rural accessibility improvements under poverty alleviation interventions should balance targeting the very poor with ensuring their linkage with markets and medium cities that can become engines of growth. The "economic corridors" located in the Highlands have been the hardest to urbanize. In these corridors, road integration was poor, many times in both longitudinal and transversal senses. In such conditions, towns and the rural areas surrounding them stagnated without any marketplace consolidation.

The RRP emphasizes integration with markets and economic centers through rehabilitation of "networks" of rural roads and key secondary roads that complete their linkage, and of the informal network of non-motorized paths that reach the poorest villages. Due to the high vulnerability of the rural road infrastructure, year-round access is possible only if maintenance is provided on a continuous basis immediately after rehabilitation. Thus, upon completion of the rehabilitation works, the RRP roads were subject to a continuous maintenance program performed by community-based organizations.

Main Outputs of the First of the RRP

Most of the physical targets set for the first phase of the RRP were surpassed by its end on December 31, 2000, after 5 years of implementation. Almost 8,900 km of rural roads and about 2,400 km of secondary roads were rehabilitated under the project (18% and 8% more than envisioned at its beginning). Maintenance with 415 micro-enterprises was applied to almost 11,000 km of roads, generating about 4,700 permanent employment (to be added to the 32,300 employment generated on a non-permanent basis by the road rehabilitation works). In addition, about 3,500 km of NMT tracks were rehabilitated, doubling the number expected at the beginning of the program.^{1/} The project was estimated to benefit directly 2,8 million people in the rural areas of the 12 departments of Peru's *Sierra* region, and an additional 0,7 million if the population indirectly connected to the rehabilitated roads through NMT tracks is considered.

In all, the project was successful in reestablishing the accessibility conditions and better transport services to the rural areas in the area of influence of the rehabilitated roads and securing the sustainability of that accessibility with effective and efficient maintenance with local micro-enterprises. This is a central achievement, since most often the communities' support for low cost solutions is undermined by the lack of credibility of ensuing maintenance arrangements. The project was also successful in spurring participatory methodologies for the definition of priorities and the strengthening of the preparation of transport development plans at the local level, with a more integrated vision of these plans and increased contribution of the civil society to achieve this vision. For their interesting social and poverty reduction side effects, the following paragraphs briefly discuss two innovative components: road maintenance through community based micro-enterprises and track improvements for non-motorized transport.

Creating Opportunities through Community-based Microenterprises. The RRP has set up a cost-effective routine maintenance system based on contracting out labor-intensive maintenance works to micro-enterprises, local cooperatives and other community-based organizations. The difficulties of ensuring central-government maintenance of a myriad of scattered rural roads, and the failure of traditional municipal force account works, suggest private-sector involvement in the form of contracts with small road maintenance micro-enterprises. Box 2 in the main text provides a colorful illustration of the social dimensions of the micro-enterprise program.

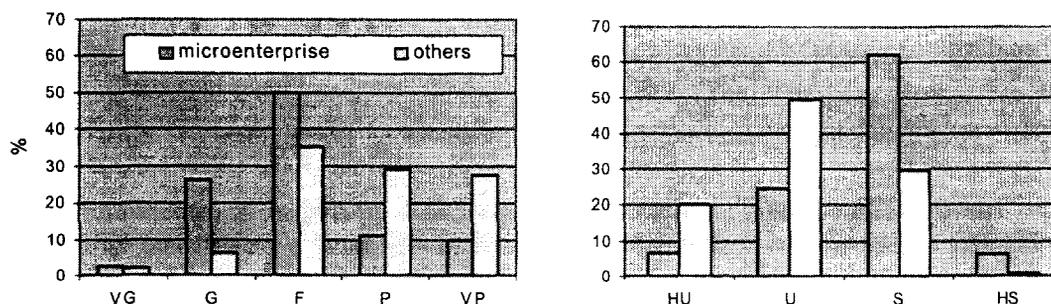
Although the composition of the micro-enterprises varies according to the length of the road, their average size is about 13 people and the average length of the roads covered under a contract is about 34.6 km (an average of 2.65 km per person). All micro-enterprises have a legal status; most of them are cooperatives or associations and as such are required to reinvest their profits in businesses undertaken by the association. So far there are no indications that the different legal status may translate into differences in their performance or their incentives to jump-start new activities. Micro-enterprises are required to keep books, pay taxes and submit financial information to *Superintendencia Nacional de Administración Tributaria* (SUNAT). The following paragraphs describe main features of this successful program, the outcomes achieved so far, and the intended evolution of the program under the second phase of the RRP.

Who are the new (micro) entrepreneurs? Typically, micro-enterprises are made up of 11 to 20 people living close to the road. Women participation has been low --on average about 4%, but much larger in some departments (e.g., Puno and Madre de Dios, about 8% and 21% respectively) reflecting variations in gender relations. The distribution by age shows 36% between 18-30 years old, 46% between 31-45 years old, and 18% older than 45. To ensure their sustainability, the selection process has sought a balanced level of education within each micro-enterprise: on average 37% of the members have (complete or incomplete) secondary education, 60% have primary education only and 3% are illiterate. In spite of suffering the limitations imposed by the rural environment where they live (i.e., lack of basic infrastructure such as electricity and water and managerial assistance services), they have developed an "entrepreneur culture": they don't see themselves as working for a salary but rather as an autonomous group that has the opportunity to capitalize savings through a maintenance contract and undertakes the responsibility for the problems that may arise in their daily activities. This is a tribute to the selection process and the training provided by PCR under the RRP, which emphasizes the development of entrepreneur skills. PCR hired NGOs and social promoters to select the members through competitive examination. The process considered parameters such as residence close to the road, previous experience in construction activities, social status (higher scores given to heads of families earning less than S/.300) and a personal interview. In general, district mayors and community leaders led the convocation which attracted 40 to 60 persons per micro-enterprise. The promoter provided the initial basic training, followed by *Servicio Nacional de Capacitación para la Industria de la Construcción* (SENSICO) and later on, monitors hired by PCR to extend on-the-job training in engineering, accounting and administration.

Criteria for Selecting Micro-enterprise Members		
<i>Selection Parameter</i>	<i>Score</i>	<i>Criteria</i>
Residence	3	Closeness to road
Experience	4	Road or construction works
Social situation	3	Unemployment/low income
Education	3	Literacy
Entrepreneurial attitude	4	Business orientation
Personal interview	3	Respect from community; commitment to job.

How are the micro-enterprises financed? The micro-enterprises are engaged through performance-based contracts with PCR and paid on a monthly basis, subject to meeting the quality standards stipulated in the contract. Majors approve the monthly certificates. From January 1, 2002 on, municipalities will contribute to defraying the cost of maintenance.. Micro-enterprise members designate their president and an executive council, and determine how the monthly payment is allocated to the various uses (e.g., wages, tools, rentals, transportation, savings, investment fund). On average, salaries account for 89% of the expenditure, and profit margins average 14%. Contract payments were revised down in 2001 to reflect productivity gains and the realignment of maintenance responsibilities under different contract modalities.

Outcome 1: An effective approach to rural road maintenance. Micro-enterprises carry out simple works --but continuously throughout the year-- to clean ditches and culverts, control the vegetation, maintain the running surface (filling potholes and ruts, maintaining the surface camber), remove small landslides and undertake other emergency works. Project micro-enterprises have also demonstrated capacity to build retaining walls and small bridges and handle El Niño emergency works under the guidance of PCR. The contracts are annual, renewable, and based on performance indicators. The micro-enterprise is not a welfare program but a cost-effective way of keeping in good condition the roads rehabilitated and ensuring the benefits from improved access will not vanished. The charts below provide an assessment of the performance of the micro-enterprise system taken from the project impact evaluation study carried out in 2000. The results, presented in terms of road network condition (from very good to very poor) and reliability of access (highly unsatisfactory to highly satisfactory), are compared to the ones achieved with the mostly force account arrangements that characterize maintenance activities on similar roads in the control section.



Outcome 2: Generation of long-term direct and indirect employment at the community level. The program generates direct employment for micro-enterprise members, and indirect for others in community who are engaged as temporary workers or in complementary productive activities started by the microenterprises (see below). The micro-enterprise becomes a focal point for community work, as peer pressure makes its members engage in, and lead communal activities to ensure continuous support from the community. PCR's micro-enterprise program was selected as one of the innovative and cost-effective approaches to creating job opportunities in a study commissioned in 2000 by the Secretariat of the National Dialogue on Poverty. A summary of the results and the conditions for success highlighted by the study follow:

An Independent Evaluation of the Micro-enterprise Program

<i>Number of ME</i>	398
<i>Direct Employment</i>	4,524
<i>Cost per job created</i>	US\$534
<i>Conditions for success</i>	<ul style="list-style-type: none"> • Appropriate selection of candidates • Presence of leaders • Emphasis on entrepreneurial culture • Favorable economic conditions

Source: SASE "Estrategias para Crear Oportunidades de Empleo". III Diálogo para el Desarrollo y Lucha Contra la Pobreza. October 2000

Outcome 3: Catalysts for other local development initiatives. The use of micro-enterprises has some comparative advantages for further developing rural areas. The program creates entrepreneurial capacity in the community. The micro-enterprises have acted as catalysts for other local development initiatives, become contact points for extension services, and even mobilized untapped local resources for local community ventures. So far, about 40 percent of the micro-enterprises have started productive activities, bringing new services and stimulating labor markets in their communities. Most of these initiatives are funded by profits generated through the maintenance contract and members' savings, although for certain productive activities the micro-entrepreneurs were able to obtain credit from suppliers and even contributions from donor agencies such as GTZ. The productive projects generate benefits that spill over other community members. The benefits go well-beyond the up-keeping of roads.

Productive Activities by Maintenance Micro-enterprises:

<i>Typical Activities</i>	Transportation services, seedbeds for traditional crops, livestock breeding, nurseries, reforestation, grocery stores, small transforming businesses, grain mills
<i>Jobs per activity</i>	2 additional people, 92% men, 8% women.
<i>Gross revenue generated</i>	Between 300 to 20 000 soles/year depending on the sector or industry the business belongs to, its maturation, and the associates' expertise
<i>Financing</i>	On average 58% equity by members, 42% credit (but mostly from suppliers, GTZ)

Source: Cuanto. Economic, Social, Environmental and Institutional Evaluation of the RRP. 2000

These positive results hinge on the micro-enterprise opportunity to access a sustained income stream -- secured through the maintenance contract with PCR, and technical assistance in areas such as accounting, entrepreneurial skills. However, with an interruption rate estimated at around 22 percent, these results also show how difficult is to succeed in a rural working environment. The main reasons for interruption range from insufficient training and technical assistance (about 40%); lack of financing (about 24%); lack of market (about 20%); and other reasons (16%).

Micro-enterprises under the Second Phase of the RRP. Building on the experience gained so far, an on-going study will explore several adjustments to further increase the cost-effectiveness of the micro-enterprise program and strengthen its long-term sustainability. A first step is the introduction of different maintenance costs and type of contracts, varying them on the basis of certain road functional and physical features that determine the intensity of the workload and redefining their scope and compensation levels to further increase productivity and flexibility to work under the tight resource constraints that characterize the local government environment. The study will also strengthen monitoring and reporting systems in response to the stronger accountability lines required by the MCM. Finally, in a second stage the study will address those sustainability issues discussed in Box 2.

