

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PARAGUAY

**NATIONAL RURAL ROADS PROGRAM
SECOND STAGE, PHASE II**

(PR-L1019)

MEMORANDUM OF EVALUATION OF PHASE I (PR-0104)

AND

LOAN PROPOSAL FOR PHASE II (PR-L1019)

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| 3. | Monitoring and evaluation arrangements http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2003532 |
| 4. | Program ESMR-ESMS http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2003510 |
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| 6. | Economic analysis of projects in the sample http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2003550 |
| OPTIONAL | |
| 1. | Review matrix compliance with minimum conditions of Phase I of NRRP-2 to proceed to Phase II http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=1998904 |
| 2. | Aide-Mémoire on Analysis Mission 10-21 November 2008 http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2003579 |
| 3. | NRRP-2 Integrated monitoring and evaluation system (SIME)- first special report http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2003558 |
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| 5. | Participatory road planning in the departments of Itapúa and Alto Paraná http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=1998837 |
| 6. | Paraguay. Transportation sector note http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=1998872 |
| 7. | Institutional and financial framework for decentralized management of rural roads in Paraguay http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2003572 |

ABBREVIATIONS

| | |
|--------|---|
| AADT | Tránsito Medio Diario Anual [Annual average daily traffic flow] |
| AWP | Annual work plan |
| CMV | Cuadrilla de Mantenimiento Vial [road maintenance team] |
| DCV | Dirección de Caminos Vecinales [Local Roads Division] |
| DMA | Dirección de Medio Ambiente [Environment Division] |
| DPV | Dirección de Planificación Vial [Road Planning Division] |
| DV | Dirección de Vialidad [Highway Division] |
| EIRR | Economic internal rate of return |
| EMP | Environmental Management Plan |
| ESMR | Environmental and social management report |
| ESMS | Environmental and social management system - NRRP-2 – PHASE II |
| FSO | Fund for Special Operations |
| GETS | General Environmental Technical Specification |
| GOP | Government of Paraguay |
| GV | Gerencia Vial [Road Management Unit] |
| ICAS | Institutional Capacity Assessment System |
| INDI | Instituto Nacional del Indígena [National Indigenous People's Institute] |
| JICA | Japan International Cooperation Agency |
| MMP | Maintenance management plan |
| MOPC | Ministry of Public Works and Communications |
| NRRP-1 | National Rural Roads Program - Stage 1 |
| NRRP-2 | National Rural Roads Program - Stage 2 |
| OC | Ordinary Capital |
| OFID | OPEC Fund for International Development |
| PAICI | Plan de Asistencia Integral a las Comunidades Indígenas [Indigenous Communities Comprehensive Assistance plan] |
| SEAM | Ministry of the Environment |
| SIAM-V | Sistema Integral de Administración del Mantenimiento Vial [Comprehensive road maintenance management system] |
| UA | Unidad Ambiental [Environmental Unit] |
| VMOP | Viceministerio de Obras Públicas y Comunicaciones [Vice Ministry of Public Works and Communications] |

PROJECT SUMMARY

PARAGUAY NATIONAL RURAL ROADS PROGRAM SECOND STAGE, PHASE II (PR-L1019)

| Financial Terms and Conditions ¹ | | | | | |
|---|-------------------------|---------------------------------|---|--------------|--------------------------------|
| Borrower: Republic of Paraguay | | | Parallel financing | | Financing |
| | | | OC | FSO | OC |
| Executing agency: Ministry of Public Works and Communications (MOPC) | | Amortization period: | 30 years | 40 years | 25 years |
| | | Grace period: | 5.5 years | 40 years | 5 years |
| Source | Amount US\$ millions | Disbursement period: | 5 years | 5 years | 5 years |
| Parallel financing OC (80%) | 22.4 | Interest rate: | LIBOR with obligation to fix the rate** | 0.25% | LIBOR |
| Parallel financing FSO (20%) | 5.6 | | | | |
| OC financing | 37.6 | Inspection and supervision fee: | * | N/A | * |
| Local | 25.4 | Credit fee: | * | N/A | * |
| Other/Cofinancing | 79.0 | Currency: | U.S. dollars, SCF ¹ | U.S. dollars | U.S. dollars, SCF ¹ |
| Total | 170.0 | | | | |
| Project at a glance | | | | | |
| Objective: <p>The overall objective is to help enhance the competitiveness of national production and raise the standard of living of the rural population, by upgrading and maintaining the level of service on a substantial part of the priority local roads network.</p> <p>To achieve these objectives, the program has been divided into the following main components: (i) engineering and supervision; (ii) civil works, involving: (a) rehabilitation of about 1,150 km of major local roads; (b) routine maintenance on approximately 4,200 km of roads, previously targeted by NRRP-1 and phase I of NRRP-2, and to be rehabilitated in this Phase II, and periodic maintenance on approximately 3,050 km of roads that have been under routine maintenance for some time and are now at the end of their service life; (c) rehabilitation and/or replacement of some 2,300 meters of rundown small wooden bridges in the secondary local roads network by reinforced concrete bridges; and (d) gravel surfacing of roughly 500 urban or semiurban streets in communities located in the program area; (iii) institutional strengthening and program management; and (iv) monitoring and baseline.</p> | | | | | |
| Special contractual clauses: <p>A condition precedent to the first disbursement, and subject to the Bank's no objection, requires a program operations manual to be in force, duly approved by the MOPC.</p> | | | | | |
| Exceptions to Bank policies: <p>None.</p> | | | | | |
| Project consistent with country strategy: Yes [X] No [] Project qualifies as: SEQ [X] PTI [X] Sector [] Geographic [X] Headcount [] Procurement: See paragraph 3.5 | | | | | |

* The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges, in accordance with the applicable provisions of the Bank's policy on lending rate methodology for Ordinary Capital loans. In no case will the credit fee exceed 0.75% or the inspection and supervision fee exceed, in a given six-month period, the amount that would result from applying 1% to the loan amount divided by the number of six-month periods included in the original disbursement period.

** As the adjustable interest rate will be discontinued on 1 July 2009, it will be replaced by Libor with an obligation to fix the rate.

¹ Single Currency Facility.

I. DESCRIPTION AND RESULTS MONITORING

A. Background, problem addressed, and rationale

- 1.1 **Socioeconomic setting, rural poverty, and accessibility.** Paraguay has a land area of 406,752 km², a population of 6.2 million, and an economic structure based mainly on agriculture and agribusiness.¹ The eastern region of the country is home to 97% of the population² and a similar proportion of the country's productive activity. Paraguay has identified isolation and poor physical accessibility as key factors in the persistence of rural poverty; and it has placed major emphasis on expanding infrastructure and transport services in rural areas as a structural way to address these issues. Physical accessibility in rural areas plays a key role in improving living conditions among the rural poor, while providing a viable economic platform for sustainable development.³
- 1.2 **Institutional structure and management of the road subsector in Paraguay.** The Ministry of Public Works and Communications (MOPC) defines policies in the road subsector, and is responsible for undertaking studies and for the construction and maintenance of the road system, through the Highway Division (DV) for national and departmental roads, and through the Local Roads Division (DCV) in the case of rural roads. The MOPC is implementing a road management policy that is consistent with an administrative decentralization process, with actions allowing for orderly and gradual transfer of part of the management of the road system to local government entities (*gobernaciones* and *municipios*).
- 1.3 **The Bank's participation.** The Bank's strategy in the road subsector aims to support upgrading and paving on the most important highway arteries, together with integrated development of the departmental and local roads system, by creating a basic network allowing for adequate and reliable connections between production, commerce, and service areas.⁴ Physical infrastructure development in the rural sector is considered a basic condition for the sector's modernization in the context of reducing extreme rural poverty and developing social sectors. In 1991, the MOPC prepared the National Transport Plan, in collaboration with the Japan International Cooperation Agency (JICA), which has been consistently used to set

¹ Farming and agricultural enterprises account for roughly 25% of GDP and 30% of employment and produce over 90% of all exports.

² Paraguay is one of the few Latin American countries where 42% of the population still lives in rural areas, which are also home to most the country's poor and extremely poor.

³ Most rural roads are in the eastern region of the country. These have been built in very haphazardly, with no prior design, using soils from the locality; they have an average width of 4.5 m and no drainage systems, which means they are not serviceable all year round. This affects agricultural production and seriously limits the provision of services to rural communities, since they are the only links with connector roads giving access to service and consumption centers.

⁴ Weather conditions and soils in eastern Paraguay make it impossible during heavy rainfall periods, to use roads that have not been upgraded (roads closed to traffic for up to 100 days per year, leaving many parts of the country completely isolated). Ensuring road serviceability at all times is thus crucial to both local and national development.

investment and external funding priorities. One of the priorities that the PNT identified is to upgrade and rehabilitate rural roads with a view to developing a basic rural road network nationwide. This gave rise to the National Rural Roads Program - First Stage (NRRP-1), which the Bank supported through loans 744/OC and 745/OC in 1993. The execution of these loans allowed for a substantial improvement in the productive rural road infrastructure and the institutional and technical consolidation of both the DCV and the Environmental Unit in the MOPC.

