

Document of
The World Bank

Report No: 25118

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED LOAN
IN THE AMOUNT OF US\$46.7 MILLION
TO THE
REPUBLIC OF GUATEMALA
FOR THE
SECOND RURAL AND MAIN ROADS PROJECT

April 10, 2003

Finance, Private Sector and Infrastructure Department
Central America Country Management Unit
Latin America and Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective)

Currency Unit = LC

1 Quetzales = US\$0.1282

US\$1 = 7.8 Quetzales

FISCAL YEAR

January -- December

ABBREVIATIONS AND ACRONYMS

AADT	- Annual Average Daily Traffic
ADMIMAM	- Association of Municipalities in the Highlands of San Marcos <i>Asociación de Desarrollo Integral de Municipalidades del Altiplano Marquense</i>
BCIE	- Central American Bank for Economic Integration <i>Banco Centroamericano de Integración Económica</i>
CAE	- Country Assistance Evaluation
CAS	- Country Assistance Strategy
COFINEX	- Foreign Financing Coordination Unit <i>Coordinadora de Financiamiento Externo</i>
COVIAL	- National Road Fund
DGA	- Environmental Management Department <i>Departamento de Gestión Ambiental</i>
DGC	- General Roads Directorate <i>Dirección General de Caminos</i>
EA	- Environmental Assessment
EMP	- Environmental Mitigation Plan
ER	- Environmental Report
ERP	- Poverty Alleviation Strategy <i>Estrategia de Reducción de la Pobreza</i>
FIS	- Social Fund <i>Fondo de Inversión Social</i>
FONAPAZ	- National Fund for Peace <i>Fondo Nacional para la PAZ</i>
FUNCEDE	- Central American Development Foundation <i>Fundación Centroamericana de Desarrollo</i>

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FVR	- Regional Road Fund <i>Fondo Vial Regional</i>
GUAPA	- Guatemala Poverty Assessment
GoG	- Government of Guatemala
HDM	- Highway Design and Maintenance
IDB	- Interamerican Development Bank
INFOM	- Municipal Development Institute <i>Instituto de Fomento Municipal</i>
INTECAP	- Technical Institute for Training and Productivity <i>Instituto Técnico de Capacidad y Productividad</i>
IRR	- Internal Rate of Return
ISV	- Road Selection Index <i>Indice de Selección Vial</i>
LSMS	- Living Standards Measurement Study
MAMSOHUE	- Association of Municipalities in the South West of Huehuetenango <i>Mancomunidad del Sur Occidente de Huehuetenango</i>
MARN	- Ministry of Environment and Natural Resources <i>Ministerio del Ambiente y de los Recursos Naturales</i>
MCIV	- Ministry of Communications, Infrastructure and Housing <i>Ministerio de Comunicaciones, Infraestructura y Vivienda</i>
ME	- Micro-Enterprise
NVP	- Net Present Value
PCA	- Procurement Capacity Assessment
PCU	- Project Coordination Unit
PRA	- Project Responsible Agency
RED	- Road Economic Development
RMRP	- Rural and Main Roads Project
RRTS	- Rural Roads and Transport Strategy
SMRRPP	- San Marcos Rural Roads Pilot Project
UCBM	- World Bank Project Coordination Unit <i>Unidad Coordinadora Banco Mundial</i>
UTAV	- Roads Technical Unit <i>Unidad Técnica de Asistencia Vial</i>
VOC	- Vehicle Operating Costs

GUATEMALA
SECOND RURAL AND MAIN ROADS PROJECT

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MAP(S)

IBRD 32242: Four Year Program, Poverty Map
 IBRD 32402: First Year Program

GUATEMALA
SECOND RURAL AND MAIN ROADS PROJECT

Project Appraisal Document

Latin America and Caribbean Region
LCSFT

Date: April 10, 2003	Team Leader: Guillermo Ruan
Sector Manager/Director: Danny M. Leipziger	Sector(s): Roads and highways (90%), Sub-national government administration (10%)
Country Manager/Director: Jane Armitage	Theme(s): Rural services and infrastructure (P), Civic engagement, participation and community driven development (S)
Project ID: P055085	
Lending Instrument: Specific Investment Loan (SIL)	

Project Financing Data																
<input checked="" type="checkbox"/> Loan	<input type="checkbox"/> Credit	<input type="checkbox"/> Grant	<input type="checkbox"/> Guarantee	<input type="checkbox"/> Other:												
For Loans/Credits/Others:																
Loan Currency: United States Dollar Amount (US\$m): 46.70 Borrower Rationale for Choice of Loan Terms Available on File: <input checked="" type="checkbox"/> Yes Proposed Terms (IBRD): Fixed-Spread Loan (FSL) Grace period (years): 5 Years to maturity: 17 Front end fee (FEF) on Bank loan: 1.00% Payment for FEF: Capitalize from Loan Proceeds																
Initial choice of Interest-rate basis:																
Type of repayment schedule:																
<input type="checkbox"/> Fixed at Commitment, with the following repayment method (choose one): <input checked="" type="checkbox"/> Linked to Disbursement																
Financing Plan (US\$m): Source Local Foreign Total <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">BORROWER</td> <td style="width: 20%;">17.02</td> <td style="width: 20%;">0.00</td> <td style="width: 20%;">17.02</td> </tr> <tr> <td>IBRD</td> <td>0.00</td> <td>46.70</td> <td>46.70</td> </tr> <tr> <td>Total:</td> <td>17.02</td> <td>46.70</td> <td>63.72</td> </tr> </table>					BORROWER	17.02	0.00	17.02	IBRD	0.00	46.70	46.70	Total:	17.02	46.70	63.72
BORROWER	17.02	0.00	17.02													
IBRD	0.00	46.70	46.70													
Total:	17.02	46.70	63.72													
Borrower: REPUBLIC OF GUATEMALA Responsible agency: MCIV & INFOM MCIV - Ministry of Communications, Infrastructure and Housing (Ministerio de Comunicaciones, Infraestructura y Vivienda) Address: Guatemala City Contact Person: Flora Escobar de Ramos, Minister Tel: 502-362-6057 Fax: 502-362-6059 Email: Other Agency(ies): INFOM - Municipal Development Institute (Instituto de Fomento Municipal) Address: Guatemala City Contact Person: Luis Corletto, General Manager Tel: 502-336-8103 Fax: 502-334-6735 Email:																

Estimated Disbursement in US\$m Equivalent (Bank FY/Semesters):

FY	2004	2005	2006	2007	2008	2009	2010	2011
Source	Sem. 1 Sem. 2	Sem. 1 Sem. 2	Sem. 1 Sem. 2	Sem. 1 Sem. 2				
IBRD	5.00	15.00	13.35	13.35				
Cumulative	\$5.00	\$20.00	\$33.35	\$46.70				