Box 2: Micro-enterprise sustainability Issues to be addressed under the Second Phase of the RRP

- *Macro Issues (program level).* Involving communities and developing private micro-enterprises increases the capacity for road maintenance, and builds pressure over central and local governments to secure the continuity of the maintenance program. The project secures a market for the services of the micro-enterprises and provides continuous training. Securing long-term sustainability, however, entails transferring the program to the municipal environment. The transfer to such an environment poses a challenge to the sustainability of the program as it builds on increasing the revenue base of municipal governments, either through local sources or inter-governmental transfers, to secure micro-enterprise payments. Under the new co-financing arrangement, municipalities are required to contribute with about 50 percent of the cost.
- *Micro Issues.* Communities strongly support the program, but this support might erode with time if the benefits accrued to micro-enterprise members do not spill over the rest of the community. Productive activities started by the microenterprises at their own initiative may help enhance "social" sustainability by strengthening the financial position of the micro-enterprises, opening up opportunities for other community residents, and facilitating the renewal of micro-enterprise members as they become wealthier. However, the form of association (a non-profit cooperative) under which most of the micro-enterprises were conformed and the way micro-enterprises have organized and financed the productive activities might create incentives against the natural renewal of members. Micro-enterprises have relied on a mix of profits and personal wages to finance their new undertakings outside the maintenance contract. The portion coming from the micro-enterprise profits should have been differentiated from that coming from salaries (the latter should have been treated as personal equity contributions, which beneficiaries could take with them as they decide to leave the microenterprise).
- *Strengthening Sustainability.* An on-going study will explore several options to address the above issues. The options aimed at: i) facilitating the transfer to the local environment (e.g., reducing costs by increasing productivity or scaling down the level of service albeit without compromising year-round passability); ii) strengthening the sustainability of complementary productive activities; iii) fostering greater participation by the community in sharing the benefits of productive projects and aligning compensation levels with the opportunity cost of labor in the agriculture market; iv) opening up for competition or for new micro-enterprises those contracts with micro-enterprises that have become strong enough to continue on their own working as small contractors or managing their own productive activities.

Improving Tracks for Non-Motorized Transport to Reach the Very Poor. The first phase of the RRP demonstrated that Non-Motorized Transport (NMT) improvement programs are strategic interventions to address the transport needs of the most poor, and thus, alleviate rural poverty. In the highlands of Peru, large communities depend exclusively on tracks and trails to access basic social services and meet their trade needs. There are many districts where the main access both to their capitals and communities as well is through NMT tracks and paths (almost 10 percent of the districts in Peru according to Table 4). These districts and communities are the most isolated and impoverished. Thus, the NMT component benefits low-income groups disproportionately more than high-income groups, and as a result, income distribution is regarded as relatively improved with the project. Box 3 summarizes key lessons learned through the implementation of the pilot under the first phase of the RRP.

Implementation of the NMT pilot began in five locations in 1997, two years behind schedule. It gained enormous support from community and government officials, even from those who initially had a lukewarm view of its potential impact. As a result, the NMT program was extended to rehabilitate about 3,000 km of non-motorized tracks in 10 departments, reaching more than 520 villages. Communities contributed with free labor to defray about 20 percent of the total cost.

Box 3 : Lessons from Implementing the Pilot on Non Motorized Transport

- *Participatory planning is of the essence to mobilize support and identify the tracks for NMT improvement.* At a macro level, the demand for this non-motorized transport improvements has been large, but it may have not materialized in the absence of consultation with villagers through the participatory workshops held in 1996-1997. Beneficiaries and municipal authorities fully acknowledge the positive outcome of the pilot and the better service brought by the improved tracks. However, as noted by some of the NGOs involved in the pilot, municipal authorities were not aware of the priority of improving NMT tracks prior to the project. At a micro level, only the communities will be able to set priorities among the ample number of alternative routes that fulfill similar travel purposes.
- *Designing cost-effective NMT interventions requires an in-depth understanding of spatial patterns and travel behaviors at the community level and of the transport market for NMT services.* The specific purpose of these trips translate into well-established travel patterns. The trips concentrates on certain days of the week, and in some itineraries they are limited to certain times of the day --during early morning hours or even the night in those that because of their low altitude the weather may become too warm and harmful for people and animals. Night traffic implies removing those obstacles that porter animals will not negotiate in the dark. The size of the informal network may extend from three to five hours, to one or two days. As a *comunero* noted in one of the field visits, "we need to take our products to the various markets in the region, because otherwise we will crowd the local market and prices will plummet". As trips can take more than one day, improvements may need to include building *tambos*, where people can rest and store their goods during the longest trips. The lack of common roadside storage facilities is a major constraint for the development of an efficient intermodal transport system that combines farm-roadside non-motorized transport with roadside-market motorized transport,
- *The benefits of NMT improvements are clearly perceived by the communities, but are extremely difficult to quantify.* The benefits brought by the program so far include (i) improved safety for both people and porter animals, the most significant factor highlighted by the beneficiaries; (ii) reductions in travel times due to the removal of obstacles, which especially favors those who live farther away; and (iii) greater payloads with less damage to porter animals (which are valuable assets for these communities). The combination of the above induces more and farther multipurpose trips, and promotes increased agriculture and farming production for commercialization of surpluses. The impact of NMT improvements might be eroded if not done in combination with interventions to improve mobility along the rural road network that connects to them.
- *Traditional community structures have demonstrated capacity to carry out the works, but maintenance sustainability remains a concern.* Communities formed the "Comités Viales" to undertake rehabilitation works and look after the track afterwards. The Committees relied on ancestral structures to assign on a rotational basis the daily tasks and wages among workers. As beneficiaries had to contribute with at least 20 percent of the cost, workers were required to work for free during the Sunday *faenas*, and only those who had participated in the *faenas* could undertake paid work. In some cases, committees expanded at their own initiative the targets set under the contracts. (In Miska, for example, the community rehabilitated 0.9 km of tracks at their own cost, which represents a 20 percent increase over the contract target and more than 15 days of free work). Communities, when properly organized, can better connect the benefits of improved access with their day-to-day needs, and even grasp the concept of "transport network" to maximize impact. Strengthening community-based organizations enabled the community to jump-start other development initiatives. On the contrary, the committees in general have failed to maintain the improved tracks on a continuous basis, as maintenance work is not paid for under the project.

The program has helped rebuild social capital (Box 4). Villagers value the technical and organizational skills acquired through the program. The use of NGOs with established credibility among villagers enhance side social effects, which often are central to attacking the multidimensional problems behind poverty.

Box 4. Rebuilding Social Capital in Remote Communities

OTAR (*Oficina Técnica de Apoyo Rural*), an NGO located in Ayacucho, was chosen by PCR to develop the non-motorized component in Sacsamarca. The region was desolated by more than ten years of political violence. OTAR points out that one of the most devastating aspects of terrorism was the weakening of the communal ancestral organization, hindering its capacity to plan and carry out "community projects". The formation of the nine *Comités Viales Rurales* (CVR) to undertake the planning, execution and maintenance of the works for rehabilitation of the non-motorized tracks supports this ancestral form of organization. The CVRs have demonstrated capacity to carry out drainage improvements, widen platforms, build retaining walls and small bridges, and remove obstacles using explosives if necessary. According to OTAR, by reinforcing the ancestral organizations the CVRs have also jump-started other community projects that were common practice in the past but were abandoned because of political violence.

One of the CVRs is "Virgen de Encarnación", who was responsible for carrying out the improvements of about 17 km of NMT tracks, linking Sacsamarca with Colcabamba and Asca-Palca. The CVR comprises 35 members, with a good representation of women. The tasks performed by OTAR to assist the community in designing the works and establish the CVR included: (i) introducing the project objectives and team to local and provincial authorities, through a coordination meeting; (ii) inspecting the tracks pre-selected by the community for improvement based on local priorities; (iii) inviting the whole community for the organization of the CVR, through written communications and direct invitation; (iv) selecting the members of the CVR taking into account the number of workers needed for the job (technical aspect), the number of communes that are served by the track, and the number of workers in each commune. The selection process assigns quotas by commune to ensure adequate representation; (v) organizing the CVR. Villagers democratically appoint members to the CVR, elect its authorities, and pick a name (an important aspect), and approve its charter and operation procedures. Usually, elected authorities invoke God's guidance in discharging their responsibilities and assume a strong commitment in front of the community; and (vi) training the CVR in organizing and delivering the works. All the above tasks were performed in Qechua.

The NMT Component under the Second Phase of the RRP. The proposed project will expand the NMT improvement program, incorporating the lessons learned through the pilot. As noted in Annex 2, the scope of the work entrusted to the NGOs engaged in the program would be broadened to enhance the impact of the planned interventions within the community and build social capital to facilitate cooperation between community members and more dynamic networks of markets and local institutions. The second phase would explore options to strengthen the sustainability of these interventions, putting in place more reliable arrangements for continued track maintenance by the community. Traditionally the only maintenance performed on most NMT paths is through "minkas" (community work) which is done only once or twice a year and is obviously insufficient to keep tracks in good condition. The Committees --a sort of a board of users in charge of carrying out or organizing the works--have generally not been able to mobilize community resources to undertake track maintenance in a more systematic way as initially expected. The most frequent reasons for not maintaining the tracks mentioned by the focus groups consulted during the impact study include the lack of financing (93 percent of responses), the inability of the committee (64 percent), the population's unwillingness to work for free (11 percent) and the lack of cooperation from local government (3.6 percent). Put simple, community tracks do not escape the problems typically attributed to public goods -that is, although having roads in good condition benefits everyone, nobody is willing to participate unless everybody else does it or one receives some sort of compensation for the work. The project will explore how to best engage local governments in organizing and supporting the community's maintenance work and put in place some incentives for a more systemic response of the community.

Measuring Impacts to Better Understand Poverty

As part of a series of evaluation studies, PCR hired Cuanto --a think-tank NGO well-known in Peru for its extensive experience in LSMS studies--to perform a comprehensive assessment of the outcomes of the first phase of the RRP. The evaluation of the impacts of the RRP was undertaken through a series of interviews and surveys carried out during the month of March 2000 over a representative sample of roads and tracks improved by the project and of similar others without interventions from the project (control areas).² The study included about two thousand families located in the twelve departments where the project was implemented. The evaluation measured the possible changes in the values of a variety of socio-economic and transport-related variables about two years after the completion of the rehabilitation projects and compared the changes in those conditions between the rehabilitated projects and other similar rural roads (the control sample) that have not received interventions from the RRP but that may or may not have had interventions from the government. For the control sample, it was assumed that quantitative conditions (e.g., production variables) were similar to those in the areas in the project. More details on the sampling guidelines are given in Box 5. The impact indicators analyzed, and the population's perception as to the extent or magnitude of the RRP distinct impact items, generally coincide. Table 6 summarizes the indicators analyzed with the initial hypothesis to be tested and the trends and size of the impacts measured through the survey.