1.4 **National Rural Roads Program - Second Stage (NRRP-2).** With a view to consolidating and further expanding the progress achieved with NRRP-1, in 1999 the Bank approved Phase I of NRRP-2, which aims to help enhance the competitiveness of national production and raise the standard of living among the rural population, by upgrading and maintaining the service level on a substantial part of the priority local roads network in eastern Paraguay.⁵ NRRP-2 was designed as a multiphase program, with two execution phases lasting five years each. The Bank has provided US\$67 million in financing for Phase I, which is being executed by the MOPC through its DCV, and is nearing completion.

1.5 **Evaluation of Phase I of NRRP-2 (Loan 1230/OC-PR) and verification of the fulfillment of minimum conditions to move to Phase II.**⁶ Progress in terms of components and physical and financial targets. As of 15 September 2008, 90.7% of the loan proceeds had been committed and 86.7% disbursed, as shown in Table I-1. Table I-2 shows that the physical targets have been greatly surpassed.

| Table I-1. Cost and Financing of NRRP-2- Phase I (US\$ 000) | | | | | | | | | |
|--|--|---------------|---------------|---|---------------|---------------|---|---------------|---------------|
| Category | Current (Reflects adjustments by category) | | | Committed at 15 September 2008 | | | Disbursed at 15 September 2008 | | |
| | IDB | Local | Total | IDB | Local | Total | IDB | Local | Total |
| 1. Engineering and administration | 6,119 | 1,050 | 7,169 | 5,851 | 849 | 6,700 | 5,696 | 795 | 6,491 |
| 2. Civil works | 56,181 | 7,700 | 63,881 | 51,427 | 8,897 | 60,324 | 49,252 | 8,135 | 57,387 |
| 2.1 Upgrading of main local roads | 48,781 | 5,000 | 53,781 | 45,174 | 6,290 | 51,464 | 43,676 | 5,805 | 49,481 |
| 2.2 Maintenance management plan (MMP) | 7,400 | 2,700 | 10,100 | 6,252 | 2,608 | 8,860 | 5,576 | 2,330 | 7,905 |
| 3. Institutional strengthening | 3,980 | 200 | 4,180 | 3,385 | 314 | 3,699 | 3,043 | 243 | 3,286 |
| 4. Concurrent costs | 50 | 2,500 | 2,550 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5. Financial costs | 670 | 11,050 | 11,720 | 124 | 11,113 | 11,237 | 124 | 8,487 | 8,611 |
| Program total | 67,000 | 22,500 | 89,500 | 60,787 | 21,174 | 81,961 | 58,115 | 17,661 | 75,776 |
| Progress of financial execution | | | | 90.7% | | | 86.7% | | |

1.6 In addition, execution of MOPC budgetary allocations for rural road maintenance has exceeded US\$5 million per year in the 2005-2007 period,⁷ and the local

⁵ For NRRP-2 a priority system of approximately 6,000 km has been identified with roads selected for their functional importance (location in high-production areas) and their connectivity with the national and departmental road system. The roads in this priority network are divided into main (1,900 km) and secondary (4,100 km) local roads depending on their importance.

⁶ See optional electronic link 2.

⁷ US\$5.4 million in 2005; US\$6.04 million in 2006, and US\$7.22 million in 2007.

governments participating in the agreements have in all cases provided the additional resources committed as counterpart.⁸

| Table I-2. Physical Targets of NRRP-2 Phase I Financing | | | |
|--|------------------------|------------------------|----------------------|
| Category | Physical target in km. | Target achieved in km. | Level of fulfillment |
| 2. Civil works | 2,580.0 | 3,305.8 | 128% |
| 2.1 Upgrading of the main local roads ⁹ | 730.0 | 730.0 | 100% |
| 2.2 Maintenance management plan (MMP) ¹⁰ | 1,850.0 | 2,575.8 | 139% |
| 2.2.1 Results-based maintenance contracts with third parties ¹¹ | 800.0 | 796.4 | 99% |
| 2.2.2 Road maintenance by agreement with local governments ¹² | 1,050.0 | 1,779.4 | 169% |

- 1.7 *Institutional strengthening* is evaluated through two indicators: (i) *Strengthening of the DCV; Local roads network inventory and investment planning*: The DCV is being strengthened by hiring additional professional staff to complement and strengthen its structural and functional organizational framework, supplemented by ongoing training and technology transfer to its permanent employees. Moreover, since 2005 there has been a georeferenced inventory of over 15,000 km of local roads, covering the entire priority network. It can thus be concluded that this indicator has been attained; and (ii) *Strengthening of the Environmental Unit and implementation of the Environmental Management Plan (EMP); purchase of land for indigenous communities*: Although it was not possible to reclassify the Environmental Unit as an Environmental Division,¹³ strengthening in the context of the program has enabled the unit to satisfactorily fulfill its functions in implementing the Phase I EMP, by achieving the following results: (a) General Environmental Technical Specifications have been drawn up and put into practice; (b) all of the works have obtained their respective environmental permits; (c) an environmental diagnostic assessment was performed and served as a baseline for

⁸ Contributions in the form of road equipment, personnel support logistics, expenses involved in managing the agreement, oversight staff, among others.

⁹ The designs have proven reliable and these works attracted a large number of bidders. The average cost of the roads built has been US\$72,291/km.

¹⁰ The MMP aims to upgrade maintenance management on the 6,000 km of the priority network by gradually implementing more efficient modalities, so that by the end of Phase I, the length of priority local roads in good/average condition will have increased from 1,200 km to 2,400 km (40% of the total).

¹¹ Three two-year contracts began in February 2007, extendable for single additional period. These cover 242.35 km in the Department of Guairá; 302.55 km in Caaguazú, and 251.5 km in the Department of San Pedro.

¹² Four agreements are currently in place: Alto Paraná Sur (531.2 km); Itapúa (419.9 km); Canindeyú (426.5 km) and Caazapá (401.9 km).

¹³ The proposed amendment of the law to change the MOPC Charter and its technical rationale were prepared in 2000; nonetheless the Reform Secretariat ruled that the creation of the Environment Division (DMA) was contrary to current policy guidelines for the public sector in Paraguay, so the amendment was never sent to Congress.

preparing basic environmental questionnaires for all Phase I projects, in compliance with the current legal framework; (d) Plan for Comprehensive Assistance to Indigenous Communities (PAICI): the Environmental Unit signed interagency cooperation agreements with the National Indigenous People's Institute (INDI) and the Ministries of Health, Education, and Agriculture; fieldwork has also been undertaken with INDI, to present and reach consensus with the beneficiary communities on the actions to be taken in the context of the PAICI; five consulting and goods supply contracts are being implemented (PAICI Consultoría) to provide technical assistance to these communities; and three civil works modules are currently being contracted (PAICI Obras) to provide basic infrastructure and other items; (e) the Government of Paraguay, through INDI, has acquired a total of 3,708 ha of land¹⁴ for the settlement of indigenous communities located in the NRRP-2 area of influence, thereby surpassing the target of 3,000 ha.

- 1.8 Progress towards development goals and economic and social impacts. (i) *Update of the projects' economic evaluations:*¹⁵ The DCV updated the economic evaluations of the five representative sample roads from Phase I, which were completed and put into service three years ago. Table I-3 shows the findings of these evaluations and other variables normally used to measure benefits associated with improving road serviceability; and (ii) *impact on employment:* The Phase I road improvement works have created temporary direct jobs lasting roughly 10 months for an average of 2,441 people living in the area of influence of each road, with wage levels above those normally received in those areas. In addition, the greater demand for services and products in the area has created indirect employment for roughly 5,000 people. It is also estimated that the tasks undertaken as part of the MMP generated an average of 906 direct jobs during their execution period.

| Table I-3 Economic Evaluation Update Projects from the NRRP-2 Phase I Representative Sample | | | | | | |
|--|---|---------|--|---------|----------------------------------|---------|
| Work | Economic internal rate of return (EIRR) (%) | | Annual average daily traffic (AADT) (Vehicles) | | Vehicle operating cost (US\$/km) | |
| | Starting | Current | Planned | Current | Starting | Current |
| Cañada Costa Pucú-Arroyos and Esteros-Pirapó mi | 48.4 | 22.4 | 44 | 89 | 0.528 | 0.367 |
| Barrio San Pedro-Luz Bella-Nueva Durango | 36.9 | 58.5 | 65 | 54 | 0.415 | 0.366 |
| Nueva Esperanza-Laurel-Col. 11 de Sept.-Route 10 | 26.8 | 55.7 | 86 | 134 | 0.340 | 0.288 |
| Tavapy II-Santa Rosa del Monday-Línea Ande | 47.2 | 23.7 | 70 | 137 | 0.430 | 0.284 |
| San Alfredo-Colonia Mvareté-Línea Progreso | 31.9 | 29.1 | 143 | 137 | 0.390 | 0.282 |

¹⁴ In the Department of San Pedro: 133.7 ha in Gral. Resquín and 2,777.3 ha in Villa del Rosario; and in the Department de Alto Paraná: 197.1 ha in Naranjal and 600.6 ha in Itakyry.