Project implementation period: 4 years

Expected effectiveness date: 12/01/2003 **Expected closing date:** 12/31/2007

OPCB PAD Form Rev March, 2000

A. Project Development Objective

1. Project development objective: (see Annex 1)

“(To have) a good road (un buen camino)” – *response from a resident of an indigenous (kaqchikel) village when asked how welfare should be defined.*

Following the Peace Accords of 1996, the Government of Guatemala committed itself to a policy of decentralization as a means of increasing social cohesion and reducing poverty. A critical requirement for creating an integrated society is physical connectivity and the elimination of geographic isolation. Thus, improving the road network in the country by assuring a readily available and affordable road network was identified as one of the key challenges in the GoG’s *Estrategia de Reducción de la Pobreza* (ERP)¹ and in the Guatemala Poverty Assessment (GUAPA 2002). Providing good quality roads and adequate year-round access to remote areas is also one of the key goals of the current administration.

These goals were first acknowledged in the ongoing Main and Rural Roads Project (Loan 4260-GU) which became effective at the end of 1998, and was brought into fruition under the San Marcos Rural Roads Pilot Project (SMRRPP). The Second Rural and Main Roads Project (RMRP) proposed here is an important step in furthering the Bank’s assistance in meeting these challenges. The project builds on the success of the model piloted under the SMRRPP to extend investment support to other regions of Guatemala, introduce new planning and service delivery approaches for increased participation of beneficiaries and community-based organizations, and strengthen the policy and institutional framework to enhance program sustainability.

The **overarching goal** of the proposed RMRP is to reduce rural poverty and build social cohesion by improving and maintaining access in rural areas to markets, schools, health centers and other social and economic infrastructure through broadened community participation. By emphasizing beneficiary involvement, the RMRP will assure that local development decisions reflect the needs and priorities of rural communities.

The specific project development objectives of the RMRP are:

- Improve rural access on a sustainable basis by improving paths, rural roads, secondary/departmental roads, and main roads;
- Develop institutional capacity at the local and central level, for rural roads management and strengthening stakeholder participation; and
- Generate employment in rural areas by developing an entrepreneurial culture using cost-effective technologies, providing a demonstration effect through pilot programs, and promoting spillover activities.

Since the RMRP will extend the framework tested in the SMRRPP, it is important to review some of the features and lessons learned from the pilot, which are presented below. A description of the SMRRPP and its main impacts to date are also highlighted in Box 1 and further described in Annex 11.

The SMRRPP was initiated under the ongoing Rural and Main Roads Project (L4260-GU) in the department of San Marcos in the western part of Guatemala. The main focus of the SMRRPP was to put in place a new institutional framework at the local level to deal with rural road administration. It focuses its intervention on an area comprising twelve municipalities, integrated into a municipal association—the ADIMAM (*Asociación de Desarrollo Integral de las Municipalidades del Altiplano Marquense*). The mayors of the association are responsible, along with the municipalities that they represent, for

identifying, financing, and managing the rehabilitation and maintenance of the “core rural road network 3” The ADIMAM mayors receive technical advice from a technical unit UTAV (*Unidad Técnica de Asistencia Vial*), which was especially set up as part of the pilot under ADIMAM. A regional road fund (*Fondo Vial Regional*, FVR) was also established under the aegis of the SMRRPP to administer the financial contributions received from the municipalities and other potential sources for the rehabilitation and maintenance of the road network.

A major objective of the project is to ensure physical connectivity and access to services in rural areas. This requires traversing non-municipal roads for at least a part of the way. In this manner, the project complements its scope of improving rural roads with that of rehabilitating/improving departmental and secondary roads, which connect the core rural road network to the main road network of the country. Hence, the scope of the ongoing SMRRPP spans two road jurisdictions: (i) the core rural road network under municipal jurisdiction, which the Bank co-finances with ADIMAM; and (ii) the national road network under the jurisdiction of the General Roads Directorate (DGC, *Dirección General de Caminos*), which the Bank co-finances with the GoG.

Box 1: The San Marcos Rural Roads Pilot Project (SMRRPP)

The SMRRPP is being implemented in the highlands of the Department of San Marcos—one of the poorest departments of the country located on the border with Mexico. The project includes 12 municipalities, covers an area of 3,800 sq. km and impacts about 400,000 inhabitants. The total length of the road network serving the project area is 1,320 km and includes roads under the jurisdiction of the municipalities (970 km) and of the General Roads Directorate (350 km).

Before implementation of the project, the condition of the road network in the area was poor. The poor road condition was caused mainly by the lack of funds, leading to dire neglect of road maintenance works and by the limited technical and management capacity of the municipalities to administer the limited funding available. Road-related interventions were thus restricted to emergency repairs and many roads would become impassable during the rainy season. A preliminary impact analysis conducted as part of project preparation reveals that implementation of the SMRRPP has altered the situation considerably (See below and also Annex 11).

The centerpiece of the SMRRPP is the creation of an institutional framework responsible for administering and financing municipal roads. In 1997, 12 municipalities in San Marcos, with assistance from the Bank, formed a municipal association named ADIMAM (*Asociación de Desarrollo Integral de las Municipalidades del Altiplano Marquense*). Their objective was to jointly tackle problems associated with poor road access. This innovative institutional arrangement undertakes the planning and execution of rehabilitation and maintenance works on a portion of the municipal road network. The SMRRPP also created a technical unit UTAV (*Unidad Técnica de Asistencia Vial*) which is responsible for planning, programming and managing the network and reports directly to ADIMAM. Initially, UTAV was constituted by a local consulting firm which reported directly to ADIMAM. Now, UTAV is staffed with 3 local young professionals (2 engineers and 1 economist) trained by the consulting firm. The financial aspects, which include the management of contributions received from the municipalities to cover the cost of UTAV and co-financing (with the Bank) the road works, are managed by a local road fund (*Fondo Vial Regional*, FVR). The fund also reports directly to ADIMAM and is staffed by a financial professional.

The SMRRPP is financed as follows: (i) Road rehabilitation: Bank 85%; ADIMAM, 15% (this amount is contributed by the municipalities in ADIMAM that benefit from the works and represents a variable financial contribution); (ii) UTAV. Initially the Bank financed it 100%, however, beginning Year 3 of project implementation, i.e. in 2002, ADIMAM began to completely finance it. These funds come from the annual deposit of Q70,000 that each municipality is required to make (fixed financial contribution); and (iii) Maintenance: works are currently being undertaken by beneficiary communities with the support of local authorities, however, the use of micro-enterprises to carry out road maintenance activities will be piloted under the proposed RMRP. The cost of the pilot will be shared with ADIMAM. At mid-point of project implementation, the SMRRPP had rehabilitated approximately 200 km of the core rural network, which has a total length of 450 km. Additional road sections critical to improving access to remote communities with relatively large population and high economic potential have also been included in the SMRRPP. Upon completion, it is envisioned that rehabilitation of the entire core network will be accomplished and several short road sections outside the core network that are otherwise impassable during the rainy season will be improved. The SMRRPP will also rehabilitate and/or improve approximately 250 kms of secondary and departmental roads connecting ADIMAM’s core network to the main road network.