Box 5: An Economic, Social, Environmental and Institutional Evaluation of the RRP	
<i>The Study Sample in a Snapshot.</i> The technical guidelines used to compose the sample are summarized below:	
- Road Universe:	319 roads for wheeled vehicles 261 non-motorized transport tracks/paths
- Random sampling for rehabilitated roads for wheeled vehicles and improved bridle paths.	
- Scope of the study	Twelve departments distributed in four regions.
	Northern Highland = Cajamarca
	Central Highland = Ancash, Huancavelica, Huánuco,
Junin	
	and Pasco
	Southern Highland = Apurímac, Ayacucho, Cusco, Puno
	Jungle = Madre de Dios, San Martín
- Non random sampling for control roads and tracks, sample selected based on "comparability" with sample roads.	
- Number of sample roads:	74 roads for wheeled vehicles and 16 bridle paths
- Number of control roads:	74 roads for wheeled vehicles and 16 bridle paths
- Number of communities surveyed:	381 (at the beginning and at the end of both sample and control roads)
- Number of focus groups performed	381 (one in each locality)
- Average focus group participants:	5 people (including authorities, local leaders, and representative citizens).
- Number of households surveyed:	2,038
- Level of confidence of estimates:	92,5%
- Maximum error allowed:	No more than 10%
- Field survey completed in:	March 2000

Table 6: RRP Impact Summary

<i>Sector</i>	<i>Indicator</i>	<i>Type</i>	<i>Term</i>	<i>Hypothesis</i>	<i>Impact at End Phase I</i>
<i>Transportation</i>	Travel time	Direct	Short	Decrease	High
	Traffic rate	Direct	Short	Increase	High
	Fare prices	Indirect	Short-Medium	Decrease	Moderate-High
	Freight prices	Indirect	Short-Medium	Decrease	High
	Road closure	Direct	Short	Decrease	Moderate
	Reliability of public Transport	Indirect	Short-Medium	Increase	Moderate-High
<i>Access To Public Services</i>	N° School Registered Children	Indirect	Medium-Long	Increase	Low
	N° of Consultations	Indirect	Short-Medium	Increase	Moderate
	N° of Judicial Causes	Indirect	Short-Medium	Increase	Null
<i>Productive Activities</i>	Farmed Land Area	Indirect	Medium	Increase	Low
	Land value	Indirect	Medium	Increase	Null
	Productivity	Indirect	Medium	Increase	Null
	Livestock ownership	Indirect	Medium	Increase	Moderate
	Farm prices	Indirect	Short-Medium	Increase	High
	Crop allocation	Indirect	Medium-Long	Variation	Null
	Market-oriented produce	Indirect	Medium	Increase	Null
	Access to the marketplace	Indirect	Short-Medium	Increase	Moderate
	Access to credit	Indirect	Medium-Long	Increase	Low
	N° and income of com. Estab.	Indirect	Medium	Increase	Low
<i>Employment</i>	Income structure	Indirect	Medium-Long	Diversification	Low
	Type of occupation	Indirect	Medium-Long	Variation	Low
	Occupation category	Indirect	Medium-Long	Variation	Null
	Productive activity	Indirect	Medium-Long	Variation	Null
	Agricultural Day's Wage	Indirect	Medium	Increase	Moderate
<i>Migration</i>	Labor Force structure	Indirect	Medium-Long	Variation	Low
	N° of migrants	Indirect	Medium-Long	Decrease	Null
<i>Poverty</i>	N° of returning migrants	Indirect	Medium-Long	Increase	Low
	Poverty Levels	Indirect	Long	Decrease	Null
<i>Institutionality</i>	N° of new institutions	Indirect	Short-Medium	Increase	Moderate
<i>Negative Impact</i>					
<i>Transportation</i>	N° of traffic accidents	Indirect	Short	Increase	Low
<i>Environment</i>	Use of soils	Indirect	Medium	Increase	Null
	Use of chemicals	Indirect	Medium	Increase	Null
	Deforestation	Indirect	Short-Medium	Increase	Low

Impact on Transport-Related Parameters. The survey shows substantial reduction in travel times (up to half) brought about by the rehabilitation works on both rural roads and NMT paths. This reduction tends to be higher the worse the initial condition of the infrastructure is. Also, travel time reductions on RRP rehabilitated roads compare favorably with the reductions achieved on "control" roads rehabilitated by other programs. These reductions had a threshold effect as their magnitude jump-started new transport services and significantly increased traffic volumes along the roads rehabilitated.

<i>Travel Time Reduction</i>	<i>All RRP Roads</i>	<i>All Control Roads</i>	<i>Rehabilitated Control Roads</i>	<i>Matching RRP Roads</i>	<i>Non-rehabilitated Control Roads</i>	<i>Matching RRP Roads</i>
Travel Time – March 2000	81.4	59.3	60.9	71.8	53.8	79.6
Travel Time – Before RRP	155.4	79.9	91.6	145.6	59.8	140.8
<i>Percent variation</i>	<i>-47.6</i>	<i>-25.8</i>	<i>-33.5</i>	<i>-50.7</i>	<i>-10.1</i>	<i>-43.4</i>

Another variable that shows positive changes on an unambiguous manner is the reduction in transport tariffs for both passengers and freight, the more so if one takes into consideration the sizeable increase in the cost of vehicle fuel as a consequence of the increase in gasoline and diesel prices since the beginning of the RRP. This effect is more clear when comparing the roads surveyed with those of the control sample. In the latter, transport prices changed on a percentage more than double that for the rehabilitation roads under the RRP in nominal terms. The effect on transport prices was larger (i.e., larger decrease) for freight tariffs. In all, decreasing transport prices appear to reflect both lower vehicle operating costs and increased competition from an increasing number of providers. In the case of freight, it appears that the supply of trucks sometimes exceeds the demand and has forced prices to decrease at comparatively higher rate that that for other types of transport services.

<i>Passenger Fares By transport means (Adult fare in soles)</i>	<i>All RRP Roads</i>	<i>All Control Roads</i>	<i>Rehabilitated Control Roads</i>	<i>Matching RRP Roads</i>	<i>Non-rehabilitated Control Roads</i>	<i>Matching RRP Roads</i>
Car fare - March 2000	5.1	4.7	4.5	4.9	7.7	4.7
Car fare before RRP	4.5	3.5	3.5	4.4	4.3	3.3
<i>Percent Variation</i>	<i>13.9</i>	<i>33.5</i>	<i>28.2</i>	<i>11.6</i>	<i>76.9</i>	<i>40.0</i>
Minibus fare – March 2000	3.8	2.6	2.6	3.4	2.3	3.1
Minibus fare before RRP	3.4	2.0	2.0	2.9	1.5	2.9
<i>Percent Variation</i>	<i>12.8</i>	<i>33.6</i>	<i>29.4</i>	<i>18.8</i>	<i>49.5</i>	<i>8.4</i>
Bus fare - March 2000	4.6	3.8	4.2	3.5	3.5	4.9
Bus fare before RRP	4.1	3.1	3.2	3.3	3.0	4.8
<i>Percent Variation</i>	<i>12.9</i>	<i>19.5</i>	<i>29.0</i>	<i>6.5</i>	<i>16.8</i>	<i>1.0</i>
Truck fare - March 2000	3.7	2.8	3.2	3.1	2.6	5.1
Truck fare before RRP	3.4	2.2	2.5	2.9	2.3	5.2
<i>Percent Variation</i>	<i>9.0</i>	<i>23.0</i>	<i>26.5</i>	<i>4.9</i>	<i>12.8</i>	<i>-1.5</i>

<i>Freight Rates By transport means (Soles per kg)</i>	<i>All RRP Roads</i>	<i>All Control Roads</i>	<i>Rehabilitated Control Roads</i>	<i>Matching RRP Roads</i>	<i>Non-rehabilitated Control Roads</i>	<i>Matching RRP Roads</i>
Bus Freight – March 2000	0.052	0.043	0.049	0.034	0.054	0.029
Bus Freight before RRP	0.061	0.044	0.049	0.034	0.079	0.030
<i>Percent Variation</i>	<i>-14.815</i>	<i>-1.205</i>	<i>0.000</i>	<i>0.000</i>	<i>-31.746</i>	<i>-4.167</i>
Truck Freight – March 2000	0.032	0.035	0.032	0.038	0.026	0.032
Truck Freight before RRP	0.035	0.035	0.037	0.038	0.030	0.033
<i>Percent Variation</i>	<i>-8.657</i>	<i>-0.754</i>	<i>-12.121</i>	<i>0.549</i>	<i>-13.253</i>	<i>-3.261</i>

The reliability of transport services was seen as markedly improved in the RRP roads, with 68 percent reporting high good or good reliability, while only 28 percent expressed the same opinion for transport

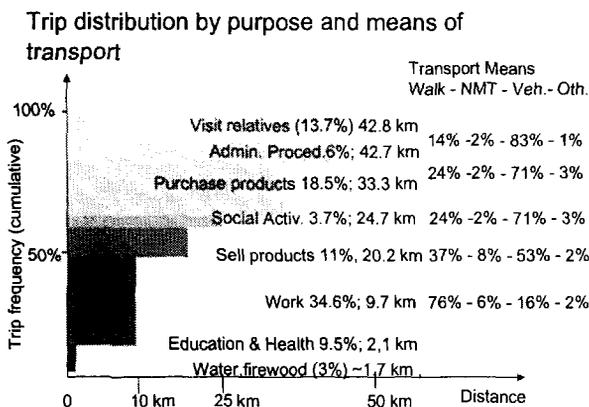
services on the control-sample roads.

<i>Users' Opinion on Reliability of Public Transport Services Along Rehabilitated Roads by Region (%)</i>										
<i>Level of Reliab.</i>	<i>Sample Roads Control Roads</i>		<i>Northern Sierra Sample Control</i>		<i>Central Sierra Sample Control</i>		<i>Southern Sierra Sample Control</i>		<i>Selva Sample Control</i>	
	High.	5.50	0.70	3.60		2.40		11.50	1.90	
Good	62.30	27.70	67.90	20.70	50.00	20.90	61.50	32.70	79.20	37.50
Little	26.70	52.70	25.00	69.00	38.10	44.20	21.20	50.00	20.80	54.20
Not. rel.	5.50	18.90	3.60	10.30	9.50	34.90	5.80	15.40		8.30

On a related matter that directly impinges in the quality and price of transport services, the surveys shows that the rehabilitation program has brought about a substantial decrease in the percentage of time the roads are not in passable condition. For the sample of roads under the RRP, the percentage of roads that are open to traffic every month of the year increase from 16 percent to 45 percent, and the percentage of the sampled roads that were occasionally impassable (e.g., during or immediately after a rain) for three or more months decrease from 62 percent to 31 percent. For the control sample, the changes were not noticeable, with only 20 percent of the roads with zero months of blocked conditions and above 58 percent with three or more months with the road closed (compared to 18 percent and 63 percent, before the beginning of the RRP). In this aspect, the activities of the maintenance micro-enterprises were instrumental in keeping the improved roads in the enhanced passable condition.