¹⁵ The purpose of this analysis was to measure the extent to which the criteria adopted and the hypotheses assumed during the preinvestment studies and project design stage have proven correct, and are starting to generate economic and social impacts, along with the expected benefits; or, if not, to provide for the necessary adjustments in project preparation to be included in Phase II (see optional electronic link 3).

- 1.9 Fulfillment of minimum conditions to proceed to Phase II. A rating system based on preestablished grades was used to evaluate progress in fulfilling each of the minimum conditions of Phase I of NRRP-2. Optional electronic link 1 shows the result of this evaluation in matrix form.
- 1.10 **Conclusions and recommendation.** The evidence presented shows that Phase I of NRRP-2 is being executed satisfactorily, and that the conditions for proceeding to the next phase have been fulfilled. It is therefore recommended that the Board of Executive Directors approve Phase II of NRRP-2 .
- 1.11 **Lessons learned in Phase I.** The following lessons were identified: (i) participation by local governments in the selection and prioritization of projects that are maintained by agreement; (ii) decentralization to local government by the DCV of the function of input and service procurement and the management of funds to implement the agreements; (iii) local government cofinancing in kind (equipment, fuel, etc.) to implement maintenance by agreement; (iv) maintenance outsourced with the private sector by level of service; (v) development of the local market of contractors with good results obtained, both in terms of the quality of the works undertaken and in reducing costs and timeframes; (vi) permanent maintenance of local roads, ensuring serviceability, creates confidence among users and the beneficiary population;¹⁶ and (vii) management of program execution through the functional organization and structure of the DCV itself, duly strengthened in terms of operational capacity and human resources, lays foundations for institutionalizing the experiences and good practices acquired throughout the process.
- 1.12 Based on the above, and in view of the Bank's experience in managing and financing rural road systems in the region, the following considerations were taken into account for the design of NRRP-2 Phase II: (i) *Political.* (a) *Responsible and sustainable decentralization of local road management:* more than just resource allocation, the success of the process requires political will from the government to promote continuous institutional change aimed at achieving higher levels of efficiency and transparency, and technical grounds for management decision-making; (b) *Participatory road planning as a tool for setting priorities and selecting the roads to be rehabilitated and maintained:* Collaboration between government agencies and stakeholders makes it possible to formulate an operational strategy and program enjoying broad overall support at all levels, thus generating ownership of the roads by the beneficiary community; (ii) *Institutional.* (a) *Support for the creation of road management units (GVs) within the Municipal Associations,* as a professionalized technical-administrative body with capacity to gradually take over decentralized management of the rural roads network in their respective jurisdictions; (b) *Gradual transfer of the contracting of routine maintenance* to the GV's created, or to the Municipal Associations, under MOPC monitoring and oversight; (c) *coordination of the actions of all stakeholders*

¹⁶ This makes it possible to design and execute works with standards consistent with the level and characteristics of demand (not oversized) that command broad acceptance among stakeholders.

*involved in the local road subsector: central government¹⁷; the local governments and the private entities and/or producer associations; (iii) Financial. (a) *Cofinancing*: To support the development of a financial structure that gradually involves alternative funding sources, initially promoting the cofinancing of routine maintenance by the MOPC, local governments, and the private sector; (iv) Technical. (a) *Support the formation and training of Road Management Teams (CMVs) for routine maintenance on local roads*;¹⁸ (b) *Specify technical standards for local road rehabilitation and upgrading* that match the road's functions and importance in promoting regional socioeconomic development, with investments that are compatible with the service requirements of the road in question; (c) *Give priority to the conservation of road assets, ensuring that all rehabilitated works are immediately included in a routine maintenance plan, regulating the use of the roads particularly in the rainy season*; (d) *Works design and construction*: The design should give special attention to conservationist criteria and drainage systems to avoid project cost overruns.*

- 1.13 **Coordination with other institutions and other donors.** The nature of NRRP-2 Phase II calls for broad-based institutional coordination and participation locally, nationally, and internationally. As the Bank is the benchmark in this subsector for donors acting in Paraguay, efforts are being made to encourage international entities to cofinance this program, including the OPEC International Development Fund (OFID) and JICA.¹⁹ This will enable the program to attain an adequate scale and financing that is compatible with its objectives and scope, thus promoting a single policy for acting in the local network and ensuring that the expected results are achieved. Nationally, there has been coordination with other public sector institutions; and locally the program includes special procedures to ensure participation by local governments, the population, and its representative organizations.²⁰

B. Objectives, components, and costs

- 1.14 **Objectives.** Phase II of NRRP-2 (the Program) maintains the same goal and purpose already defined for Phase I, namely to help increase the competitiveness of national production and raise living standards among the rural population, by

¹⁷ Through the Road Planning Department (DPV), DCV and DV- Conservation Districts of the MOPC.

¹⁸ Other Bank-funded programs have shown that maintenance through microenterprises set up as part of the program's design to seek the best way to permanently maintain these roads, has been a useful tool in undertaking these tasks and routine activities in rural areas, the characteristics of which preclude a market with sufficient qualified or interested bidders. It has also created employment and catalyzed other local community development initiatives, making their management sustainable. Its success also produced social and political sustainability, as shown by support from the beneficiary communities and local authorities.

¹⁹ Coordination of the project teams will continue throughout implementation with initial start-up meetings for each operation and semiannual review meetings.

²⁰ The institutional collaboration needed between the program and the relevant entities is expected to be formalized, with a view to achieving fluent execution and technical-operational, socioenvironmental, and accounting-financial monitoring and control, both locally and in aggregate through the DCV.

improving and maintaining the level of service on a substantial part of the priority local road network. The Program will continue to provide support for rehabilitation work on the main local roads in the priority network in eastern Paraguay,²¹ as well as for maintenance on the local roads that were included in previous Bank programs, and those to be rehabilitated and improved through this operation. The Program will also support modernization and strengthening of the subsector's institutional structure, encouraging greater local government participation in managing the local road network and in its sustainability, by cofinancing routine maintenance on the roads covered by the Program. To achieve these objectives, the Program has been structured in the following main components:

- 1.15 **Component 1. Engineering and supervision (US\$12 million).** This includes resources to undertake: (a) technical, economic, and socioenvironmental feasibility studies and final engineering designs for rehabilitation work on the main local roads, and for the replacement of small bridges, not included in the respective samples analyzed; and (b) supervision of the execution of these works.
- 1.16 **Component 2. Civil works (US\$136.5 million).** This will finance: (a) *rehabilitation of roughly 1,150 km of the main local roads (US\$70 million)* prioritized and selected through duly developed and approved participatory road planning procedures.²² The tasks, which are simple from the engineering standpoint, aim to bring the roads up to a standard that ensures conditions of serviceability all year round, together with adequate road safety and environmental mitigation measures;²³ (b) execution of works envisaged for Phase II in the MMP, consisting of *routine maintenance on roughly 4,200 km* — previously targeted in NRRP-1 and NRRP-2 Phase I, and to be rehabilitated in Phase II — and *periodic maintenance on some 3,050 km* of roads that have been under routine maintenance for some time and are now at the end of their useful life (*US\$34.5 million, equivalent to 25% of the component*), to be undertaken by agreement with local governments and communities, and outsourced, including to the CMVs to be promoted by this operation; (c) *rehabilitation and/or replacement of roughly 2,300 meters of small wooden bridges in poor state of repair, with reinforced concrete bridges (US\$30 million)* on the local road network, which is essential for ensuring an

²¹ NRRP-2 Phase II will be executed in at least 10 departments in this region of the country. For coordination purposes, it was agreed that JICA resources will be used mainly in the departments of Guairá, Misiones, and Paraguari.

²² Once completed, these works will immediately enter a routine maintenance program to be undertaken by CMVs, with cofinancing expected by the beneficiary municipal governments, in accordance with their average financial capacities and in an increasing proportion through time.

²³ The technical standards for rehabilitation are adapted to the geographic characteristics of the route through which the roads pass, and the nature and level of demand. On all roads, whatever the demand, the works to be undertaken involve raising the embankment above the maximum water level in flood prone areas, improving the drainage system and the wearing surface using a mixture of processed gravel and selected soils controlled on site. For roads with a traffic flow greater than 150 vehicles per day, the width of the road will be 7 meters. In the case of road stretches with gradients greater than 5%, or where roads pass through population centers, the gravel surface will be replaced by gravel surfacing.

adequate level of serviceability throughout the length of such roads; (d) *gravel surfacing work on some 500 urban or semiurban streets (US\$2 million)* in communities located in the project's service area, which are easy to construct, of low cost and low environmental impact, to be done under agreement with local governments to help improve quality of life in the community.