There are two central government agencies involved in the implementation of the SMRRPP: the Municipal Development Institute (*Instituto de Fomento Municipal*, INFOM) which is responsible for the coordination of all aspects related with the implementation of the rural road components, and the General Roads Directorate (*Dirección General de Caminos*, DGC) of the Ministry of Communications, Infrastructure and Housing (*Ministerio de Comunicaciones, Infraestructura y Vivienda*, MCTV) which is responsible for the same activities in the road network under its jurisdiction (main, secondary and departmental roads).

A study of the preliminary impacts of the SMRRPP indicates that the ADIMAM area, in just a year after implementation of the pilot, witnessed a 10% increase in inhabitants who experienced an improvement in the frequency of public buses and a 13% increase in the number of people using buses and pick-ups. Also, a larger percentage of women in the project area are inclined to use public transport than women who are not in project municipalities. Inhabitants of the project area also witnessed a decrease in travel time (20%) and a reduction in price of commodities. The SMRRPP has also facilitated increased ‘access’ to health centers and schools⁴.

The main achievements of the SMRRPP can be briefly summarized as follows:

- **Strengthening Social Cohesion.** The major achievement of the SMRRPP has been developing social cohesion and building social capital and consensus. In an area ridden by conflict and consequently distrust and divisiveness, the Pilot has shown that (ADIMAM) mayors from different municipalities and with different ideologies are willing to sit together, set aside their political differences, and constructively take on decisions about development priorities in the project area. Most decisions are taken to maximize the ‘long-term’ *social* good rather than short-sighted local goals. Presented with historical evidence of grave discord in the area, this has truly been one of the most significant accomplishments of the Pilot. The SMRRPP has also shown that social cohesion strengthened by improved inter-community accessibility has encouraged interaction and exchange of goods, services and ideas. Improved access to nearby main cities and towns is encouraging an otherwise marginalized and isolated population to integrate itself into the mainstream;
- **Municipal Empowerment through Municipal Association.** The creation of ADIMAM for the initial sole purpose of tackling the common road infrastructure needs of the association has facilitated dialogue between the municipalities (of the association) and the central government (in Guatemala City). Chapter III of the recently amended Municipal Code (*Código Municipal*), which regulates the associations of municipalities, was inspired by the success of the SMRRPP⁵,
- **An orderly and participatory process for selecting and implementing rural roads investments was established.** The SMRRPP established a local mechanism for selecting, funding and implementing rural roads rehabilitation and maintenance programs. This model of ensuring local participation and **empowering communities** has been lauded by the GoG. The GoG is planning to use it to design its rural road strategy in the country;
- **Improving year-round rural access for the population of ADIMAM.** With improved road quality due to rehabilitation, the inhabitants of the project area have experienced an improvement in the access to merit services, such as health facilities, educational centers and employment, thus **reducing the vulnerability** of these communities and providing them with a **greater choice set of opportunities**. The results of the preliminary impact analysis⁶ and other sectoral work⁷ indicates that road rehabilitation in Guatemala has had the largest impact on the provision and availability of public transport;
- **Capacity building in GoG institutions.** The capacity of the Municipal Development Institute (*Instituto de Fomento Municipal – INFOM*) to support the road development efforts of municipal associations was created and is currently being strengthened;
- **Meeting National Development Objectives.** The objectives of the SMRRPP are consistent with the prescriptions outlined in the GUAPA and the ERP. It is widely believed that geographic isolation caused by the country’s complex topography and the bad quality of its road network have been instrumental in shaping the current poverty profile (Box 2). Both, the GUAPA 2002, the green cover version of which was presented in March 2002 and the ERP, presented at the Consultative Group meetings in February 2002, emphasize promoting pro-poor growth and investment in physical capital, among which rural roads figured prominently; and
- **The success of the SMRRPP has been widely acknowledged.** Decentralization fostered by the SMRRPP has received extensive support from the GoG (the President, the Vice-President

and the Social Cabinet) and is viewed as a model framework for addressing and deal with local infrastructure needs and initiatives. Having recognized its success in empowering and building social cohesion and participation, the GoG is using it as a prototype to design a rural transport strategy for the entire country.

By drawing on the success of the SMRRPP and extending its framework to include other pilots, the proposed RMRP will capitalize on its achievements in San Marcos. It will also incorporate additional features designed to promote local development and aid the integration of indigenous and isolated communities into the economic mainstream of the country. Box 2 presents the main characteristics of the RMRP, and a detailed description of the project is presented in Annex 2.

Box 2: Features of the RMRP (See Annex 2 for details).

Being a poverty targeted operation, the RMRP intervention will be mostly directed at the poorest regions of the country. By extending the impacts of the SMRRPP to other regions of the country, the RMRP will:

- Continue the model of empowering local communities by setting up local institutions for selecting, funding and implementing rural roads rehabilitation and maintenance programs. In Huehuetenango, project preparation has resulted in the creation of 2 associations covering 21 municipalities: MAMSOHUE in the south-west of the department, has 13 participating municipalities and HUISTA, in the northwest, has 8 participating municipalities;
- Aid GoG in its poverty alleviation and employment generation focus. Other than securing all-weather roads in previously ill-connected areas, some road segments in the MAMSOHUE and HUISTA project areas will pilot labor-intensive means of rehabilitating and improving roads (See Annex 14).
- Continue to empower and aid development in communities that were part of the SMRRPP by setting up Micro-enterprises to undertake road maintenance activities in the ADIMAM area. Approximately 350 kms of roads will be maintained initially with the aid of maintenance micro-enterprises (See Annex 12).
- Pilot the improvement of non-motorized means of transport in ADIMAM through the improvement of tracks, paths and footbridges. This pilot will rehabilitate approximately 300 kms of tracks and paths, improving accessibility for about 50,000 people in communities with high proportions of extremely poor and without alternative direct access to the rural road network (See Annex 13). The pilot will also finance the construction of footbridges;
- Assist the GoG with financing rehabilitation works and road works that improve main, secondary, departmental and rural road networks;
- Provide critical support for capacity building in the region and for strengthening the capacity of INFOM, DGC, and municipal associations.