The survey shows the overall travel patterns of the population in the sample projects. Trip purpose was divided among work and non-work related activities (such as school and health-related trips, social visits, processing of administrative papers, buying and selling). The survey reports that about 30 percent of the trips are related to labor activities, and they are taken for a distance of about 10 km. Those for buying and selling agricultural products are next with about 24 percent of the trips and an average distance of between 20 and 33 km. Next come trips for education and health purposes with up to 20 percent of the trips. Trips for the purpose of visiting relatives and friends or attending social and communal activities represent another important part of the travel of the surveyed population (19 percent) with an average distance of 43 km, the largest among the several trip purposes (and about similar to the one for the processing of administrative papers, that represent about 4 percent of the trips). No changes to this split of trip purposes are reported in the impact survey after the completion of the RRP.

Most trips are undertaken by foot, with a decrease from about 52 percent to 46 percent after the implementation of the RRP in the sampled projects. Trips for work-related purposes are the ones with the largest percentage of walking mode and a less substantial decrease after the implementation of the RRP (from 78 percent to 76 percent), due mainly to the fact that are the ones with the shortest average distance. On the contrary, trip for social-oriented purposes or to process administrative papers show the smallest percentage of walking mode and decreases from 29 to 24 percent for the former and from 21 to 14 percent for the latter. Motorized forms of transport (motorcycles, automobiles, buses of various forms, and trucks) increased from 41 percent before the project to 48 percent after the project. NMT and others (e.g., boats) take the rest of the trips (about 6 and 7 percent after and before the project, respectively).



The change in modal split directly affects the reduction in travel times, with an average decrease of 20 percent. In general, the largest decrease takes place in those types of trips when there is a higher participation of motorized transport while the smallest increase (about 15 percent) correspond to work-related trips, which are the ones with the highest percentage of users travelling on foot. The improved roads also bring with them the possibility of increasing driving speeds and with this an increased number of accidents. The survey confirmed this hypothesis,

though when the increase in the amount of traffic is factored in the increase in the accident rate is not noticeable.

Impact on access to basic services. The survey does not show a significant impact on access to education, in terms of greater attendance, smaller drop-out rates, or higher enrollment of teachers. Interviews, however, do show an appreciable perception in the improvement of the quality of education through increased security in the movements of pupils and teachers, better punctuality of both of them, and an increase in extracurricular activities. The impacts are however noticeably positive in the case of access to health services. Travel times to/from health specialists (doctors, nurses, midwives, or pharmacies) show a substantial decrease in the project areas compared to the control areas, and for both rural roads and NMT tracks. And in terms of changes in the access to justice, the impacts have a mixed picture and one that is hard to evaluate. The number of cases reported to the police showed a substantial increase in the surveyed areas along the rehabilitated roads. These statistics seem to show that increase access also brings increased reporting of grievances but also, possibly, an increased in grievances that can occur with greater frequency by improved mobility of population (such as assaults and property damages).

<i>Access to Education (average per educ. center)</i>	<i>Rural Road Access</i>		<i>NMT Access</i>	
	<i>Sample</i>	<i>Control</i>	<i>Sample</i>	<i>Control</i>
<i>Students Registered</i>				
In 1999	204.5	194.5	158.1	141.2
Before RRP	195.7	186.4	151.4	144.8
<i>Percent Variation</i>	4.5	4.3	4.4	-2.5
<i>Dropouts</i>				
In 1999	17.6	18.5	15.2	11.4
Before RRP	17.7	17.1	14.7	14.6
<i>Percent Variation</i>	-0.5	8.5	3.0	-21.7

<i>Access to Health (average per heath. center)</i>	<i>Rural Road Access</i>		<i>NMT Access</i>	
	<i>Sample</i>	<i>Control</i>	<i>Sample</i>	<i>Control</i>
<i>Number of Visits</i>				
In 1999	1,801	1,469	2,536	1,531
Before RRP	1,504	1,270	2,371	1,386
<i>Percent Variation</i>	19.74	15.60	6.96	9.87

<i>Population's perception of the influence of RRP on Health Issues (%)</i>	<i>Road Access</i>			<i>NMT Access</i>		
	<i>Positive</i>	<i>Negative</i>	<i>None</i>	<i>Positive</i>	<i>Negative</i>	<i>None</i>
On infrastructure and equipment	70	3	27	40		60
On number of attendances	90	1	9	50	20	30
On health personnel's willingness (appearance, mood)	76	4	20	60	10	30
On Timely Attendance (Emergencies)	91	2	7	70	10	20
On Increased Access To Medicines	77	2	21	50		50
On Greater Specialization	82	1	17	50		50

<i>Population's perception of the influence of RRP on Educational Issues (%)</i>	<i>Road Access</i>			<i>NMT Access</i>		
	<i>Positive</i>	<i>Negative</i>	<i>None</i>	<i>Positive</i>	<i>Negative</i>	<i>None</i>
On school infrastructure	55	5	40	31		69
On reduction of student absenteeism	59	3	38	45		55
On teachers' willingness/rapport (appearance/mood)	69	3	28	45		55
On students' performance (mood/concentration)	53	3	44	31	7	62
On teacher recruiting	63	3	34	48	3	49
On the execution of extra-curricular activities	71	3	26	38	7	55
On female teachers' safety when traveling	79	1	20	62	3	35

Aside from education, health and other public services, the survey reports that those areas served by the RRP projects enjoy an increased number of government-sponsored programs than those in the control sample. This may corroborate the hypothesis that improved access facilitates the delivery of other programs, and in the long term a project like the RRP could also facilitate the coordination and implementation of a comprehensive package of investment programs, maximizing the combined impact in a particular rural area.

Impact on economic activities. The survey does not show noticeable changes to economic production activities. Given that projects were completed less than two years before the survey was taken, it might be the case that the possible impact of the rehabilitated roads on economic activities has not materialized yet. Variables such as value of the land, productivity, number of heads of livestock, prices of agricultural products, do not show a significant positive trend that can be assigned to the advantages of better access. There appears to be a tendency to shift crops to the production of more profitable ones and away from more traditional crops such as potatoes, but the figures are not conclusive. In terms of the commercialization of products and in the possibility of moving from production for subsistence to production for export (outside the area of production), the survey shows a mixed picture as for some products (wheat or corn) there appears to be a less than significant proportion of production commercialized outside the local area, while for others the difference appears to be either not noticeable or with an increased proportion of the production exported outside the area.

In terms of the marketing techniques, it appears that the rural producers in the areas where the RRP was implemented had a better edge in holding their products in anticipation of higher prices, but the difference (31 vs. 27 percent) appears not to be statistically significant. Other aspects, such as when the price is determined, how often they change their intermediaries, or how they pay (credit or cash), both the RRP and control samples report almost exactly the same answers. The number of rural producers in local fairs however increased (by 13 percent) in the sample of the RRP roads while it decreased (by 5 percent) in the sample of control roads. The survey shows that the rehabilitated roads helped diversify productive activities and move away from the traditional sectors and into other more income-rewarding activities with higher value added, helping also spread risks across them. A discernible positive difference is shown in the

perception of the population in the RRP areas compared to the control areas that income is now more stable (from either agricultural or other economic activities) and higher. However, the analysis of the structure of employment does not show a significant difference between the RRP rehabilitated roads and the control roads. Interestingly, focus groups composed by RRP beneficiaries were much more positive, compared to control groups, about the increased stability of their income after the roads were rehabilitated.

<i>Rural Family Income Structure As Measured by Survey - (%)</i>	<i>Rural Road Access</i>		<i>NMT Access</i>	
	<i>Sample</i>	<i>Control</i>	<i>Sample</i>	<i>Control</i>
<i>Total Income</i>	100	100	100	100
Agricultural income	47.2	50.9	40	46.5
Sub-agricultural income	1.5	1.4	1.8	0.9
Livestock income	29.2	30.1	41.7	36.1
Livestock sub-product income	8.1	4	5.7	1.9
Timber/forestry income	0.6	1.4	0.2	0.4
Income from other activities	5.1	3.7	3.3	4.3
Income from equipment renting	0.3	1	1.8	1
Income from land renting	0.6	0.6	1.2	0
Income from money transfers	6.4	5.8	4.2	7.8
Other income	1	1	1.2	1.1

<i>Focus groups opinion on current Income compared to pre-rehabilitation period (%)</i>	<i>Road Access</i>		<i>NMT Access</i>
	<i>RRP</i>	<i>Control</i>	<i>RRP</i>
<i>Agricultural income is now more stable/reliable</i>	100.0	100.0	100.0
Yes	36.4	32.1	26.6
No	29.2	24.7	44.8
Same	26.8	38.3	23.1
Don't Know.	7.6	4.9	5.6
<i>Income from other activities is now more stable (reliable)</i>	100.0	100.0	100.0
Yes	32.0	22.2	19.3
No	29.8	24.7	40.7
Same	28.7	44.4	26.4
Don't Know.	9.5	8.6	13.6
<i>Total income is now more stable (reliable)</i>	100.0	100.0	100.0
Yes	28.6	21.0	16.7
No	28.0	25.9	33.3
Same	32.2	42.0	28.3
Don't Know.	11.2	11.1	21.7
<i>Total income is now higher</i>	100.0	100.0	100.0
Yes	26.5	16.3	13.8
No	29.6	28.8	35.5
Same	33.5	43.8	28.3
Don't Know.	10.4	11.3	22.5

On another account, the survey reports that the maintenance micro-enterprises facilitated the creation of new employment and had a incipient multiplying effect in the generation of non-farm employment, with a significant effect in spurring the local economy.

Regarding access to credit, after road rehabilitation, about 7 percent of farmers along RRP roads and about 11 percent of farmers along control roads requested credit. In both cases, about 90 percent of all these requests received credit. With respect to RRP roads, about 12 percent received credit from a private bank, about 6 percent from a NGO, about 6 percent from FONCODES, and about 66 percent from informal

sources (relatives, etc.). As for farmers served by control roads, about 4 percent received credit from a private bank and about 2% from a rural bank, about 13 percent from NGOs, about 7 percent from FONCODES, and about 65 percent from informal sources. These figures suggest that farmers along RRP roads had more access, albeit incipient, to formal financial institutions such as private banks and rural banks, and reaffirm the potential not yet fully exploited under the RRP of networking with NGOs to enhance communities' access to financing.

Regarding migration, the survey shows that in percentage terms the number of people who migrated after the roads were rehabilitated was similar (somewhat slightly higher) between the project roads and those of the control sample. However, in the case of the former, employment factors had a much greater weight in the decision to migrate, and they did it less to Lima than in the control sample, reflecting perhaps the better opportunities opened by the improved road to work in the proximity of the original living area (and of coming back with more easiness). The number of people returning to the area is also slightly higher for RRP roads. These findings reinforce the notion of migration as an element of Andean livelihood strategy, critical to the viability of rural peoples' livelihoods rather than an indicator of non-viability, as often interpreted. It is generally a merely survival strategy, although in some cases migration may become part of an accumulation strategy. Where agricultural intensification has been limited and other rural employment absent, the principal livelihood adaptation has been temporary or permanent migration and the Andes is full of projects that have attempted and failed to stop this out-migration. However, if migration to urban areas offers the potential for welfare gains (rural populations continue to have lower levels of income and they lack access to basic services), new forms of urban poverty have emerged since the urban poor may be more vulnerable to economic instability due to their lack of assets: unlike the rural poor they have no access subsistence production during periods of unemployment. The survey findings suggest that migrants from the rural Sierra have not broken their connection with the communities of origin and that remittances, either in cash or kind, work both ways --to and from the rural households, as part of a strategy for families and kin networks to build a sustaining livelihood and cope with harsh economic conditions.