- 1.17 **Component 3. Institutional strengthening and program administration (US\$12.2 million)** This aims at: (a) institutional strengthening of the DCV, including additional staff, procurement of specialized equipment, development and training in its new functions and in the various aspects under its responsibility, to consolidate it as the subsector's lead agency, providing timely technical, institutional, and financial assistance as required by the local governments participating in the program; (b) strengthening of operational and human resource capacity in the Environmental Unit to provide adequate socioenvironmental management throughout the full cycle of each project, including the development of technical and environmental specifications for routine maintenance activities on local roads, and a development and training plan applicable to the Program for the CMVs and works contractors on environmental protection, among others; (c) support for the comprehensive consolidation in the DPV of road management processes for the local, departmental, and national network; (d) support for the development and monitoring of participatory road planning tasks at the departmental level, including methodological updating, complementarity with other national and/or regional agencies, and linkage with annual investment and maintenance plans; (e) formation and training of CMVs²⁴ (microenterprises formed by local community members) and hiring of technical and business monitors to support the CMVs while they build the capacity needed to undertake their task; (f) support for creating and strengthening the GVs within the municipal associations in each department, as professionalized technical-administrative units with the capacity to gradually take over the decentralized management of local roads in their respective jurisdictions; and (g) Program management, including all additional expenses involved in its execution.
- 1.18 **Component 4 - Monitoring and baseline (US\$1 million).** This includes resources for performing socioeconomic baseline studies and evaluating the program's impact and outcomes, and tracking and monitoring activities.
- 1.19 **Component 5 - Financial and operational audit (US\$600,000).** This component includes funds to hire independent external financial, technical, operational, environmental, and social audits.
- 1.20 **Costs.** The Program will be financed through a multiyear investment loan. The total cost of the Program will be US\$170 million, broken down as follows: (i) US\$65.6 million from the Bank; (ii) US\$29 million from OFID; (iii) US\$50 million from JICA; and (iv) US\$25.4 million in local counterpart funding. The Bank's financing

²⁴ Covering their establishment, development, and consolidation; monitoring and evaluation of their technical-business activities; the corporate-organizational forms adopted; and their relation with the community.

includes: (i) US\$28 million from parallel resources of the Fund for Special Operations (FSO) and the Ordinary Capital, considered as a single loan with two sources, to be disbursed *pari passu* in proportions of 20% and 80% respectively; and (ii) US\$37.6 million charged against the Ordinary Capital. The government is negotiating the loans from OFID and JICA that are expected to cofinance this program. The following table summarizes the program's costs and financing.

| Table I-4 Summary of Program Costs and Financing (US\$ 000) | | | | | | |
|--|---------------|---------------|---------------|---------------|----------------|--------------|
| Category | IDB | OFID | JICA | GOP | Total | % |
| 1. Engineering and supervision | 4,900 | 2,060 | 3,955 | 1,085 | 12,000 | 7.1% |
| 1.1 Engineering | 2,100 | 800 | 1,700 | 400 | 5,000 | |
| 1.2 Inspection | 2,800 | 1,260 | 2,255 | 685 | 7,000 | |
| 2. Civil works | 50,400 | 24,650 | 42,000 | 19,450 | 136,500 | 80.3% |
| 2.1 Rehabilitation of the main local roads | 23,000 | 12,150 | 30,000 | 4,850 | 70,000 | |
| 2.2 Replacement of wooden bridges with reinforced concrete bridges on non-upgraded segments | 10,000 | 6,000 | 12,000 | 2,000 | 30,000 | |
| 2.3 Maintenance management plan | 16,000 | 5,900 | 0 | 12,600 | 34,500 | |
| 2.4 Gravel surfacing of urban streets | 1,400 | 600 | 0 | 0 | 2,000 | |
| 3. Institutional strengthening and administration | 7,761 | 0 | 2,595 | 1,844 | 12,200 | 7.1% |
| 3.1 Institutional strengthening of the DCV, Environmental Unit, DPV, and other entities | 2,440 | 0 | 425 | 398 | 3,263 | |
| 3.2 Program administration | 2,808 | 0 | 850 | 1,206 | 4,864 | |
| 3.3 Other studies (participatory road planning, support for CMVs, decentralized road management, etc.) | 2,513 | 0 | 1,320 | 240 | 4,073 | |
| 4. Monitoring and baseline | 700 | 0 | 300 | 0 | 1,000 | 0.6% |
| 5. Financial and operational audit | 300 | 0 | 300 | 0 | 600 | 0.4% |
| 6. Contingencies | 1,539 | 2,290 | 850 | 3,021 | 7,700 | 4.5% |
| 7. Financial costs | 0 | 0 | 0 | 0 | 0 | 0% |
| Program total | 65,600 | 29,000 | 50,000 | 25,400 | 170,000 | 100% |

C. Results framework with key indicators

- 1.21 The expected results are as follows: (i) better level of service on 4,800 km of the priority local roads network in the eastern region; (ii) lower transport costs and shorter travel times; and (iii) fewer days on which roads in the Program area are impassable or subject to major traffic restrictions. The Program also promotes decentralized management of the local roads network, based on rational use of the sector's public resources within a framework of fiscal prudence, gradually consolidating a modern and sustainable system for managing conservation on both the priority local road network and the rest of the country's local road system.²⁵

II. FINANCIAL STRUCTURE AND MAIN RISKS

A. Financing instruments

- 2.1 The program has a total cost of US\$170 million, to be financed as indicated in paragraph 1.20, with 80% of the Bank loan drawn from OC and 20% from the FSO. The expected execution period is five years.

²⁵ The indicators and their projected values are shown in detail in the Results Framework (Annex II).

B. Environmental and social risks

- 2.2 Phase I implementation, while achieving significant results (paragraph 1.7), also revealed aspects that will need to be improved to ensure adequate socioenvironmental management in Phase II and comply with Paraguay's current legislation²⁶ and the Bank's Safeguards Policy. Consequently, during preparation of this operation, an environmental and social management system (ESMS) was produced in conjunction with the Environmental Unit,²⁷ for application throughout the full cycle of the Program's projects. The ESMS satisfies the requirements of the Ministry of the Environment (SEAM),²⁸ and its major innovation is to propose a methodology for setting differentiated requirements for environmental and social impact assessment based on the projects' risk potential (*screening* and *scoping*). In addition, the ESMA identifies management tools and flows of procedures and responsibilities to be fulfilled by the MOPC/DCV/UA throughout the full project cycle. These will make it possible to record the results of application of this system, thereby enabling the Bank and SEAM to permanently monitor and control program execution in an organized and efficient manner. The project team also made an inspection visit to the local roads targeted in previous Bank operations, and to the sample of roads to be rehabilitated under this operation. For the latter, a rapid socioenvironmental analysis was made under the ESMS conceptual framework, consisting of identifying and classifying liabilities; potential impacts and the corresponding prevention, mitigation and environmental control measures, as well as actions to monitor works execution. The results of these visits and the analyses made confirm that the potential socioenvironmental impact of the sample projects will be direct, temporary, localized and of low intensity; and they will require specific management plans to be implemented for works activities and the associated areas (quarries and borrow pits, disposal of surplus material),²⁹ except for the Paso Yobai-San Agustín-Tuparendá-San Cristóbal segment, which will require an environmental control plan and institutional strengthening for all stakeholders. The budget for mitigating the identified impacts and the environmental management and control plans are included in the works budgets for each project.
- 2.3 Based on this, the Program's actions are not expected to generate significant negative impacts because they are on a small-to-medium scale and simple constructions, and the vast majority of them will be executed within the current

²⁶ Law 294/93 on Environmental Impact Assessment; Regulatory Decree 14.281/96 and Resolution SEAM 368/08.

²⁷ The ESMR-ESMS can be accessed through required electronic link 5.

²⁸ It is the implementing authority for Law 294/93, on Environmental Impact Assessment.

²⁹ The field visit also verified that the environmental liabilities on the Program's roads are insignificant, relating to localized erosion within the right of way and safety problems at a number places where the road passes through populated areas. The designs of the Phase II rehabilitation projects include provisions to correct these liabilities, and the cost is included in the works budget. For the roads covered by Phase I, the maintenance work envisaged includes the cost of correcting liabilities affecting the road's operation or those causing direct and continuous impact on adjacent properties.

right-of-way.³⁰ Low-income populations are not expected to be directly affected, and the Program will not include rural roads that cross protected environmental areas, or areas that are legally recognized as belonging to, and/or in the process of being officially reclaimed by, indigenous peoples.³¹ The rehabilitation of rural roads and implementation of sustainable maintenance mechanisms, such as those included in the MMP and through the CMVs, will naturally have positive socioenvironmental effects resulting from better drainage, control of erosion, better service conditions, road safety, correction of environmental liabilities, and training and use of unemployed local labor. For this reason, the Program has been classified as a "B" operation under the Bank's Environment Policy (OP-703). The operation was reviewed by the ESR at its meeting on 27 March 2009 (ESR 13-09), which confirmed the classification as presented in the project profile.