Through the RMRP, the Bank will evince its continued active support for capacity building and strengthening decentralized institutions in the country. On July 1, 2002, the GoG's Decentralization Law (*Ley General de Decentralización*) came into effect. The objective of the law is to promote financial and administrative decentralization by transferring power from the central executive to the municipalities. It also aims to devolve power to civil associations (ADIMAM is an example of a civil association). The spirit and nature of the law is also adhered to in the institution of INFOM since through it, municipalities directly participate in decision-making and executing plans about rural roads (See Box 4).

On physical grounds, comparable successes to those obtained under the SMRRPP may be expected since these areas are similar to San Marcos in many ways: They are in the same part of the country, are as poor and as deprived of rural transport infrastructure and services as San Marcos, if not more (See Table 1). Additionally, ENCOVI households⁸ in the departments of San Marcos and Huehuetenango – where the RMRP will be implemented - report especially large economic losses due to high travel times caused by bad quality of roads and consequent scarcity of transport services. Landslides and mudslides are frequent in these areas, causing road closures and prolonged delays in access to basic services, work and markets. The RMRP will make financial and technical resources available for participating municipalities so that they can undertake road improvements and regular and sustainable maintenance works. This will go a long way in increasing social welfare within these departments.

Table 1: Accessibility and Transport Infrastructure for some selected Departments, Guatemala, 2000.

	Rest of the Country	San Marcos	Huehuetenango	Quiche	Baja Verapaz	Alta Verapaz	Average over targeted departments*
No. of Sampling Units	301	24	65	26	18	44	
No. of Households Sampled	3086	233	617	246	197	465	
% HHs without Motorable roads	11	16	21	19	13	20	19
% HHs without Public Transport	48	63	68	48	42	73	63
% HHs experiencing Road Closures	28	14	24	38	24	38	31
Time taken to get Water (mins.)	13	15	14	14	8	14	13
Distance traveled to get Water (kms.)	0.2	0.4	0.3	0.3	0.2	0.5	0.3
Time taken to get Wood (mins.)	58	79	74	82	83	59	72
Distance traveled to get Wood (kms.)	1.2	1.4	1.6	1.7	2.2	1.8	1.7
Time taken to reach a Health facility (mins.)	47	49	51	29	88	48	51
Time taken to reach Work Place (mins.)	46	29	48	31	44	37	42
Distance traveled to reach a Market (kms.)	8	8	10	7	3	9	9
Time taken to reach a Market (mins.)	41	72	66	61	29	72	62

Source World Bank calculations using ENCOVI 2000, Instituto Nacional de Estadística, Guatemala

Notes: Time is measured in minutes and is one way. Distance is measured in kilometers (one way) Time taken to reach a health facility is calculated for individuals who visit a health facility. A health facility can include public hospital, hospital of the IGSS, a private hospital, a polyclinic of the IGSS, a health center, a health post, a community center, a private clinic or a private consultation, a private pharmacy or a state pharmacy. It excludes time taken by persons taken care of at their own home or at other homes

**Weighted average for ENCOVI households in Huehuetenango, Quiche, Baja Verapaz and Alta Verapaz

¹ The ERP was presented by the GoG, at the Consultative groups meeting in February 2002.

² The term “rural roads” is used in the context of this document to cover the municipal and community roads under the jurisdiction of municipal governments.

³ The “core network” is defined as the road network that provides minimum adequate accessibility to municipalities in the association. In defining this network, consideration is given to the financial capacity of the municipalities to provide the required resources to rehabilitate and maintain their portion of the network.

⁴ The World Health Organization (WHO) defines ‘access’ to a health center if it is less than an hour away.

⁵ The amendment of *Código Municipal* was approved in April 2002 together with the *Ley General de Decentralización* and the *Ley de los Concejos de Desarrollo Urbano y Rural*.

⁶ *Estudio de Medición de Impactos Preliminares: El Caso del Proyecto Piloto de Caminos Rurales de San Marcos, República de Guatemala*, BIOENERG, Guatemala, 2002.

⁷ *Are Roads Enough: A Limited Impact Analysis of Rural Road Works in Guatemala*, 2002. J. Puri, The World Bank, 2002.

⁸ In 2000, the *Instituto Nacional de Estadística*, Guatemala conducted an LSMS (Living Standards Measurement Survey) or the ENCOVI 2000. One of the features of the ENCOVI 2000 is that a separate module in the ‘community’ section of the questionnaire is devoted to roads and transportation issues. The ‘community’ section of the questionnaire, where the module on ‘Roads and Transportation’ is contained, covers a total of 481 Primary Sampling Units. However this section is not representative at the national level or at the community level of the community.

2. Key performance indicators: (see Annex 1)

The project will involve the replication of the SMRRPP in two new associations in the Department of Huehuetenango, one of the poorest of the country as well as the consolidation of the institutional framework put in place under the SMRRPP in San Marcos. Key project targets include: (i) nearly 500,000 inhabitants of HUISTA and MAMSOHUE region will obtain better road access; (ii) approximately 400,000 inhabitants of ADIMAM region will continue to benefit from improved access; (iii) successful replication of the model in other municipalities proving that the institutional set-up can be put in place even in the absence of the broad incentives surrounding the implementation of the ZONAPAZ initiative; (iv) consolidation of participatory and decentralized institutional framework to deal with rural roads management; and (v) adoption of the National Rural Roads and Transport Strategy (RRTS) by the GoG and the strengthening and preparation of the institutions involved in a larger intervention in the sector.

The impact of the RMRP will be measured at various stages during project implementation (primary or interim impact evaluations) and at the end of the project. The main purpose of the impact evaluations is to assess the project's contribution to improving rural access, providing employment opportunities for the population served by the project, and improving the institutional framework. In measuring the impacts, the following indicators will be monitored throughout the project implementation phase and measured at the end of the project:

1. Improvement of Rural Access:

- Ensure that the communities served by the core networks of the various municipal associations to be financed under the project will be interconnected by all-weather roads securing access to markets, employment opportunities, and social services (health and education);
- Vehicle operating costs for vehicles using the departmental and secondary roads rehabilitated/improved under the project will decrease by at least 40%;
- Travel times on the core networks and on the roads under DGC's jurisdiction will be reduced at least by 20%;
- Rehabilitation of 830 km of rural roads and 270 km of roads under DGC's jurisdiction (main, secondary and departmental roads connecting the rural road network to the rest of the country);
- 300 km of tracks and trails will be improved and approximately 80 footbridges will be constructed;
- Approximately 2000 m of spot improvements along segments of rural roads outside the core road network;
- Successful formation of 20 micro-enterprises in the SMRRPP area, to carry out road maintenance; and
- Maintenance of 350 km of roads in the SMRRPP project area using micro-enterprises;

2. Improvements to the institutional framework:
(at local level)

- A well-functioning decentralized local governance system in place with the enhanced capability of managing road infrastructure at the local level;
- Successful formation of 2 new associations of municipalities following the SMRRPP model, with adjustments where required, to manage the rural road works under their responsibility (MAMSOHUE and HUISTA);
- Permanent Technical Units (UTAVs) and Regional Road Funds (FVRs) implemented and strengthened in the new associations;

(at central level)

- Strengthened coordination for the management of road infrastructure at the central level;
- Adoption of national strategy for rural roads and transport, including its discussion with its stakeholders;
- Project Coordination Unit from INFOM incorporated into the organization of INFOM; and
- Increased institutional capacity within INFOM for supporting road maintenance activities through micro-enterprises.