<i>Remittances in last 12 months by Poverty Level and Region (S./)</i>	<i>All Regions</i>	<i>Northern Sierra</i>	<i>Central Sierra</i>	<i>Southern Sierra</i>	<i>Selva</i>
<i>To Rural Household</i>					
Total	388.6	342.9	558.6	249.3	617.2
Extreme Poor	292.6	163.5	409.9	321.8	367.2
Non-extreme Poor	372.8	249.1	537.5	181.5	809.5
Non-Poor	493.6	763.5	641.5	230.3	475.1
<i>From Rural Household</i>					
Total	279.4	370.0	289.1	146.9	597.3
Extreme Poor	105.5	17.4	264.5	57.2	91.7
Non-extreme Poor	140.4	158.6	128.1	56.8	374.0
Non-Poor	429.7	809.8	357.1	231.4	922.9

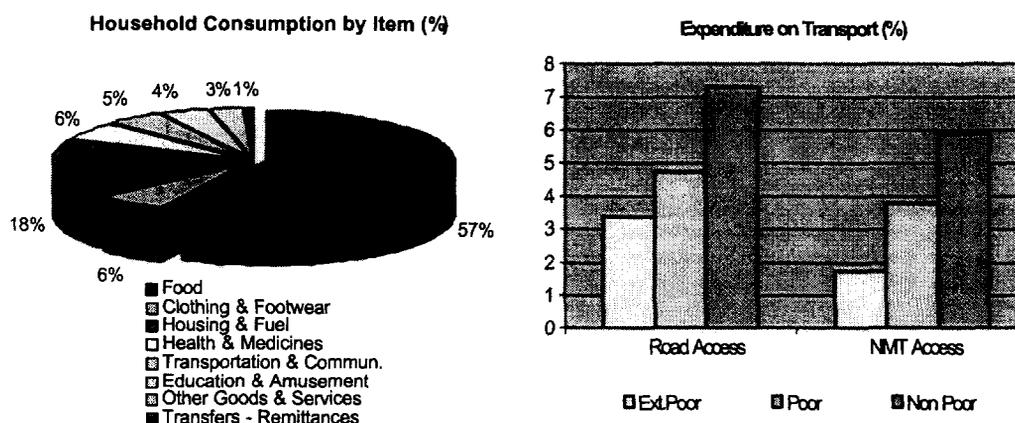
Making a livelihood with less than \$1 a day. Table 7 shows average household expenditure levels per day, grouped by type of access and region for households in the project area belonging to the sample of RRP beneficiaries or composing the control sample. Poor or non poor, household expenditures in the project area are very low. The quality of access and the proximity to markets matters. For households located in villages with NMT access only, household expenditures are on average between 76 and 97 percent of those in villages that benefit from road access. Similarly, household expenditure are slightly higher for those living closer to the beginning of the road (as opposed to those living towards the end).

Table 7: Average Household Expenditure per Day by Region and Type of Access

<i>TYPE OF ACCESS</i>	<i>TOTAL</i>	<i>Project Beneficiaries</i>			<i>Control Sample</i>		
<i>Household Poverty Level</i>	<i>Project</i>	<i>All</i>	<i>Road</i>	<i>Road</i>	<i>All</i>	<i>Road</i>	<i>Road</i>
<i>Geographic Domain</i>	<i>Area</i>	<i>Benef.</i>	<i>Begin.</i>	<i>End</i>	<i>Control</i>	<i>Begin.</i>	<i>End</i>
TOTAL	5.4	5.5	5.7	5.3	5.4	5.7	5.1
Total	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Extreme Poor	4.5	4.5	4.5	4.5	4.5	4.6	4.4
Poor	8.9	9.2	9.3	9.2	8.6	8.6	8.5
<i>RURAL ROADS</i>							
Total	5.5	5.7	5.9	5.5	5.4	5.7	5.2
Extreme Poor	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Poor	4.5	4.6	4.6	4.5	4.6	4.7	4.4
Non-Poor	9.1	9.5	9.5	9.6	8.6	8.6	8.6
<i>Northern Highlands</i>	6.0	6.4	6.6	6.2	5.7	6.2	5.1
Extreme Poor	2.7	2.6	2.5	2.6	2.8	3.1	2.6
Poor	4.6	4.6	4.6	4.6	4.7	4.6	4.8
Non-Poor	10.7	11.5	11.2	11.7	9.4	9.3	9.4
<i>Central Highlands</i>	5.5	5.7	5.9	5.5	5.5	5.4	5.6
Extreme Poor	2.5	2.4	2.4	2.5	2.5	2.3	2.8
Poor	4.3	4.4	4.6	4.1	4.4	4.7	4.0
Non-Poor	8.8	9.2	8.6	10.0	8.4	7.9	8.9
<i>Southern Highlands</i>	4.8	5.0	5.2	4.7	4.8	4.9	4.7
Extreme Poor	2.4	2.4	2.4	2.4	2.3	2.4	2.2
Poor	4.1	4.1	3.8	4.3	4.2	4.2	4.2
Non-Poor	8.2	8.7	9.4	7.9	7.9	7.9	8.0
<i>"Selva"</i>	6.3	6.4	6.4	6.4	6.3	7.2	5.4
Extreme Poor	2.9	2.8	3.1	2.6	3.0	3.2	2.9
Poor	5.3	5.5	5.5	5.4	5.1	5.4	4.9
Non-Poor	9.8	9.9	9.8	9.9	9.8	10.7	8.3
<i>NON-MOTORIZED TRACKS</i>							
Total	5.0	4.7	5.0	4.3	5.3	5.7	4.9
Extreme Poor	2.5	2.4	2.7	2.2	2.6	2.5	2.6
Poor	4.3	4.3	4.1	4.5	4.2	4.4	4.1
Non-Poor	7.9	7.2	8.1	6.3	8.4	8.6	8.2
<i>Northern Highlands</i>	6.1	6.0	6.2	5.9	6.2	6.1	6.2
Extreme Poor	3.0	3.1	3.2	2.8	2.9	2.9	2.9
Poor	4.9	4.6	3.0	5.2	5.1	4.6	5.6
Non-Poor	8.5	8.8	8.3	10.6	8.2	8.5	7.6
<i>Central Highlands</i>	5.7	5.4	5.8	4.9	6.1	6.6	5.6
Extreme Poor	2.8	2.8	3.2	2.4	2.7	2.5	2.8
Poor	4.5	4.5	4.3	4.7	4.6	4.9	4.1
Non-Poor	8.6	7.6	8.5	6.7	9.5	10.2	8.7
<i>Southern Highlands</i>	2.7	2.4	2.5	2.2	2.9	3.0	2.8
Extreme Poor	2.1	2.0	2.1	1.8	2.3	2.4	2.3
Poor	3.0	3.2	3.9	2.6	2.9	2.3	3.3
Non-Poor	3.8	3.1	3.4	3.0	4.3	4.3	4.5

Source: Instituto Cuánto. Encuesta Socioeconómica de Hogares, 2000.

The chart shows the average composition of household expenditures (for all households in the survey). Meeting food needs takes on average about 57 percent of the total household expenditure. This percentage is higher the poorer the household and the quality of access (e.g., about 68 percent in the case of extreme poor households located in villages with NMT tracks). Non-poor households spend much more, in both absolute and relative terms, on health/medicines and transportation than poor or extreme poor households do. The differences are significant; for example, expenditure incurred in health may on average represent about 3 percent for extreme poor households to about 9 percent for non poor households living, in both cases, in rural villages with road access. The trend is similar for expenditure in transportation (see chart). The latter finding suggests that as more income becomes available, households would allocate a greater proportion of their income to transportation and communication, to get better returns on their assets and/or meet perceived needs that had been suppressed for the lack of income opportunity.



Understanding Poverty Links: Household Assets and Livelihood Strategies. The dispersion of spending or income, as well as the probabilities of individuals and families of being poor or non-poor, depend on their stock of assets and its return or market price. Thus, identifying the critical amount and combination of assets needed to overcome poverty would give some insights on how to develop a more effective pro-poor rural development strategy. Using data from the impact evaluation study, Table 8 attempts to portray a profile of the rural households in the project area, showing for the three poverty categories of households --extreme poor, poor, and non-poor (according to poverty line criteria)--, their average endowment of public and private assets. What are the main determinants of poverty? The data stresses the significant variation in education attainments and their strong correlation with poverty levels, in spite of the fact that these attainments are still very low for all categories. Another important finding is that traditional agricultural assets can not explain the differences in poverty levels. On the contrary, the differences become more significant when capital and financial assets such as the accumulation of productive and durable goods, the value of transport equipment and access to credit, are considered.

Table 8: Households' Endowment of Public and Private Assets by Poverty Level

<i>Livelihood Assets by Category:</i>	<i>Household Poverty Level</i>		
	<i>Ext. Poor</i>	<i>Poor</i>	<i>Non Poor</i>
<i>Human Capital:</i> Family Size (No.)	6	5	4
Education of Household Head (years)	2.9	4.4	6.2
Education of rest of household (years)	3.2	4.3	5.4
<i>Natural Capital:</i> Livestock owned	25.9	21.4	29.7
Land per HH (median) (Ha)	1.0	1.5	1.6
Value per Ha (median) (S/.)	4,200	2,500	2,500
Value of farm plot (median) (S/.)	4,200	3,750	4,000
<i>Physical Capital:</i> Has Water in dwelling (%)	70	70	80
Has Electricity (%)	40	50	60
Has Sanitation (%)	10	10	20
Value of durable goods (S/.)	213	453	836
Value of productive goods (S/.)	165	156	391
Value of transport equipment (S/.)	340	586	1,263
<i>Social Capital:</i> Migration experiences per HH (No.)	0.3	0.4	0.5
<i>Financial Capital:</i> Access to credit	0	10	10

The analysis can also be centered on the distribution of assets rather than the poverty category of the respective households, clustering the households in the survey according to their endowment of assets. The data from the survey suggests three possible groups with statistically different endowments --with Group 1 having the lowest endowment and Group 3 the largest. The most significant assets for this classification -those that show statistically significant differences-- are as follows:

Most significant assets for grouping households (areas benefited by PCR I)

<i>Type of Asset</i>	<i>Motorized Roads</i>			<i>Non-motorized Tracks</i>		
	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>
Education of HH Head (years)	Medium	Low	High	Low	-	-
Education of rest of HH (years)	-	-	High	Low	High	Medium
Livestock owned	-	-	-	Medium	Low	High
Value of farm plot (S/.)	-	High	-	-	-	High
Has Water in dwelling (%)	Low	-	-	-	High	-
Has Electricity (%)	Low	Medium	High	Low	High	Medium
Has Drainage (%)	-	-	High	-	High	-
Value of durable goods (S/.)	-	-	High	-	High	-
Value of productive goods (S/.)	-	Low	-	-	-	High
Value transport equipment (S/.)	-	-	High	Low	-	-
Communal Activities (%)	-	-	High	-	-	High
Access to credit (%)	Medium	Low	High	-	-	High

Table 9-A shows the asset distribution for the three groups established within the sample of households benefited by the RRP. A similar table can be composed for the three groups established within the sample of households belonging to the control sample (Table 9B not shown). The data shows that the incidence of poverty declines as the endowment of assets increases, which is quite obvious. More striking is the finding that even within the group with the largest stock of assets poverty is still widespread. This makes important to look in more detail at the varying types of livelihood strategy that are emerging in the Andes, in order to understand the types of resource access, capability enhancement and political economic factors upon which they have been based, and the conditions under which they may become more sustainable and more poverty alleviating (the two are not necessarily the same). The data reinforces the notion that the ways in which people compose rural livelihoods in the Andes are multiple and increasingly they have a very significant non-agrarian component. These assets are not simply resources that people use in building

livelihoods. The environment that an income earning strategy helps build (or destroy) and the social networks it helps create (or weaken), in turn affects any subsequent income earning activity. The different capitals are thus not only inputs to livelihoods and development strategies --they are also outputs. Their changing composition must be considered not only in sustainability terms but also in poverty terms.