- 2.4 An important issue that was duly considered during preparation is the need to provide funds from this operation (US\$934,000) to support a socioenvironmental strengthening and training plan. Required electronic link 5 (IGAS-SIGAS) provides details in this regard.

C. Fiduciary risk

- 2.5 Institutional capacity was evaluated using the institutional capacity assessment system (ICAS),³² with the following results: (i) *Institutional*: The main risk concerns the move towards decentralized management of local roads promoted by the Program. Local governments might resist the transfer of responsibilities or reject the proposed institutional-financial plan. To mitigate this, gradual transition strategies will be developed, adequately supported by technical, institutional, and financial assistance from the DCV and the Program, to enable local governments to register their interest and participate actively, by acquiring the capacity needed to manage the local road network in their respective jurisdictions; and (ii) *Administrative-operational*: The risk here would be that the additional operational demand generated by the Program may exceed the institutional capacity of the DCV and MOPC in this domain. To implement Phase I—which is proceeding satisfactorily—a management system was set up based on the structural and functional organization structure of the DCV, strengthened by hiring additional professional staff, to ensure that the entity had staff familiar with the execution and administration required by the Bank. To ensure efficient Program management, funds have been provided to strengthen the operational capacity of the DCV and the Environmental Unit. The risks identified are considered mitigated with the

³⁰ The Program will not entail new road building, so the risk of indirect negative impacts associated with an increase in human activities is low, and damage to sensitive ecosystems is also unlikely. The only projects involving new construction are the replacement of small bridges that have now reached the end of their useful life; but the potential impacts of this are expected to be temporary, localized, and minor.

³¹ Nonetheless, if indigenous populations are present in the indirect area of influence of the projects, the Program will include the studies required by OP-765.

³² The institutional analysis is contained in optional electronic link 4.

proposed measures, together with the experience accumulated by the DCV in implementing projects with the Bank.

D. Other special issues and risks

- 2.6 **Technical and economic evaluation.** The Program has feasibility studies and engineering designs for a representative sample of rehabilitation works on 143 km of the main local roads.³³ The designs in question provide suitable technical solutions reflecting the prevailing features in the eastern region of the country, in terms of geomorphological, geotechnical, climatic, hydrological, and environmental conditions. The bridges to be built under the Program are 20 meters long on average. A comparison of wooden and concrete bridges showed that the latter would be more advisable, involving minimal maintenance and a load capacity allowing for all types of vehicles serving rural areas in this region of the country. Both the cost estimates and the construction periods envisaged are reasonable and consistent with current market values in the region and execution times observed in comparable works. For the economic evaluation of the program³⁴ a cost-benefit analysis was conducted of the rehabilitation of roads for the three projects in the representative sample, and for the 18 projects to replace small dilapidated wooden bridges with new ones made from reinforced concrete. The analysis produced results that show rates between 29% and 59%. In addition, under sensitivity analysis, each project maintains an economic rate of return above the 12% discount rate used.

III. EXECUTION AND ADMINISTRATION PLAN

A. Execution mechanism

- 3.1 The borrower will be the Republic of Paraguay, and the executing agency will be the MOPC, working mainly through the DCV and in close collaboration with the Environmental Unit, the DPV, and the Operational Contracting Unit (UOC) for execution of the Program's components, and also through the Office of the Deputy Minister for Administration and Finance (VMAF) in relation to the financial and accounting management of the resources.³⁵ In view of the satisfactory experience gained in executing NRRP-2 Phase I, keeping the Program support coordination unit within the DCV is proposed. This covers direct responsibility for most of the processes involved in managing execution. Gradual strengthening of the organizational and functional structure of this department in accordance with demand is also proposed (paragraph 2.5).
- 3.2 The Program will have clearly establish procedures in its Operating Manual, including criteria, procedures, institutional arrangements, performance, tracking,

³³ Colonia Iruña-Maestro Fermín-Empalme Ruta Frutika-Mayor Otaño: 28.7 km; Super highway-Asentamiento Santa María: 48.8 km; and Paso Yobai-San Agustín-Tuparendá-San Cristóbal: 65.7 km.

³⁴ The economic analysis is presented in required electronic link 7.

³⁵ Everything related to disbursements and management of the revolving fund and special account.

- and monitoring standards established in the ESMR (of 01/06/09); agreements governing relations between the parties involved, and a wide-ranging system of monitoring, tracking, and evaluation of actions and results, both of the executing agency on local governments, and by the external technical-operational and accounting-financial auditors. The Operating Manual, duly approved by the MOPC and in force with the Bank's prior no objection, will be a condition precedent to the first disbursement.
- 3.3 To be eligible for rehabilitation with Program funding, the main road segments must satisfy the following criteria: (i) to have been given priority and been selected through a participatory road plan duly developed and approved by the Municipal Association, and to demonstrate that all the beneficiary municipal governments of the road to be rehabilitated have expressed their commitment to cofinance its routine maintenance, in accordance with their average financial capacities; (ii) to satisfy the requirements set out in the Program's ESMS; (iii) to have a technical rehabilitation standard adapted to the geographic characteristics of the area through which the road passes, and in accordance with the nature and level of demand; and (iv) to have an economic internal rate of return above 12%.
- 3.4 The DCV will provide support for various aspects of Program execution, including the coordination of activities with other MOPC divisions and the national and local government agencies involved; and it will act as a liaison between the executing agency and the Bank, with responsibility for preparing reports and timely fulfillment of obligations set out in the loan contracts. Among other things, it will be responsible for: (i) planning loan execution and formulating annual work plans (AWPs) and the procurement plan; (ii) supporting the preparation of bidding documents for consulting service and works contracting, and for goods procurement; (iii) participating on committees to evaluate and select the corresponding proposals and support procedures for the respective contracting process; (iv) monitoring, supervising, and technically overseeing the execution of Program studies and works; (v) preparing and supporting the processing of payments corresponding to the certificates of completion for studies, supervision, and works; (vi) supporting the preparation of accounting reports and disbursement requests; and (vii) being responsible for monitoring, tracking, and evaluating the operation's implementation and the results achieved, for which it will implement suitable information systems. The executing agency will be responsible for: (i) implementing and maintaining adequate systems for contract management, accounting-financial administration, and the internal oversight system for managing Program resources, pursuant to the Bank's requirements and independently from other Programs managed by the MOPC; (ii) timely presentation of disbursement requests and vouchers for eligible expenses; (iii) preparation and presentation of semiannual reports on the revolving fund, consolidated Program financial reports, and other required reports; (iv) managing the opening, and maintenance throughout the program execution period, of an exclusive bank account ("specific special account"), to manage the Bank's funding separately from other sources; and

- (v) maintaining an adequate system for filing the documentation to support eligible expenses for verification by the Bank and the external auditors.
- 3.5 **Procurement.** The Bank and JICA have agreed to divide the Program's procurement and contracting processes.³⁶ Those corresponding to the Bank will be undertaken in accordance with *Policies for the procurement of works and goods financed by the IDB* (document GN-2349-7) and *Policies for the selection and contracting of consultants financed by the IDB* (document GN-2350-7), respectively, both of July 2006.
- 3.6 **Revolving fund.** For the purpose of making Program disbursements, a revolving fund of up to 5% of the total loan amount will be set up, pursuant to the Bank's procedures, to be deposited in a specific account opened for that purpose. The executing agency will be responsible for: controlling the use of the fund, preparing disbursement requests on behalf of the borrower, and submitting semiannual reports on the fund's status to the Bank, within 60 days following the end of each calendar six-month period.
- 3.7 **Disbursements.** Disbursement requests will be accompanied by the supporting documents required by the Bank under the ex ante review modality. Nonetheless, if the Bank considers that there is adequate proven institutional capacity in terms of financial management and oversight, it may decide to supervise the operation on an ex post basis.
- B. Summary of monitoring and evaluation measures**
- 3.8 The monitoring arrangements include audits, administration missions, semiannual status reports, AWP's, and annual external audits. Details of these activities can be found in required electronic link 4 "Monitoring and evaluation arrangements"
- C. Significant activities post approval**
- 3.9 With a view to speeding up the start of Program execution, the Bank will provide permanent support to the executing agency, particularly during the period in which the Program is going through the legislative approval process and while it works to fulfill the conditions precedent to the first disbursement. This support will involve consultants hired with administrative and technical cooperation resources, and a substantial assignment of sector specialists to support the executing agency in starting execution, including preparation of the program's final Operating Manual, and its approval and implementation by the MOPC; preparation of bidding documents; and dissemination and training for local governments on decentralized road management issues, clarifying technical-administrative-legal and socioenvironmental aspects related to the institutional and financial structure and

³⁶ To avoid execution difficulties, it has been agreed that JICA funds will be used mainly in the Departments of Guairá, Misiones and Paraguarí, and that the procurement of works, goods, and services will be funded exclusively with its resources—without establishing a *pari passu* with the Bank—pursuant to its policies and procedures and applying its standard documents.

with the ESMS. Most of the support is expected to be provided during the eight months following loan approval.