3. Employment generation:

- Creation of an entrepreneurial culture for road maintenance activities through technical assistance for the creation of 20 microenterprises and training program for 200 local contractors and consultants;
- Not less than 150 permanent jobs directly created by the implementation of the Micro-enterprises Pilot project in ADIMAM;
- Approximately 200 people employed in the labor-intensive pilot project and by rehabilitation works financed by the project;
- The generation of spillover employment activities stemming from improved access to markets for locally-produced agricultural goods and textiles as well as from complementary productive activities stemming from the micro-enterprises; and
- The micro-enterprise program will catalyze other local development initiatives, and possibly mobilize untapped local resources for community-based ventures through a sustained income stream from micro-enterprise contracts in the project areas.

B. Strategic Context

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

Document number: 18036 **Date of latest CAS discussion:** July 14, 1998;

Progress Report: June 25, 2002

The overriding objective of the Bank assistance strategy for Guatemala is to support Government efforts to achieve sustained, continuous reduction to poverty by assisting the country to secure implementation on the Peace Accords. The four interlinked development priorities are: (i) building social cohesion and strengthening participatory decision-making processes; (ii) reducing poverty; (iii) improving economic management to maintain stability and foster growth; and (iv) modernizing the public sector to make it more effective at essential tasks. With respect to decentralization and community demand driven approach, the CAS emphasizes that it is important to: (i) foster a more decentralized and community demand driven approach, and (ii) strengthen communities and local levels of government.

In this context, the RMRP seeks to foster inclusion and informed participation of beneficiaries through decentralized decision-making and implementation, while strengthening rural communities. The RMRP is also consistent with the views of the Operations Evaluation Department's Country Assistance Evaluation (CAE) which recommends that the Bank should support programs on rural roads and basic infrastructure for rural communities. Furthermore, improving road access for rural areas is a critical part of the poverty alleviation strategy and is essential for linking rural communities to markets, and to social and other public services.

2. Main sector issues and Government strategy:

“During the rainy season, the community is affected because the road is blocked by the mud and the landslides ...the result is that we can’t buy or transport products to the market.” Mam villager, QPES.

Poverty and access. More than half the population of Guatemala is poor and nearly 2 million people in Guatemala live in extreme poverty (See Table 2). Although urban poverty is significant, poverty remains overwhelmingly a rural phenomenon in Guatemala. Poverty is twice as high in the rural areas and often the rural poor live in isolation because of the limited supply of transport infrastructure and services.

An unsatisfactory road network, especially in rural areas, is a large determinant factor in the poverty profile of the country. The absence of all-weather roads limit access to basic services and a distribution network for crops and essential products, especially for the poor. This has been particularly unfortunate because the rural poor derive their income predominantly from agricultural labor. They also tend to live in small (less than 10,000 people) municipalities with limited infrastructure service provision. Thus a key step for poverty reduction calls for integrating these smaller, rural municipalities which contain large percentages of poor populations, with services, markets and the rest of the economy.

Among the regions in Guatemala, the northern and the north-western regions (“the poverty belt”) are the most afflicted with more than one out of three people in these regions considered to be extremely poor (32% in the North and 39% in the North-West). Being a poverty alleviation targeted intervention, the main criteria for selecting municipal associations under the RMRP are the poverty level and the road needs in these regions.

Table 2: Poverty and Access to road Types by Region, Guatemala 2000.

	All Poor HHs*	Extremely poor HHs*	Non-Poor HHs*	HHs with Access to Road Type/ Total HHs** (%)				
				Surfaced Roads	Unsurfaced roads	Earth roads	Footpaths	No motorable roads
	(%)	(%)	(%)					
All	57	12	43	39.8	69.9	37.9	62.5	13.3
Urban	24	3	76	65.3	58.7	22.3	34.9	10.1
Rural	67	17	33	28.3	75	44.9	75	14.7
Regions								
Metropolitan	21	2	79	65.2	57.3	22.3	34.3	3.2
North	66	17	34	25.8	66.3	15	75.1	17.8
North-East	35	0	65	18.7	77.2	51.2	34.9	18.3
South-East	62	13	48	32.6	73.4	69.9	77.8	14.4
Central	53	12	47	47.4	83.6	30	61.5	9.5
South-West	60	10	40	37	76.2	38.7	69.3	16.1
North-West	80	29	20	29.3	61.7	48.2	91.7	20.5
Peten	44	2	56	47.7	70	51.1	67	2.3

* As a percentage of all households in Guatemala. These figures are taken from the 'Household' portion of the ENCOVI 2000. ** As a percentage of Households in the 'Community' part of ENCOVI 2000 'Total HHs' are those that have PSU (Primary Sampling Unit) data available Source: World Bank calculations using ENCOVI 2000, Instituto Nacional de Estadistica, Guatemala.

In the poverty belt, which includes the departments of San Marcos, Huehuetenango, Quiche, Alta Verapaz and Baja Verapaz, more than 70% of households are poor and more than 30% are *extremely poor* i.e. has an annual per capita income of less than US\$255. It is also not coincidental that physical access in these departments, as measured by the percentage of households experiencing road closures and the percentage of households without access to a motorable road, is among the highest in the country (See Table 2). These departments have predominantly indigenous populations, who were very severely impacted by the 35 year long civil strife that riddled the country between 1960 and 1995 (The World Bank, 2001).

Road network administration, size and condition. Jurisdictionally there are four types of roads in Guatemala: main, secondary, departmental and rural. The DGC under the aegis of the MCIV is responsible for constructing, rehabilitating and maintaining a large part of the 'classified road network' (mainly main, secondary and departmental roads). The DGC also apportions funds between regional offices for road works. Rural roads are maintained variously by municipalities, communities, finca owners or others (Social Investment Fund or FIS, National Fund for Peace or FONAPAZ, etc.).¹⁰ However these roads rarely receive central government financing for road maintenance activities. All other roads, particularly the main road network, receive funding for their maintenance from COVIAL—the national road fund, which was created in 1996. COVIAL is financed by a fuel surcharge of Q.1 per gallon of fuel. Approximately US\$70 million are collected from this surcharge per year.