Table 9-A: Household Groups by Their Endowment of Assets - RRP Beneficiaries

Type of Asset	Type of access:					
	Motorized Roads			Non-motorized Tracks		
	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
<i>Human Capital</i> : Family Size (No)	5.00	5.02	5.01	5.04	5.12	4.64
Education of HH Head (years)	3.22	2.48	9.77	2.32	5.06	3.27
Education of rest of HH (years)	2.76	2.60	8.62	2.32	5.93	3.75
<i>Natural Capital</i> : Livestock owned	25.13	21.95	37.68	25.24	13.10	82.63
Land per HH (median) (Ha)	1.8	1.1	1.5	1.1	1.0	1.5
Value per Ha (median) (S/.)	1,800	3,333	3,871	4,333	2,500	3,060
Value of farm plot (median) (S/.)	3,240	3,667	5,806	4,767	2,500	4,590
<i>Physical Capital</i> : Has Water in dwelling (%)	3	100	95	34	98	36
Has Electricity (%)	20	34	84	3	92	5
Has Drainage (%)	4	5	40	0	26	0
Value of durable goods (S/.)	274	257	1,143	138	734	165
Value of productive goods (S/.)	254	88	387	33	35	148
Value transport equipment (S/.)	511	412	1,512	452	1,447	1,002
<i>Social Capital</i> : HHs. Receiving remittances (%)	24	21	16	30	4.0	18
Social programs accessed (No.)	4.0	4.7	3.8	4.0	3.8	2.8
HHs access 3+ programs (%)	69	74	63	65	62	50
Communal Activities (%)	3	3	7	0	0	41
Social Activities (%)	9	7	10	10	0	5
<i>Financial Capital</i> : Access to credit (%)	6	3	12	4	2	9
No. of households	265	441	293	79	50	22
Poor households in group (%)	74.7	73.5	44.4	74.7	56.0	50.0
Extreme poor HH in group (%)	37.0	43.3	17.4	48.1	16.0	31.8

Is the RRP attacking rural poverty? In all, the survey showed not significant changes in the poverty levels of the rehabilitated sample compared to the control sample, although there appears to be a tendency to improved living conditions (such as availability of potable water, lighting, or communal facilities) or availability of goods (such as televisions, tractors or bicycles) for households in the RRP sample. This suggests that conditions might be improving, but yet they are not reflected in the poverty categories. A comparison of poverty rates --i.e., the percentage of the population living in households with a per capita consumption below the poverty line-- shows similar results between households benefited by the RRP and those who compose the control sample, though slightly lower in the control group. The depth of poverty is also very similar, though slightly higher for the RRP sample, compared to those in the control sample. The depth of poverty is measured by the poverty gap index, which estimates the average distance separating the poor from the poverty line as a proportion of that line):

Incidence of Poverty (% of population bearing poverty)	Road Access		NMT Access	
	RRP	Control	RRP	Control
TOTAL	100.00	100.00	100.00	100.00
Total Poor	69.23	68.29	73.15	70.10
• Extremely poor	38.04	36.18	42.99	36.86
• Not extremely poor	31.19	32.12	30.16	33.25
Not poor	30.77	31.71	26.85	29.90
Poverty Gap (%)	28.47	26.95	28.92	26.17

However, clear indications of the positive impact of the RRP on rural poverty emerge from the analysis of the survey data and its comparison with recent poverty data in Peru:

- An analysis based on the initial endowment of public and private assets for households in both the RRP and the control samples, suggests that although "control roads" were carefully selected to ensure they served areas with characteristics essentially similar to those of the sampled "RP roads", still there were differences in the level of assets owned by households in each sample. Control groups had a better endowment of certain assets: a greater percentage of households in the control group have access to electricity, own on average almost 1 hectare more of land, and their other productive assets have 50% more value than those of the households in the project sample. Something similar happens with the rates for extreme poverty. However, if a statistical analysis is performed controlling for the different possession of assets by the respective households, the net effect of the project is a reduction of the poverty rate in 1.22 percentage points for households with access to motorized roads and 0.66 percentage points for those with access to NMT paths. The impact is greater when dealing with extreme poverty: the rate of extreme poverty falls as a result of the project in 1.66 percentage points and 2.65 percentage points for households with access to motorized roads and NMT paths respectively. Although these are not dramatic impacts, they are within the range that could be expected in a context where the impacts are usually of a long term nature.
- Furthermore, when measured up to recent poverty data in Peru, it appears that the project did have a noticeable impact in arresting the increase in poverty rates that has taken place in Peru between 1997 and 2000. A recent survey shows that between those two years, overall poverty increased from 51 percent to 54 percent.⁴⁷ This appears to show that the project may have at least prevented a further deterioration of poverty indicators in the RRP areas.

In sum, the impact survey shows a discernible support for the RRP as expressed by the interviewed population and the benefits perceived by them. The major --most immediate impact--appears to focus on travel conditions and the possibilities it brings about to increase social relationships and access to markets, health services, and educational facilities. The surveys however does not provide a clear and conclusive evidence that the rehabilitated roads have brought about substantial economic development (as reflected in better terms of trade or increases in agricultural and livestock production) or poverty reduction. In spite of the fact the survey includes a control sample (to which the same overall, broader country and worldwide impacts should apply), the results appear to show that the project has initiated the improvement of the livelihood of local conditions during a period where countrywide poverty indicators worsened. In all, the project, if sustained, should produce more noticeable impacts on poverty and economic development indicators.

Social Assessment: A Continuous and Evolving Process

The purpose of the social assessment is to analyze how the RRP interventions affect and will affect the people living in the project area, and how, in turn, they will affect the project outcome. In the context of the RRP, the social assessment has become a continuous and evolving process where the monitoring of project social indicators not only provides timely feedback but the basis for identifying studies and assessments sharply focused on social issues. The chart below describes this process, the specific issues being addressed and the various instruments used for this purpose, using the framework of the four pillars of social assessment. The social assessment is a joint effort between PCR's Social Promotion Unit, NGOs already involved in the project (e.g., Cuánto and Centro), a team of consultants (comprised of a research economist from GRADE, an anthropologist and a social scientist) funded through Social Compact Funds, and the IDB-Bank team . The paragraphs below briefly discuss some of the activities carried out in the

context of the social assessment and their outcomes.

Social Assessment an evolving process			
Pillars	Preparation	Implementation	Evaluation Appraisal 2nd Phase →
Social Issues	<ul style="list-style-type: none"> •Targeting (SC) •Eligibility Criteria (SC) •Compensation (SC) 	<ul style="list-style-type: none"> •NMT-Social Ass (CS) 	<ul style="list-style-type: none"> •Stakeholder Consultation [SC] •Participatory Workshops [PW] •Case Studies [CS] •Evaluation Studies [ES] •Pilot [P] •"Selva" Exploratory Ass. (ES)
Institutional Org. Issues	<ul style="list-style-type: none"> •PCR:Skills, Units (SC) •Project design (P) • Industry response (P) 	<ul style="list-style-type: none"> •Coordination with other programs (SC) •ME-Assessment (ES) 	<ul style="list-style-type: none"> •MCM-w/local authorities (PW) •Partnership for LDW (PW)
Participation Framework	<ul style="list-style-type: none"> •Basic Needs (PW) •Ownership and Maintenance (PW) 	<ul style="list-style-type: none"> •Needs Prioritization 	<ul style="list-style-type: none"> •CDF-"Selva" Pilot (PW) •Participatory Ass. and Stakeholder Analysis (ES)
Monitoring & Evaluation	<ul style="list-style-type: none"> •Log-Framework (SC) •Operation Manual (SC) •Performance Audit (SC) 	<ul style="list-style-type: none"> •Side effects during construction (Kiteni) (CS) •Gender Impact Ass. (CS) 	<ul style="list-style-type: none"> •Impact Evaluation (ES) •Participatory Eval. (Learning ICR) (PW)

Strengthening Participatory Mechanisms and Social Inclusion. The review of participation mechanisms used during the first phase of the RRP, enriched with the findings of the various studies described in this section, enabled the identification of strategic and operational recommendations to enhance the participatory dimension of the second phase and to better reach vulnerable groups. Moreover, the participatory workshops held with the municipalities in 2000 were crucial to designing the MCM. The constraints that would have prevented municipalities from making their contributions under the MCM were identified and their removal became a key element in project design. Box 4 in the main text briefly presents the purpose of the various participatory mechanisms used under the RRP. In a nutshell, consultation and participatory workshops during implementation of the first phase attempted to: (i) assess transport needs and understand poverty links as perceived by the communities; (ii) confirm with beneficiaries the priority of works and the commitment to their maintenance; (iii) validate designs and include local solutions; (iv) mobilize local government support for road maintenance financing and institutional building; (v) provide local governments with necessary information about the project and their roles; and (vi) identify the specific needs of vulnerable groups (e.g., women, indigenous groups settled in the three locations where the pilot on River Transport Improvement will be implemented).

Stakeholder analysis has evolved during implementation, as the project creates new stakeholder groups, changes relationships between groups. In some cases project implementation has made evident existing distrust/tension among groups (e.g., intra-village, between levels of government) or even spurred conflict/uneasiness among other agencies that are not the target of the RRP. Table 10 presents a summary of the stakeholder analysis and outreach strategy for the second phase of the RRP. The various groups have been rated (i.e., high, medium, low) in accordance with their importance for the project (e.g., targeted groups) and influence on the project outcomes (e.g., control over project outcomes). PCR has established a strong Social Promotion and Institutional Development unit (one of the three main branches of PCR), which is conveniently supported with staff in the field and works in close cooperation with NGOs.