CONFIDENTIAL INFORMATION

PARAGUAY
NATIONAL RURAL ROADS PROGRAM - SECOND STAGE - PHASE II
(PR-L1019)

Results Framework - Indicators Matrix

| | | | |
|--|---|------------------------------|--|
| General program objective: | To enhance the competitiveness of national production and raise living standards among the rural population. | | |
| Program purpose: | To upgrade and maintain the level of service on a substantial part of the priority local roads network in the eastern part of the country, through: (i) a sustainable and integrated improvement in road infrastructure and rural transport services; (ii) reduction in transport costs and travel times; (iii) gradual development of efficient and sustainable systems for decentralized management of the rural road system; and (iv) extension and conservation of rural road assets. | | |
| Results indicators | Baseline | Target | Comments |
| Increase in the percentage of roads in good/average state of repair on the priority local roads network (6,000 km) in the eastern region of the country. | Year 0 = 40% good and average | Year 5 = 80% good | The state of repair noted in the monthly supervision report will be assessed, considering the condition of the road surface, drainage system, right-of-way, signposting, and other. |
| Average reduction in travel time and vehicle operating costs on the roads rehabilitated by the Program, maintaining this level 3 years after they are opened to traffic. | Year 0 = 0% | Year 5=10% | Vehicle operating costs will be calculated by the DCV using the HDM model. Costs will be evaluated using current input and yield values at the time of the evaluation. The model will also be applied under constant input cost and yield assumptions to measure the impact attributable to the project. |
| More favorable user opinions regarding the road network segments targeted by the program. | Year 0 = to be determined | Year 5 = increase \geq 20% | Annual surveys will be conducted using an agreed-upon methodology to gauge users' opinions on the service provided by the segments targeted by the program, both in the field and in centers/associations encompassing key informants. |
| Municipal association road management units (GVs) take over decentralized management of the local roads network. | Year 0= 0 GV | Year 5= 2 GV | The Program's tracking and monitoring reports will be considered. |

| Objective of the civil works component | (i) To raise 1,150 km of main local roads—given priority and selected through participatory departmental road plans—to a standard that ensures acceptable serviceability throughout the year, adequate road safety, and environmental mitigation measures; (ii) to conserve rural road assets on the priority network in eastern Paraguay by undertaking maintenance work on approximately 4,200 km—previously targeted in NRRP-1 and Phase 1 of NRRP-2, and to be rehabilitated in this Phase II—through agreements with local governments and communities and outsourcing, including the CMVs to be promoted by this operation; (iii) to ensure adequate levels of reliable serviceability in the local secondary roads network by refurbishing and/or replacing approximately 2,300 lineal meters of small dilapidated wooden bridges with bridges made of reinforced concrete; and (iv) to improve the quality of life of communities located in the project's area of influence, and to promote community work and effort, by executing gravel surfacing work on roughly 500 urban or semiurban streets in these communities, under agreement with the local government. | | | | | | | |
|---|---|---------|----------|----------|---------|--------|----------|---|
| Civil works component | Base | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Target | Comments |
| Outputs | | | | | | | | |
| Extension of local roads in the priority network rehabilitated with a service level that ensures permanent serviceability, adequate road safety, and environmental mitigation measures. | 1,080 km | - | 140 km | 400 km | 310 km | 300 km | 2,230 km | Program monitoring and tracking reports will be considered based on the NRRP-2 integrated monitoring and evaluation system and the georeferenced inventory of the local road network, as well as inspection reports and technical-environmental works inspection, and monthly reports from supervision. |
| Extension of local roads on the priority network under maintenance (through agreements, contracts, with CMVs, or by direct administration). | 2,600 km | 410 km | 550 km | 520 km | 420 km | 300 km | 4,800 km | |
| Rehabilitation and/or replacement of small wooden bridges in poor state of repair, with bridges made of reinforced concrete. | 0 | 300 m | 500 m | 500 m | 500 m | 500 m | 2,300 m | |
| Extension of the main urban streets with gravel surfacing. | 0 | 5 towns | 10 towns | 10 towns | 5 towns | - | 30 towns | |

| | |
|---|---|
| Objective of the institutional strengthening component | Modernization and strengthening of the subsector's institutional structure, to develop and consolidate a decentralized management model for the local network, with greater participation by local governments, among other things through: (a) institutional strengthening of the DVC to consolidate it as the subsector's lead agency, providing timely technical, institutional, and financial assistance required by the local governments participating in the Program; (b) strengthening of operational capacity and human resources of the MOPC's Environmental Unit, for effective development of socioenvironmental management throughout the full cycle of each project; (c) support for development and monitoring of participatory road planning tasks at the departmental level, including methodological updating, complementarity with other national and/or regional agencies, and linkage with annual investment and maintenance plans; (d) development and training of CMVs and the hiring of technical and business monitors to support them until they acquire the capacity needed to fulfill their tasks; (e) support for creating and strengthening road management units within the municipal associations in each department, as a professionalized technical-administrative unit capable of gradually taking over decentralized management of the local roads network in their respective jurisdictions. |
|---|---|

| Institutional strengthening component | Base | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Target | Comments |
|---|-------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|--|
| Outputs The DVC consolidated in the MOPC as subsector's lead agency | N/A | Timely filing of reports | Timely filing of reports | Timely filing of reports | Timely filing of reports | Timely filing of reports | DCV operation rated as competent. | DCV management will be evaluated through semiannual and annual Program monitoring reports |
| The environmental unit has tools to improve environmental management in the full cycle of a road project. | N/A | Timely filing of reports | Timely filing of reports | Timely filing of reports | Timely filing of reports | Timely filing of reports | Operation of the Environmental Unit rated as competent. | The environmental unit has a trained technical team and tools that make it possible to systemize and consolidate environmental management processes. |
| Road management units created and operating within municipal associations. | 0 | 2 | - | - | - | - | 2 | The Program's monitoring and tracking reports and monthly supervision reports will be reviewed. |
| CMVs created and operating within the program. | 2 | 2 | 5 | 5 | 5 | 6 | 25 | The Program's monitoring and tracking reports and monthly supervision reports will be reviewed. |

| | | | | | | | | |
|---|---|---|---|---|---|---|----|---|
| Participatory road plans approved | 3 | 7 | 3 | - | - | - | 13 | The Program's monitoring and tracking reports and monthly supervision reports will be reviewed. |
| Support for decentralization processes. Reports on the institutional and financial capacity of the eastern region's departments. | 2 | 7 | 3 | - | - | - | 13 | The Program's monitoring and tracking reports and monthly supervision reports will be reviewed. |

PARAGUAY
NATIONAL RURAL ROADS PROGRAM-SECOND STAGE-PHASE II
(PR-L1019)

Summary Procurement Plan

| Ref. No. | AWP Code | Category and description of procurement contract | Estimated cost (US\$) | Procurement Method | Review | Source of Financing | | Pre-qualification | Estimated dates | | Status | Comments |
|----------|----------|--|-----------------------|--------------------|---------|---------------------|-------|-------------------|-----------------|----------------------|--------|--|
| | | | | | | IDB | Other | Yes/No | Publication SPN | Termination Contract | | |
| WORKS | | | | | | | | | | | | |
| 1 | 1.1.1 | Sample rehabilitation works (200 km). | 11,000,000 | ICB/NCB | ex ante | 51% | 49% | No | II/2009 | I/2012 | - | Involves four contracts for an average value of US\$2 million each to be awarded at different times, and one for US\$4 million |
| 2 | 1.1.2 | New rehabilitation works Group 1 (200 km). | 9,000,000 | NCB | ex ante | 62% | 38% | No | I/2011 | II/2013 | - | Involves four contracts for an average value of US\$2.2 million each to be awarded at different times. |
| 3 | 1.1.3 | New rehabilitation works Group 2 (200 km). | 9,000,000 | NCB | ex ante | 62% | 38% | No | I/2011 | I/2014 | - | Involves four contracts for an average value of US\$2.2 million each to be awarded at different times. |
| 4 | 1.1.4 | New rehabilitation works Group 3 (150 km). | 8,000,000 | NCB | ex ante | 57% | 43% | No | I/2011 | I/2014 | - | Involves four contracts for an average value of US\$2 million each to be awarded at different times. |
| 5 | 1.1.5 | New rehabilitation works Group 4 (400 km). | 33,000,000 | - | - | - | 100% | - | II/2011 | II/2014 | - | Involves several procurement processes. JICA procurement policies apply. |
| 6 | 1.2.1 | Construction works on reinforced concrete bridges (1,400 linear meters). | 16,800,000 | S | ex ante | 60% | 40% | No | II/2010 | II/2014 | - | Involves several contracts averaging less than US\$200,000 each to be awarded at different times. |
| 7 | 1.2.2 | Construction works on reinforced concrete bridges (900 linear meters). | 13,200,000 | - | - | - | 100% | - | II/2010 | II/2014 | - | Involves several procurement contracts. JICA procurement policies apply. |
| 8 | 1.3.1 | Gravel surfacing in urban areas Group 1. | 800,000 | NCB | ex ante | 70% | 30% | No | I/2011 | II/2013 | - | Involves several contracts to be executed in different geographic areas and at different times. |
| 9 | 1.3.2 | Gravel surfacing in urban areas Group 2. | 600,000 | NCB | ex ante | 70% | 30% | No | I/2011 | II/2013 | - | Involves several contracts to be executed in different geographic areas and at different times. |
| 10 | 1.3.3 | Gravel surfacing in urban areas Group 3. | 600,000 | NCB | ex ante | 70% | 30% | No | I/2011 | II/2013 | - | Involves several contracts to be executed in different geographic areas and at different times. |