Table 3: Guatemala's Road Size and Condition

	Total (kms.)	Classified (kms.)
Total	26,000	14,000
Main/Secondary/Departmental	7,000	4,000
Rural/Municipal	19,000	10,000

Guatemala has a relatively small road network consisting of roughly 26,000 km. Of this amount, 14,000 km are 'classified' while the rest is still in the process of being classified.¹ The classified road network comprises nearly 4,000 km of main and secondary roads (mostly paved) and 10,000 km of departmental and rural roads (unpaved). In the last 6 years considerable progress has been made in the rehabilitation and maintenance of the paved road network, and today, 75% of this network is in good or fair condition (maintainable condition). Less than half (45%) of the classified unpaved network (which includes unpaved secondary, departmental and rural roads) is in maintainable condition. It is also relevant that amongst the sub-sample of households and communities surveyed in 2000, 13% of the households used primarily dust roads or paths and trails to reach places outside their community.² Both these facts underscore the need for two kinds of rural road works in Guatemala: (i) the rehabilitation and subsequent regular maintenance of rural roads; and (ii) the improvement of tracks, paths and footbridges that are used by residents of remote communities. The proposed RMRP addresses both these needs.

Rural roads constitute about 63% of the entire road system of the country, with a length of approximately 19,000 km. It is estimated that less than half of these roads are in maintainable condition and that because of the general poor condition of the network, a large percentage of these roads become impassable during the rainy season. The absence of all-weather roads leads to considerable losses, especially for the rural poor, further compounding their condition.

A country-wide assessment of the need for road works shows that the absence of all-weather roads is responsible to a large extent, for the absence of a reliable public transport system in this part of the country. Poor road conditions lead to large repair and maintenance costs for transport operators, increases poverty in these areas, and does not allow operators to transfer their costs to the consumers. The absence of a dependable road network also implies that people have to travel more than an hour (one-way) to procure wood. Most households in San Marcos and Huehuetenango are more than an hour away from a marketplace, where they can buy and sell their products.

Once the ongoing and planned road rehabilitation and improvement projects financed by the Bank, the IDB and other multilateral agencies are completed, it is believed that the entire paved and 55% of the unpaved networks will be in good or fair condition provided adequate attention is given to maintenance (See Box 3). This promises to spur economic growth in the region. Even assuming that there is no/very little mobilization of new resources and migration of opportunities to this region, the reduction in transportation costs will aid people in the region by securing easily available and cheap transport infrastructure.

Multiple agency and unclear responsibilities in rural roads. As mentioned earlier, the rural roads sub-sector, including the municipal roads, is characterized by a large number of financing and implementing agencies. The outcome of the multiple agency involvement is an array of ad hoc, often unsustainable interventions. This issue of multiple agency involvement in rural roads and its consequences was discussed during the Rural Transport Workshop supported by the Bank and held in Guatemala in May 2001. One of the conclusions of this discussion was that there is an urgent need to define the role of each agency and to coordinate their interventions. A great deal has been achieved through the ongoing Bank operation (Loan 4260-GU) but the issue will be addressed more in depth during the development of the Rural Transport Strategy. The Rural Transport Strategy that will be prepared under the ongoing loan will contribute to the development of a more coherent set-up for the management and financing of rural roads which would also result in increased coordination among the International Financing Institutions, other agencies and the main stakeholders involved in the sector.

Box 3: State of Roads In Guatemala: Some Conclusions using ENCOVI 2000.

Access to roads. Access to quality (paved or unpaved) roads is limited with a non-poor, urban bias. In 2000, 13% of the households surveyed by the ENCOVI were dependent on either dirt roads or paths/trails solely to reach the outside world. There is also a significant inverse correlation between access to motorable roads and poverty. The percentage with no access is much higher in rural areas (15% of ENCOVI households) than in urban areas (10%) and the poor are much more disadvantaged than the non-poor. Lack of access to paved and all-weather roads, is most critical in the north (18% of ENCOVI households) and the north-west (21% of ENCOVI households).

Road quality. Road quality is a critical problem in Guatemala and frequently results in isolating large parts of the country. Only 45% of classified unsurfaced road is in a maintainable condition. 28% of households in the ENCOVI PSUs reported road closures and three-quarters of these reported road closures lasting more than 4 days. Road closures are especially significant in the north (34%), south-west (48%) and the central (32%) regions. Main causes for road closures are flooding and winter (36%), and landslides (28%). Since the peace accords, although average road quality has improved, improvements have favored the urban and non-poor populations. 53% of the households in urban ENCOVI sample perceived improvements in road quality. Only 40% in rural ENCOVI sample saw the same. Only 28% and 22% of the households in the north and the north-west respectively, perceived improvements. (the national average was 44%).

Public transport. Access to public transport is limited in Guatemala. Only 40% of the rural ENCOVI households have access to public transport (versus 65% of the urban ENCOVI households). In 2000, 36% of households in the north and the north-west, had access to public transport. Analysis indicates that the lack of public transport is caused in part by lack of good quality roads which impose large costs on bus operators, due to wear and tear. Poverty in the area prevents bus operators from passing these costs onto their customers.

Possible impacts of improving road access. Physical isolation caused by poor road condition particularly during the rainy season is correlated with lack of access to essential services. Poor roads in Guatemala has led to lack of access to health services and markets in rural areas and in the northern, north-western and south-eastern regions. Geographic isolation has also constrained access to non-farm opportunities. Road closures also cause large economic losses and seem to most impact employment and access to markets. Poor public transportation, especially non-motorized transport, also causes immense hardships for the poor, especially women, who often have to travel more than one hour to fetch necessities like wood.

Policy implications. First: a shift in focus towards rural roads is essential to increase access to basic services for the poor. Second: while decisions on future transport investments (improvements, rehabilitation and construction) must take into account economic calculations such as population density and economic returns, equity concerns must be given more weight now than in the past.

Source: Results are based largely on the analysis of the ENCOVI 2000, jointly sponsored by the GUAPA Program and LCSFT. Details are provided in the green cover of the Guatemala Poverty Assessment (GUAPA, February 2002), and the background paper accompanying the GUAPA.

⁹ A road allowing the passage of vehicles with any kind of ‘surface’. It may be paved or unpaved.

¹⁰ *Finca* owners play a specially significant role where present. An interesting anecdote is related by local experts. A recently constructed road which connects Guatemala to Honduras was commissioned at the beginning of 1995. However a short stretch of this road went through a banana plantation and the plantation owner would charge most freight vehicles a tariff for road use. This issue has since been resolved.