Table 10: Stakeholder Analysis and Outreach Strategy

<i>Stakeholder Identification</i>	<i>Importance</i>	<i>Interest/Issue</i>	<i>Influence</i>	<i>Participation Strategy</i>
<i>Congress</i>	H	<ul style="list-style-type: none"> Decentralization agenda. Support Co-financing Mechanism for Maintenance. 	H	<i>Collaboration</i> : lobby (PCR/Majors)
<i>MEF</i>	H	<ul style="list-style-type: none"> Overall funding to MTC and disbursement authorization. Approval Co-financing Mechanism. Support fiscal decentralization 	H	<i>Collaboration</i> : enhance working relationship through OPLA-ODI
<i>MTC</i>	H	<ul style="list-style-type: none"> Fund allocation within sector. Support maintenance of road network in project area Issuing regulations (road functional classification) Potential tension with middle managers 	H	<i>Collaboration</i> , through Executive Committee (Vice-Minister) and OPLA-ODI; inform progress.
<i>DGC-SINMAC</i>	M	<ul style="list-style-type: none"> Maintenance of sec. roads Competition from their force account arrangements. Potential uneasiness 	M	<i>Consultation</i> : coordinate annual programs, monitor compliance with programs
<i>PRONAMACH FONCODES – INADE</i>	M	<ul style="list-style-type: none"> Coordination of complementary interventions in project area 	M	<i>Consultation</i> : sign Collaboration Agreements; share information
<i>CTARs</i>	L	<ul style="list-style-type: none"> Maintenance of secondary roads. Potential change in role in the event of decentralization. 	L	<i>Consultation</i> , through PCR’s regional units
<i>Consultants & Contractors</i>				
	Large	L	<ul style="list-style-type: none"> Lobby against project at time of fiscal constraints for not being targeted. 	M <i>Information Sharing</i> : explain project goals to minimize risk
	Small	M	<ul style="list-style-type: none"> Delivery of services. Capacity to work with municipalities. 	M <i>Information Sharing and Consultation</i> : update roster of local firms for limited NCB; provide training, information on equipment rental.
<i>NGOs</i>		H	<ul style="list-style-type: none"> Delivery NMT program. Building communities’ social capital. Partnering for complementary action. 	M <i>Information Sharing</i> : disseminate project goals and opportunities, train NGOs in productive activities/microfinance. <i>Participation/Empowerment</i> : seek synergies through Local Development Window, establish partnerships
<i>Municipalities</i>				
	Majors not benefited by project	M	<ul style="list-style-type: none"> Pressure to expand project deviating attention from poor. Pace of decentralization 	M <i>Information Sharing</i> : explain goals/phases of Rural Roads Program; offer support on technical grounds
	Majors benefited by project	H	<ul style="list-style-type: none"> Support for maintenance co-financing mechanism and micro-enterprise program, Involvement in institutional building/technical assistance. Participatory screening of projects. Cooperation between districts 	H <i>Collaboration</i> : sign Participation Agreements with provinces and “ <i>Encargo Presupuesta</i> ” for MCM; monitor compliance with participatory process in MOP, demand-driven TA program, and graduation program

<i>Micro-enterprises</i>	H	<ul style="list-style-type: none"> Quality of maintenance. Employment opportunities in the community for non-members of micro-enterprise. Sustainability of productive activities. Community support eroded with time for lack of opportunity Potential women exclusion issue. 	H	<i>Participation/Empowerment:</i> expand participatory evaluation of program, review selection criteria and operational procedures to encourage women participation, fine-tune training component, enhance dialogue with local authorities, encourage community action and joint-ventures to enhance sustainability of productive activities <i>Consultation:</i> mitigate side effects of cost reduction and design exit strategy (competition for market)
<i>Rural Committees</i>	H	<ul style="list-style-type: none"> Participatory screening of tracks. Social mobilization of community. Voluntary contribution of labor for rehabilitation and maintenance. Engagement in collective action/development initiatives 	M	<i>Participation/Empowerment:</i> expand participatory evaluation of program and maintenance system, review operational procedures to assign specific activities to women, develop fine-tune training component, enhance dialogue with district authorities to mobilize support, encourage community action and joint-ventures to enhance sustainability of productive activities
<i>Communities</i>				
Whole	H	<ul style="list-style-type: none"> Support Micro-enterprises Engagement in project works Participation in development initiatives (VDL) 	L	<i>Participation/Empowerment:</i> continue participatory screening of subprojects and monitoring and evaluation of programs;
Vulnerable groups: Women	H	<ul style="list-style-type: none"> Participation in screening of subprojects. Participation in project works and income-earning activities (VDL) 	L	<i>Participation/Empowerment:</i> prepare gender statement to encourage women attendance; stimulate participation (meetings in <i>quechua</i>); strengthen and train social unit within PCR (headquarters and field offices) and local officials; monitor gender indicators; launch development initiatives aimed at women participation/empowerment;
Vulnerable groups: Indigenous Groups (River Transport Pilot)	H	<ul style="list-style-type: none"> Inclusion of indigenous groups living in settlements along the selected pilot locations in consultation for screening pilot interventions Participation of indigenous settlements in pilot benefits Participation of indigenous groups in monitoring impact of pilot activities 		<i>Participation/Empowerment:</i> engage NGO with ample experience in working with indigenous communities along the Upper Ucayali river for design, execution and evaluation of consultation process; involve indigenous groups, if interested, in the selection, design and implementation of pilot activities; establish a impact monitoring system with participation of indigenous communities.

Articulating the findings of Impact Evaluation Studies into recommendations for policy and project design. The various activities listed in the chart provided some quantitative measures of impact as well as valuable information to enhance the analysis of social issues. Furthering the social assessment has allowed the expansion of the analysis beyond the factual project-related data collected through the surveys to better understand how the various determinants affecting living conditions in rural areas interact among themselves and what results could have been expected in a given area, had the interventions been done in a different manner. These findings have pressed for a more holistic approach to poverty reduction and, in turn, the design of the Local Development Window described in Annex 2.

Analyzing the implications of isolation on the behavior of remote rural communities. The *comunidades campesinas* of the highlands are widely dispersed due to a variety of historical reasons, among which stand out the scarcity of agriculture resources, the need to balance production activities in different ecological floors and the accessibility constraints imposed by an extremely rugged topography. Altogether, they have conditioned the communication and trade patterns of Andean communities, who have traditionally relied on a dynamic system of local and regional fairs to trade their products and meet their external communication needs. In the last 15 years, the growth of intermediate cities and new regional markets have created demands for new products, affecting prices and reorienting development along new economic and commercial circuits. The evidence collected through the NMT pilot has shown that the perception of isolation goes beyond physical access constraints to encompass other multiple impacts derived from information constraints (e.g., on market opportunities, availability of basic services), the lack of cash-generating produce, and ancestral behaviors deeply rooted at the community level. Thus, bringing isolated rural communities to the mainstream of economic activity, and more precisely, to a market economy (the essence of a poverty eradication program) takes more than just improving infrastructure and access to basic services. In the context of the social assessment, a study was commissioned to an anthropologist to help the project team to examine cultural and peasant organizational dimensions as well as their linkage with commerce and markets, in an effort to identify what type of assistance is needed for communities to fully realize the benefit expected from improved access and transport services.

This case study conducted in 1999 assessed the social and cultural impact of improving non-motorized tracks in communities that have no other form of access. One of the issues explored in the study was whether compensating the communities (albeit partially) for their work under the project could weaken their willingness to undertake communal initiatives on their own (the collective *faenas* had been traditionally remunerated providing coca and *aguardiente*). On the contrary, a small compensation in cash proved quite beneficial for it helped communities to strengthen their organizations and cope with their staggering needs for cash (which is scarce in the highlands given the extensive use of bartering). Communities and road committee members reinvested their savings in local undertakings, improving their welfare and stimulating their local economies. Another issue was whether the creation of rural road committees could have resulted in overlapping or interference with elected authorities. No complains were found in this respect. Communities were able to choose the form of organization. In cases where the communities chose to collectively undertake the project works, the community leaders were designated to lead the road committee; in other cases where only community members willing to participate joined the committee, committee authorities were elected by its members. For some communities, participating in a "Rural Road Committee" meant having first time access to a bank account and acquiring new organizational and technical skills.

Assessing social impacts and potential undesirable side effects on communities during the execution of project interventions. Since the project entails the rehabilitation of existing roads, no direct negative effects are foreseen and the risks of indirect negative impacts linked with human activities (i.e., colonization, deforestation, resettlement) are minimal. A case study was conducted in 1999 to document possible social side effects associated with the execution of large project investments in relatively isolated areas. The study, carried out in the district of Kiteni, concluded that road construction activities neither had negative impacts on the local labor market and the price of goods with greater local demand, nor caused social disruption (e.g., excessive pressure on health services, delinquency, social conflicts). In view of prevailing constraints in the local labor market, the contractors were forced to bring most of the skilled labor from other regions; this, in turn, reduced the share of contract expenditure actually spent in the area.

The study also showed that road expenditures had only partially mitigated the significant downturn of economic activity in the area that takes place every year after the coffee harvest. The amount of money actually spent in the area as a result of project activities represented about 3.5 percent of the local GDP at the beginning of the works, which coincided with the end of the harvest season, and raised to about 63.6 percent of the local GDP during the peak of the road program. This marked seasonality of economic activity in the area (centered on one product) significantly increases the vulnerability of the rural poor. Box 6 gives a brief description of the study methodology.

Box 6 : Social Impact of Large Project Investments in Isolated Areas (the Kiteni Case Study)

- *Purpose of the Study.* To document possible negative impacts associated with the execution of large project investments in isolated areas. Cuánto, a well-known Peruvian NGO, was selected to perform the study in Kiteni (province of La Convención), a remote district in the department of Cusco with a permanent population of about 20,000 inhabitants. The rehabilitation of 89 km in the district, with an investment estimated at US\$2.1 million in about six months, implies a large per capita investment in a short period of time.
- *Methodology.* The study is based on field evaluations --conducted before, during and after the execution of the works--to measure variations on social and economic parameters such as (i) economic activity and household consumption (e.g., local GDP, commercial activities); (ii) employment (e.g., work force composition, wages, migration), (iii) prices of goods with larger demand, (iv) the availability/usage of basic social services (e.g., quality and cost of health, education and justice services); (v) social conflicts or disruptions during the construction phase (e.g., worsening of security conditions, increased alcoholism and disease transmission, and increased accident rates). The field work entails direct measures, household surveys and interviews with key informants and focus groups..

Women Participation and Empowerment: A Gender Exploratory Analysis. A first study was commissioned in 1999 to carry out an exploratory gender impact assessment. Box 7 briefly presents the approach taken to perform a first exploratory analysis of gender. On balance, the authors reported generally positive effects of improvement of the rural roads system: to a greater or lesser degree it has facilitated mobility, communications, access to resources, and participation in the labor market for both women and men, and women report a high level of satisfaction with the improvements made. However, the authors report inter- and intra-gender differences in the extent and nature of the effects of the project; also, in some variables, no effects were detected; and some aspects of the project may have had negative effects (for example, low levels of women participation in maintenance micro-enterprises might contribute to reproducing a pattern of male authority in the organization of road maintenance). Local gender relations, economic realities, and other factors (e.g., alcoholism and increased rural-urban migration, male abandonment of household) mediate the ability of road improvements to effect changes in many major aspects of daily life, including access to services, women's mobility patterns, labor market participation. The usefulness of the findings is greatly increased by the recognition that (i) neither women nor men constitute homogenous groups, and (ii) gender relations vary locally (in spite of the apparent homogeneity of the communities sampled); consequently, project impact studies need to differentiate between relevant groups and tie their findings to specific geographic areas or communities.