| Ref. No. | AWP Code | Category and description of procurement contract | Estimated cost (US\$) | Procurement Method | Review | Source of Financing | | Pre-qualification | Estimated dates | | Status | Comments |
|----------|----------|--|-----------------------|--------------------|---------|---------------------|-------|-------------------|-----------------|----------------------|--------|---|
| | | | | | | IDB | Other | Yes/No | Publication SPN | Termination Contract | | |
| WORKS | | | | | | | | | | | | |
| 11 | 2.1.2 | Maintenance works under contract (480 km). | 5,400,000 | NCB | ex ante | 50% | 50% | No | II/2009 | II/2014 | - | Involves several service level maintenance contracts to be awarded in different municipios. |
| 12 | 2.2.2 | Maintenance works under contract (800 km). | 7,200,000 | NCB | ex ante | 49% | 51% | No | II/2009 | II/2014 | - | Involves several service level maintenance contracts to be awarded in different municipios. |
| 13 | 2.3.1 | Sample works maintenance (200 km). | 785,000 | DC | ex ante | 44% | 56% | No | I/2012 | II/2014 | - | Involves several maintenance contracts to be awarded in different municipios through CMVs. |
| 14 | 2.3.2 | Maintenance on Group 1 works (200 km). | 785,000 | DC | ex ante | 44% | 56% | No | II/2012 | II/2014 | - | Involves several maintenance contracts to be awarded in different municipios through CMVs. |
| 15 | 2.3.3 | Maintenance on Group 2 works (200 km). | 590,000 | DC | ex ante | 45% | 55% | No | I/2013 | II/2014 | - | Involves several maintenance contracts to be awarded in different municipios through CMVs. |
| 16 | 2.3.4 | Maintenance on Group 3 works (150 km). | 390,000 | DC | ex ante | 38% | 63% | No | I/2013 | II/2014 | - | Involves several maintenance contracts to be awarded in different municipios through CMVs. |
| 17 | 2.3.5 | Maintenance on Group 4 works (400 km). | 1,950,000 | DC | ex ante | | 100% | No | I/2013 | II/2014 | - | Involves several maintenance contracts to be awarded in different municipios through CMVs. |
| 18 | 2.1.1 | Maintenance works by agreement (600 km). | 6,600,000 | DC | ex ante | 51% | 49% | No | I/2010 | II/2014 | - | Executed through agreements with local governments with resource transfers. |
| 19 | 2.2.1 | Maintenance works by agreement (1,200 km). | 10,800,000 | DC | ex ante | 50% | 50% | No | I/2010 | II/2014 | - | Executed through agreements with local governments with resource transfers. |
| 20 | 3.1.3 | Procurement of small-scale works. | 10,000 | S | ex ante | 80% | 20% | No | I/2010 | I/2010 | - | |

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|---------------------|----------|---|-----------------------|--------------------|---------|---------------------|-------|-------------------|-----------------|---------------------|--------|--|
| | | | | | | IDB | Other | Yes/No | Publication SPN | Contract completion | | |
| CONSULTING SERVICES | | | | | | | | | | | | |
| 21 | 1.4.1 | Engineering studies and design - Group 1 (200 km). | 750,000 | QCBS | ex ante | 73% | 27% | No | II/2010 | II/2011 | - | Involves several procurement processes. |
| 22 | 1.4.2 | Engineering studies and design - Group 2 (200 km). | 750,000 | QCBS | ex ante | 73% | 27% | No | II/2010 | II/2011 | - | Involves several procurement processes. |
| 23 | 1.4.3 | Engineering studies and design - Group 3 (150 km). | 560,000 | QCBS | ex ante | 71% | 29% | No | II/2010 | II/2011 | - | Involves several procurement processes. |
| 24 | 1.4.4 | Engineering studies and design - Group 4 (400 km). | 1,440,000 | - | - | - | 100% | - | II/2010 | I/2012 | - | JICA procurement policies apply. |
| 25 | 1.4.5 | Studies and design for bridge construction (1,400 linear meters). | 840,000 | QCBS | ex ante | 71% | 29% | No | II/2009 | II/2010 | - | Involves several procurement processes. |
| 26 | 1.4.6 | Studies and design for bridge construction (900 linear meters). | 660,000 | - | - | - | 100% | - | II/2009 | II/2010 | - | JICA procurement policies apply. |
| 27 | 1.5.1 | Supervision of sample works (200 km). | 820,000 | QCBS | ex ante | 68% | 32% | No | II/2009 | I/2012 | - | Involves several procurement processes. |
| 28 | 1.5.2 | Supervision of new works Group 1 (200 km). | 750,000 | QCBS | ex ante | 70% | 30% | No | I/2011 | II/2013 | - | Involves several procurement processes. |
| 29 | 1.5.3 | Supervision of new works Group 2 (200 km). | 750,000 | QCBS | ex ante | 70% | 30% | No | I/2011 | I/2014 | - | Involves several procurement processes. |
| 30 | 1.5.4 | Supervision of new works Group 3 (150 km) | 564,000 | QCBS | ex ante | 62% | 38% | No | I/2011 | I/2014 | - | Involves several procurement processes. |
| 31 | 1.5.5 | Supervision of new works Group 4 (400 km). | 2,016,000 | - | - | - | 100% | - | II/2011 | II/2014 | - | JICA procurement policies apply. |
| 32 | 1.5.6 | Supervision of bridge construction works (1,400 linear meters). | 1,176,000 | IICQ | ex ante | 71% | 29% | No | II/2010 | II/2014 | - | Involves several procurement processes. |
| 33 | 1.5.7 | Supervision of bridge construction works (900 linear meters). | 924,000 | - | - | - | 100% | - | II/2010 | II/2014 | - | JICA procurement policies apply. |
| 34 | 3.1.1 | Contracting of specialized support for Program execution. | 3,964,000 | NICQ/DC | ex ante | 54% | 46% | No | I/2010 | II/2014 | - | The professionals currently under contract to support Phase I execution can be hired directly for the execution of Phase II. In some cases, JICA procurement policies apply. |

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|---------------------|----------|--|-----------------------|--------------------|---------|---------------------|-------|-------------------|-----------------|---------------------|--------|---|
| | | | | | | IDB | Other | Yes/No | Publication SPN | Contract completion | | |
| CONSULTING SERVICES | | | | | | | | | | | | |
| 35 | 3.1.4.1 | Road planning management manuals and guidelines. | 30,000 | NICQ | ex ante | 37% | 63% | No | I/2010 | II/2010 | - | |
| 36 | 3.1.4.2 | Updating and expansion of the road inventory. | 500,000 | QCBS | ex ante | 70% | 30% | No | I/2010 | II/2011 | - | |
| 37 | 3.1.4.3 | Updating and adaptation of unit prices for local roads. | 30,000 | IICQ | ex ante | 100% | | No | I/2010 | I/2011 | - | |
| 38 | 3.1.5 | Training and technical assistance for the DCV. | 100,000 | NICQ | ex ante | 80% | 20% | No | I/2010 | II/2014 | - | Includes several individual contracting processes. |
| 39 | 3.2.1.1 | Contracting of GV technical support team - Alto Paraná. | 304,800 | NICQ | ex ante | 100% | - | No | I/2010 | II/2014 | - | |
| 40 | 3.2.1.3 | GV training, departmental government, Alto Paraná Municipios Association, on decentralized management of the local road network. | 100,000 | NICQ | ex ante | 100% | - | No | I/2010 | II/2014 | - | |
| 41 | 3.2.2.1 | Contracting of GV technical support team - Itapúa | 304,800 | NICQ | ex ante | 100% | - | No | I/2010 | II/2014 | - | Involves several procurement processes. |
| 42 | 3.2.2.3 | GV training, departmental government, Itapúa Municipios Association, on decentralized management of the local road network. | 100,000 | NICQ | ex ante | 100% | - | No | I/2010 | II/2014 | - | |
| 43 | 3.2.3.1 | Contracting of GV technical support team - other departments. | 1,524,000 | NICQ | ex ante | 14% | 86% | No | II/2010 | II/2014 | - | Involves several procurement processes. In some cases, JICA procurement policies apply. |
| 44 | 3.2.3.3 | GV training, departmental government, Itapúa Municipios Association, on decentralized management of the local road network. | 500,000 | NICQ | ex ante | 100% | | No | II/2010 | II/2014 | - | Involves several procurement processes. |
| 45 | 3.3.1 | Participatory road planning Group 1 (four departments). | 255,000 | QCBS | ex ante | 100% | | No | II/2009 | II/2010 | - | |
| 46 | 3.3.2 | Participatory road planning Group 2 (three departments). | 170,000 | QCBS | ex ante | 100% | | No | II/2009 | II/2010 | - | |