¹¹ One of the byproducts of the SMRRPP was the classification of roads.

¹² As part of ENCOVI 2000, 481 Primary Sampling Units (PSUs) were sampled, covering a total of 4,844 households, more than two-thirds of which were rural, and 57% of which were poor.

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

The 1996 Peace Accords established the overall developmental agenda for the GoG that emphasizes stronger social orientation and broader citizen participation in development and enhanced decentralization of development projects.

- **Strengthening the framework for decentralization and the capacity to administer and maintain rural roads:** The GoG intends to push its decentralization agenda focusing on the development of the capacity of municipalities (See Box 4). The project would contribute to the effort by providing a new institutional framework to deal with rural road management, and would assist the GoG in implementing the recommendations of the Rural Transport Strategy. By incorporating technical and fiscal capability within the general framework, the project would help to empower local communities in undertaking road maintenance and rehabilitation. Other than the associations, micro-enterprises set up under a pilot in the SMRRPP area, would incorporate local communities and their development objectives into road maintenance activities.

Box 4: Government of Guatemala's Decentralization Policy

The GoG's strategy to improve service delivery and empower communities relies on decentralization as an objective and a mechanism for implementation. In March and April of 2002, the Congress of Guatemala approved one new law and two law amendments that together define the new institutional framework for decentralization. Under the approved legislation, power and financial resources will be devolved to municipalities and/or legally organized communities. This is a gradual process that is expected to be accomplished within two years.

The principles of decentralization and the strategy to accomplish its objectives are contained in the new Decentralization Law (*Ley General de Decentralización – Decreto No 14-202*). The Law encourages community participation in the decision making process and social auditing of programs and projects. The two amendments that complement the institutional framework cover the following two legislations: (i) Regional and Local Councils (*Ley de los Consejos de Desarrollo Urbano y Rural – Decreto No 11-2002*); and (ii) Municipal Code (*Código Municipal – Decreto No 12-2002*).

- **Improving Agency Coordination:** The project would finance technical assistance to aid coordination arrangements to be defined by the Rural Transport Strategy. INFOM, as the overarching liaising agency, and under the direction of the sectoral ministry (MCIV), would communicate and coordinate amongst different organizations involved in the rehabilitation, maintenance and improvement of rural roads and would also draw on its extensive experience to train local governments and communities to enhance their capacity and effectively manage them.
- **Improving rural access and mobility and reducing transport costs:** The project would improve road access within municipalities included in the project through the rehabilitation of secondary and departmental roads that connect the network of the associations to the national road network and through the rehabilitation of the core network within the associations. In addition, the project would finance a spot improvement program in those roads outside the core network in order to improve passability during the rainy season. The project would also include a pilot project, in the San Marcos area, aimed at the improvement of tracks, paths and footbridges which are vital for many communities in the region. Rehabilitation, maintenance and improvement works would thus guarantee all-year passability and would also encourage the provision of public and private transport services. It is expected that both these factors would increase the mobility of the rural population and reduce transport costs and travel times.
- **Improving maintenance management and funding:** The project would continue support being

provided under the ongoing Loan for the establishment of regional road funds (FVRs) at the association level, and for the strengthening of the national road fund (COVIAL). In addition, the project would finance a pilot project for the introduction of the concept of micro-enterprises for the execution of routine maintenance activities of rural roads within ADIMAM; and

- **Creating employment in poor rural areas:** Temporary and permanent employment would be generated by the road rehabilitation works, by the implementation of a pilot project to promote labor-based technology for road rehabilitation works, and via road maintenance micro-enterprises. Furthermore, the strengthening of local contractors would, in the long run, create employment opportunities.

**Box 5: Changes in Perceptions due to Improvement in Roads and Transport Services,
in the SMRRPP Area**

This box presents some reactions of inhabitants in the SMRRPP area, and were recorded during the impact assessment, just a year after project implementation (See Annex 11 for more detailed information of the impacts of the San Marcos Project).

1. An overriding relief marking the end of marginalization due to the availability of better roads:
“..now everything has to be agreed to, by us”

“...earlier we had to travel on foot, or on beast. Therefore we were not seen. We could not do a great deal. Now they've fixed it. So they can enter our area and cars have followed” Rafael Puac, Ixmoco Comitancillo.

4. Other benefits from better roads in San Marcos.

“...we can sell better our small (sic) things”

“... with the road ready they connected us to the water”

“.. now we have light”

“... Before we carried the products ourselves, to the fair in the town, usually on beast and the ones that did not have beasts, had to do so themselves. Now pick-ups can enter the community and it can carry the load and us there. It is quicker and we can carry more crop and sell more and when the fair finishes the car us comes to leave”. Gabriel Sipac, Sipacapa.

“... and our children had to come out with the large jars to the river. That would take an hour on average, to the community just so that there would be water in the house. But now because they composed the road, there is potable water” Inhabitant, Sochel Conception Tutuapa.

“...earlier we had to walk and carry the corn and the apples. Now small trucks and pick-ups pass, every 45 minutes and charge Q10.00. The small trucks pass more frequently but collect Q5 00”. Inhabitant, San Miguel Ixtahuacán.

“...earlier we moved patients in a stretcher or on a chair and sometime they went themselves. Now we just take them to the road and they go in a small truck to San Marcos” Inhabitant, Cerezos San José Ojetenam.

Source: BIONERG, Guatemala

C. Project Description Summary

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

The project comprises four components, which are described in greater detail in the subsequent paragraphs:

1. **Rural Roads Program (PRA: INFOM).** This component would finance the rehabilitation of about 830 km of rural roads in both Huehuetenango associations to restore year-round transit and meet the specific transport needs of the local communities. This component would also support the development and implementation of the following pilot projects: (i)

- road maintenance pilot; (ii) trails paths and footbridges pilot; and (iii) labor intensive road rehabilitation works.
2. **Main, Secondary/Departmental Roads Program (PRA: DGC).** This component comprises four sub-components: (i) reconstruction of main roads; (ii) upgrading of unpaved secondary and departmental roads; (iii) rehabilitation of unpaved departmental roads; and (iv) road maintenance.
 3. **Support for Decentralized Rural Road Development (PRA: INFOM).** Under this component, RMRP will support the extension of sustainable arrangements and financing of local roads in rural areas developed under the SMRRPP to other Departments. To reach the scale of a cost-effective road network, the municipalities have formed the HUISTA and MAMSOHUE associations to manage their respective municipal road networks. Each association would create a Road Technical Assistance Unit (UTAV) staffed according their specific needs. In addition, planning, programming and management of rural roads maintenance and rehabilitation of the municipal associations would be contracted out with the private sector. To support these activities, this component would finance following activities: (i) Project Coordination and Equipment; (ii) Municipal Capacity Strengthening; (iii) TAs for project implementation; and (iv) Works Supervision.
 4. **Support for Main/Departmental Roads (PRA: DGC).** This component would finance operational costs and equipment for the Project Coordination Unit, COFINEX, during the project implementation period, as well as engineering studies and final designs, and works supervision.