This first effort was furthered with the inclusion of a module under the Impact Survey Study performed in 2000, which although rather simple in its breadth, gave a dimension of the differences in gender perceptions and impacts. The survey shows that the RRP road rehabilitation had a significant impact on women (in relation of that of men) with regard to access to health care services, and positive but lower impacts with regards to access to education and women's share of the labor force.

Box 7: Exploratory Analysis of Project and Community Dynamics on Gender

* *Purpose of the Study.* To document gender differences in the economic and social impact of the rural roads and the non-motorized rural transport components of the project, within the overarching framework of poverty reduction. It was performed by Centro (a Peruvian NGO) with funding provided by the Gender Operational Support Fund. The study analyzed gender roles and attitudes, and the differential effects of the project on the lives of women and men, with respect to seven issues: access to services, women's mobility, time use in domestic activities, access to resources and benefits, participation in local markets, labor market dynamics, and women's participation in community organization and leadership.

* *Methodology.* An exploratory outcome study, rather than an impact study, which compares community characteristics and project dynamics in a sample of three areas in which the project was carried out. Data collection methods included: (i) participant observation within the 3 communities (field notes and photographs); (ii) 35 interviews with women and men who are heads of households in the project area (a non-probabilistic, purposive sample, use of semi-structured questionnaires); (iii) interviews with local and district authorities, transport operators, maintenance micro-enterprises personnel, and NGOs, using interview guides with open-ended questions; and (iv) focus groups with younger and older women and men, and with women's organizations. The authors caution that their findings are tentative, given the short time period elapsed since the improvements were made, the small size of the sample, and the complexity of pinpointing the causes of social and economic change.

Access to health care services by gender in areas with roads rehabilitated under the RRP
(average per health center)

<i>Number Registered</i>		<i>Number Registered</i>	
Men 1999	968.29	women 1999	603.3
Men before rrp	819.96	women before rrp	461.3
<i>Percent Variation</i>	<i>18.09</i>	<i>Percent Variation</i>	<i>30.8</i>
<i>Number of Dropouts</i>		<i>Number of Dropouts</i>	
Men 1999	9.68	women 1999	7.88
Men before RRP	10.17	women before RRP	7.46
<i>Percent Variation</i>	<i>-4.90</i>	<i>Percent Variation</i>	<i>5.72</i>

Access to education by gender in areas with roads rehabilitated under the RRP
(average per school)

<i>Number Registered</i>		<i>Number Registered</i>	
Men 1999	110.57	women 1999	93.83
Men before rrp	106.77	women before rrp	88.79
<i>Percent Variation</i>	<i>3.56</i>	<i>Percent Variation</i>	<i>5.67</i>
<i>Number of Dropouts</i>		<i>Number of Dropouts</i>	
Men 1999	9.68	women 1999	7.88
Men before RRP	10.17	women before RRP	7.46
<i>Percent Variation</i>	<i>-4.90</i>	<i>Percent Variation</i>	<i>5.72</i>

Beyond these measurements, most women reported benefits from the RRP: of all women living in areas benefited by the RRP surveyed during the field work, 70 percent reported that the RRP brought improvements to their lifestyles (interestingly, out of those who reported not having benefited from the RRP, roughly half said their situation remained the same as before road rehabilitation, about a quarter stated they did not use the rehabilitated roads and seven percent declared they do not leave their homestead). Among the main aspects women think they have benefited from the RRP, they report better access to health care services, which supports the figures above, increased trade (sales of local products, livestock and purchases from other areas) and more opportunities to visit acquaintances and socialize due to increased mobility and safety when traveling. Women valued the most the fact that the RRP has enabled them to travel to farther places; in second place, the possibility to travel more frequently, and in third place to do it more safely.

Aspects in which women got better off			
<i>Percent distribution of responses</i>	<i>Yes</i>	<i>No</i>	<i>Don't Know</i>
Housework	50.1	46.5	3.4
Improved health care service	69.5	27.9	2.6
Increased attendance to school	61.5	35.1	3.4
Productive tasks in their land plots	43.3	50.6	6.0
Trading	65.2	31.2	3.6
Social visits	62.7	33.7	3.6
Administrative proceedings	57.4	37.5	5.1
Undertake new activities	48.6	45.5	5.9

Activities the RRP enabled women to do			
<i>Percent distribution of responses</i>	<i>Yes</i>	<i>No</i>	<i>Don't Know</i>
Travel to farther places	77.3	22	0.7
Travel more frequently	70.3	29	0.7
Travel safely	66.8	31.6	1.6
Travel with greater security	53.6	42.2	4.2
Access additional income	42.9	53.2	3.9
Access new tools and houseware	38.8	55.2	6.0
Access temporary jobs	40.5	53.9	5.6

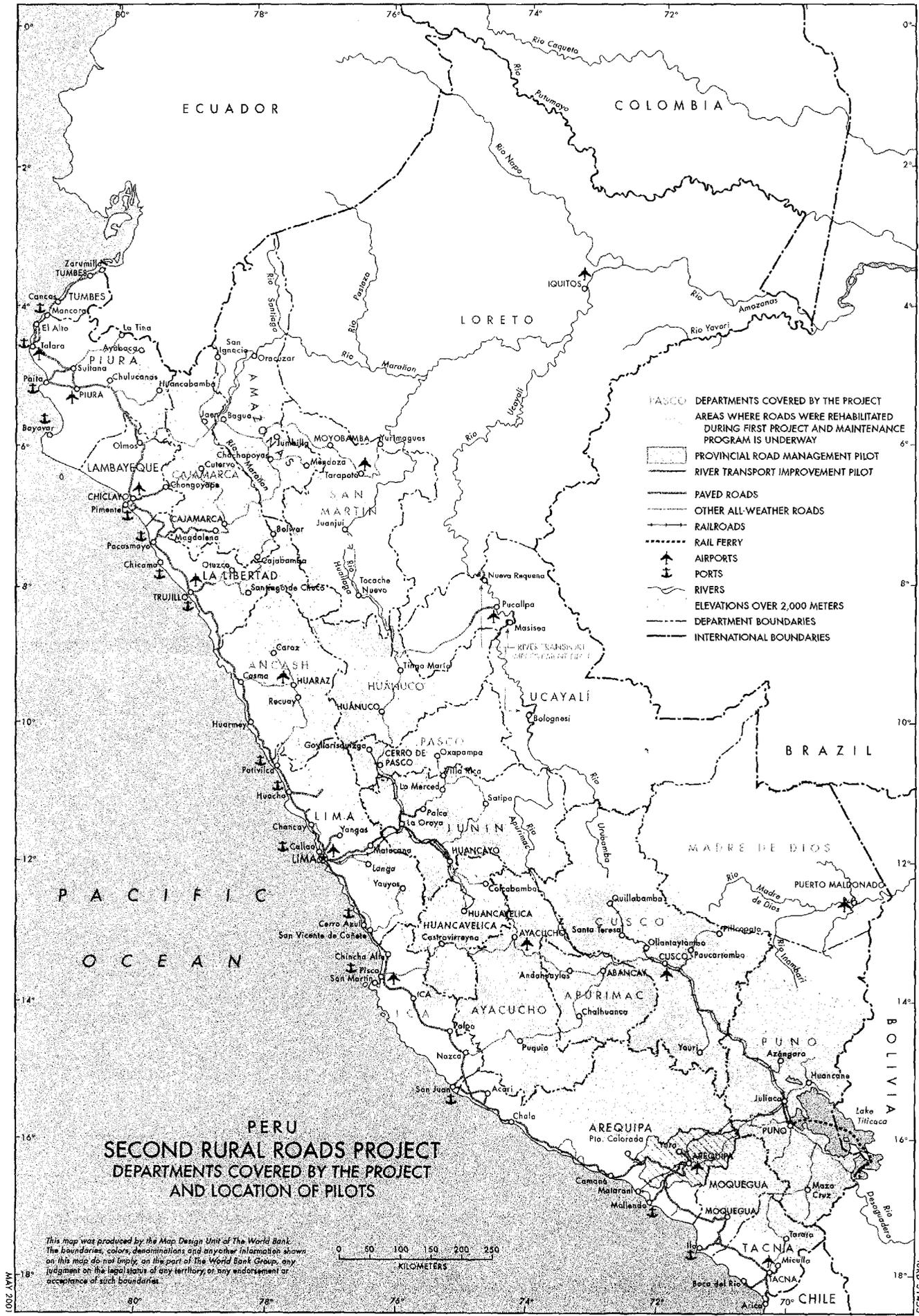
The participatory workshops conducted in October 2000 in the context of the Learning ICR proved another key step towards engendering the RRP activities. Since then, PCR staff is receiving training on gender issues and the gender dimension is now deeply rooted in the RRP with its incorporation into the project development objective and activities (see Section B. 3 in the main text). In a nutshell, the approach builds on: (i) clarifying what gender-differentiated project outcomes can be anticipated, and how different local realities might affect women participation in project activities and benefits; (ii) support interventions that will particularly improve women's access to transport services, based on a better understanding of why women and men move around and whether women and men use different types of transport or the road network differently; and (iii) foster implementation arrangements that will gradually but effectively contribute to gender mainstreaming (i.e. addressing cultural attitudes towards women's mobility, empowering women groups to enhance their participation in development initiatives and access to income earning activities, etc.). The proposed project would support culturally acceptable measures to achieve these goals. Gender impacts will be tracked through the project social and impact monitoring system.

^{1/} About 175 km of local streets were paved in villages along the alignment of the roads rehabilitated under the program. This component attempted to gain further support to the program and support the local municipalities in improving their infrastructure to accommodate the increase in the traffic passing through the rural towns. The amount of investment for this component was limited, but municipalities could contribute with their own resources to enhance the technical characteristics of the projects.

^{2/} Instituto Cuánto (2000), "Evaluación de Impactos del Proyecto de Caminos Rurales: Informe Final," Mimeo, Lima, Peru.

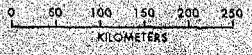
^{3/} The confidence level of the impact analysis is 92.5 percent, though for particular types of analysis (such as those on the differing impact of projects depending on their presence within an economic corridor or an area of concentration of investments) the survey is not statistically significant. Retrospective (before the project) and current (after the project) data were both obtained through the surveys and interviews carried out in March 2000. For some variables it was very difficult to obtain the past monetary value by just relying on personal recollection; consequently, in these instances present values of both types of roads (i.e. sample and control roads) were compared, assuming past values were the same as current. Since this is a very strong assumption, the resulting indicators do not have as high a level of confidence as that of indicators whose baseline could be reconstructed.

^{4/} Instituto Cuánto (1994, 1997 and 2000) "Encuesta Nacional de Niveles de Vida", Lima, Peru.



PERU
SECOND RURAL ROADS PROJECT
DEPARTMENTS COVERED BY THE PROJECT
AND LOCATION OF PILOTS

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