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|---------------------|----------|---|-----------------------|--------------------|---------|---------------------|-------|-------------------|-----------------|---------------------|--------|--|
| | | | | | | IDB | Other | Yes/No | Publication SPN | Contract completion | | |
| CONSULTING SERVICES | | | | | | | | | | | | |
| 47 | 3.3.3 | Participatory road planning Group 3 (three departments). | 170,000 | QCBS | ex ante | 100% | | No | II/2009 | II/2010 | - | |
| 48 | 3.3.4 | Participatory road planning Group 4 (three departments). | 255,000 | - | - | - | 100% | - | I/2010 | II/2010 | - | JICA procurement policies apply. |
| 49 | 3.4.1 | Contracting of specialized support for institutional capacity strengthening of the MOPC's DPV. | 360,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | II/2014 | - | Involves several procurement processes. |
| 50 | 3.4.3 | Training, seminars, and technical assistance for the DPV. | 50,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | II/2014 | - | |
| 51 | 3.4.4 | Preparation of manuals of procedure for the DPV. | 50,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | I/2011 | - | |
| 52 | 3.4.5 | Development of a comprehensive georeferenced system of the inventoried road network. | 100,000 | QCBS | ex ante | 90% | 10% | No | I/2010 | II/2011 | - | |
| 53 | 3.5.1 | Contracting of specialized support for MOPC socioenvironmental management strengthening. | 594,000 | NICQ | ex ante | 80% | 20% | No | I/2010 | II/2014 | - | Involves several procurement processes. |
| 54 | 3.5.3.1 | Training and technical assistance for the environmental unit and MOPC technical staff on social and environmental issues. | 50,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | II/2014 | - | |
| 55 | 3.5.3.2 | Preparation of a georeferenced socioenvironmental information system and tracking, monitoring, and oversight of the Environmental Unit's environmental and social management. | 30,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | I/2011 | - | |
| 56 | 3.5.3.3 | Training of consultants and contractors on socioenvironmental issues. | 25,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | II/2014 | - | |
| 57 | 3.5.3.4 | Training and technical assistance to Municipal Associations, GVs, CMVs and road monitors on socioenvironmental issues. | 40,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | II/2014 | - | |
| 58 | 3.5.3.5 | Workshops to disseminate and raise awareness among communities, transport operators, and producers. | 10,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | II/2014 | - | |
| 59 | 3.5.3.6 | SEAM strengthening. | 60,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | II/2014 | - | Involves several individual contracting processes. |

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|---------------------|----------|--|-----------------------|--------------------|---------|---------------------|-------|-------------------|-----------------|---------------------|--------|---|
| | | | | | | IDB | Other | Yes/No | Publication SPN | Contract completion | | |
| CONSULTING SERVICES | | | | | | | | | | | | |
| 60 | 3.5.3.7 | GETS updating. | 25,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | II/2010 | - | |
| 61 | 3.5.3.8 | Preparation of the environmental oversight plan for the Paso Yobai - San Cristobal road segment. | 25,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | II/2010 | - | |
| 62 | 3.6.1 | Contracting of specialized support to strengthen the decentralization of local roads in the DCV. | 934,800 | NICQ | Ex ante | 43% | 57% | No | I/2010 | II/2014 | - | In some cases, JICA procurement policies apply. |
| 63 | 3.6.2 | Contracting of specialized support for the promotion of CMVs. | 530,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | II/2014 | - | Involves several individual contracting processes. |
| 64 | 3.6.4 | Preparation of legal, institutional, and financial study and analysis of local governments. | 155,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | II/2014 | - | Involves several individual contracting processes. |
| 65 | 3.6.5 | Training on decentralization issues. | 40,000 | NICQ | ex ante | 90% | 10% | No | I/2010 | II/2014 | - | Involves several individual contracting processes. |
| 66 | 4. | Monitoring, baseline, midterm evaluation and impact evaluation. | 1,000,000 | QCBS | ex ante | 70% | 30% | No | I/2010 | II/2014 | - | Involves two procurement processes: one by the IDB and the other by JICA In the latter case, JICA procurement policies apply. |
| 67 | 5. | External audit of the Program. | 600,000 | QCBS | ex ante | 50% | 50% | No | I/2010 | II/2014 | - | Involves two procurement processes one by the IDB and the other by JICA In the latter case, JICA procurement policies apply. |

| Ref. No. | AWP Code | Category and description of procurement contract | Estimated cost (US\$) | Procurement method | Review | Source of Financing | | Pre-qualification | Estimated dates | | Status | Comments |
|----------|----------|--|-----------------------|--------------------|---------|---------------------|-------|-------------------|-----------------|-----------------|--------|--|
| | | | | | | IDB | Other | | Yes/No | SPN publication | | |
| GOODS | | | | | | | | | | | | |
| 68 | various | Procurement of computer hardware and measurement equipment to strengthen the DCV and other units involved. | 223,600 | NCB | ex ante | 87% | 13% | No | I/2010 | I/2010 | - | Involves logistical support for institutional strengthening of the DCV and other units involved (AWP Code 3.1.2, 3.2.1.2, 3.2.2.2, 3.4.2, 3.5.2, 3.6.3). |
| 69 | various | Procurement of furnishings to strengthen the DCV and other units involved. | 27,000 | S | ex ante | 87% | 13% | No | I/2010 | I/2010 | - | Involves logistical support for institutional strengthening of the DCV and other units involved (AWP Code 3.1.2, 3.2.1.2, 3.2.2.2, 3.4.2, 3.5.2, 3.6.3). |
| 70 | various | Procurement of vehicles for strengthening the DCV and other units involved. | 275,000 | ICB | ex ante | 87% | 13% | No | I/2010 | I/2010 | - | Involves logistical support for institutional strengthening of the DCV and other units involved (AWP Code 3.1.2, 3.2.1.2, 3.2.2.2, 3.4.2, 3.5.2, 3.6.3). |
| 71 | various | Procurement of computer hardware and measuring equipment to strengthen the GVs in other departments. | 97,000 | NCB | ex ante | 100% | | No | I/2011 | I/2011 | - | Involves logistical support for institutional strengthening of the GVs in other departments AWP 3.2.3.2). |
| 72 | various | Procurement of furnishings to strengthen the GVs in other departments. | 6,000 | S | ex ante | 100% | | No | I/2011 | I/2011 | - | Involves logistical support for institutional strengthening of the GVs in other departments AWP 3.2.3.2). |
| 73 | various | Procurement of vehicles to strengthen the GVs in other departments. | 175,000 | NCB | ex ante | 100% | | No | I/2011 | I/2011 | - | Involves logistical support for institutional strengthening of the GVs in other departments AWP 3.2.3.2). |

Goods and works: ICB: International competitive bidding; LIB: Limited International Bidding NCB: National competitive bidding; S: Shopping; DC: Direct contracting FA: Force account; PSA: Procurement through specialized agencies; PA: Procurement agents; IA: Supervision agents; PLFI: Procurement in loans to financial intermediaries; BOO/BOT/BOOT: Build, own, operate/build, operate, transfer/build, own, operate, transfer; PBP: Performance-based procurement; PLGB: Procurement under loans guaranteed by the Bank; CPP: Community participation in procurement.

Consulting firms: QCBS: Quality- and cost-based selection; QBS: Quality-based selection; FBS: Selection under a fixed budget; LCS: Least-cost selection; CQS: Selection based on the consultants' qualifications; SSS: Single source selection.

Individual consultants: NICQ: National individual consultant—selection based on qualifications. IICQ: International individual consultant—selection based on qualifications.