The costs for each component are summarized in the following table:

Component	Indicative Costs (US\$M)	% of Total	Bank-financing (US\$M)	% of Bank-financing
A.1. Rural Roads Program (INFOM)	20.30	31.9	14.62	31.3
A.2. Main, Secondary/Departmental Roads Program (DGC)	24.45	38.4	17.35	37.2
B.1. Support for Decentralized Rural Road Development (INFOM)	4.96	7.8	4.00	8.6
B.2. Support for Main, Secondary/Departmental Roads (DGC)	6.25	9.8	5.00	10.7
- Physical Contingencies of Work	4.50	7.1	3.22	6.9
- Price Contingencies	2.79	4.4	2.04	4.4
Total Project Costs	63.25	99.3	46.23	99.0
Front-end fee	0.47	0.7	0.47	1.0
Total Financing Required	63.72	100.0	46.70	100.0

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

Transport Sector Policies:

- Supporting GoG's effort to decentralize local development and specifically focus efforts on transportation;

- Creating sustainable funding for road maintenance at the local level through the development of regional road funds (FVRs) and consolidating it at the national level through COVIAL;
- Strengthening the framework for rural roads maintenance management through the creation of community-based micro-enterprises to undertake routine road maintenance activities;
- Strengthening private sector participation in rural roads by contracting rehabilitation works to small and medium-sized regional firms; and
- Creating/strengthening local technical capabilities.

Social Development Policies

- Empowering rural communities to define their development priorities (strong focus on municipal participatory planning);
- Strengthening the managerial and technical skills of the associations;
- Increasing employment opportunities in rural areas by outsourcing maintenance activities to community-based micro-enterprises;
- Increasing flexibility and transparency in the screening/approval/targeting of interventions; and
- Involving communities in the decision-making process and as ‘supervisors/auditors’ of the program. This would be an important step in creating ‘accountability.’

3. Benefits and target population:

The impact of improved access on poverty reduction is the subject of a study completed in 2002. This work was coordinated with the Department of Human Development (LCSHD) and the main data source for the study was the Living Standard Measurement Survey (LSMS/ENCOVI) conducted in Guatemala in the year 2000 which contains an extensive module on transport. A description of an indigenous village in the north of Guatemala, also richly brings out the ‘isolation’ experienced by its members and helps to put the RMRP in context (See Box 6).

Relevance for other departments: The SMRRPP is specially relevant for the other departments located in the “poverty belt” (Huehuetenango, Quiche, Alta Verapaz and Baja Verapaz) and in other regions of the country where poverty is high. The average percentage of households in these departments which do not have access to a motorable road throughout the year, for the ENCOVI households, is significantly higher than the rest of the country (See Table 1). In Huehuetenango and Alta Verapaz especially, more than one-fifth of households surveyed did not have access to a motorable road. Huehuetenango and Alta Verapaz are also extremely disadvantaged with respect to access to public transport. Issues of road quality also deserve considerable aid especially in Huehuetenango and Alta Verapaz, where 38% of surveyed ENCOVI households experienced road closures during the year 2000. These four departments are also extremely underprivileged with respect to physical access to public services. As mentioned above, the proposed operation will build on the gains achieved through the implementation of the SMRRPP and through the development of the national rural transport strategy.

Being a follow-on project, the expected benefits from the RMRP are those included in the SMRRPP plus the ones resulting from the implementation of the new pilot projects (micro-enterprises, labor-based rehabilitation, and tracks, paths and footbridges). The benefits are: (i) long term improvements in the way rural roads are administered in Guatemala; (ii) better access to health, education and other public

services for the predominantly poor population of Guatemala; (iii) improved access to markets and inputs for agricultural producers and the consequent stimulation of economic activity and incomes; (iv) reduced travel time and transport costs; (v) increased employment both from the transport induced economic activity as well as from the direct and indirect employment effects of the increased road construction and maintenance works; and (vi) creation of an entrepreneur culture in the region by means of the micro-enterprises program.

The target population is: (i) the country as a whole, which benefits from a better administered rural roads network; and (ii) the rural poor, who currently lack adequate access to public services and markets.

Box 6: A Mam Village in the Region

(This box contains a description of a village in the North of Guatemala and is presented to provide a flavor of the trials and tribulations of some of the indigenous communities of the region. Since the description is pieced together from a QPES survey, the identity of the community cannot be revealed. Hence through the text, it will be referred to as "community" or "village")

This community is almost completely poor and is far away from either an urban center or a municipal head although they have access to an earth road. Members of the community revealed that a lot of them had seen violence in the past. This has resulted in a large amount of distrust in the community against outsiders (community members were however convinced to participate in the survey after they were told their identities would not be revealed and after they discovered that the interviews were being conducted in their own language). There are 277 dwellings in the community, with each household containing approximately 8 to 12 people 22 men participated in the 'community' part of the survey. For individual case studies, 13 men and 4 women participated.

Infrastructurally Deprived: Although most people in the community have access to forests for firewood and the river for water, one of the main complaints of the community is the lack of potable water and electricity. Electricity is only available for 80 dwellings. Potable clean water is only available for 35 households. There are also very few latrines, only one telephone and one primary school that offers classes from grades one to six. Some parents in the community want their children to study more, but that they say "is impossible". This is because, to even study at the basic level "a child has to go to another community which is 2 to 3 hours on foot from this community". The main form of access to the outside world is via a dirt road that helps the village members to communicate with other communities and with the municipality. The main means of transportation is either a truck, a pick-up or walking. Lack of good access especially affects access to health facilities. Most averred that they "do not carry sick people to the hospital, because its very far away", located in the head of the municipality, and the type of road and means of transportation do not allow this to be done all the time. Sick people are only taken in case of emergency

People of the community know that FIS and FONAPAZ helped to build the earth road, but they do not know much about these institutions because these are located in the municipality head which is far away.

At High Risk and Vulnerable: Community members were asked about their perceptions of risk and vulnerability. They listed two sources of risk. The first, categorized as "moderate" risk by the respondents was that of earthquake. The community suffered an earthquake in 1996. This was classified as a "moderate" risk even though ".at present the community has no strategy to avoid it" because they believe that ". God permits it and wants it (to happen)"

The other source of "severe" risk are the rains from July to September. This affects the entire community because, "roads become impenetrable and the village remain in isolation" which affects the productive and routine lives of the peoples. Members of the community remarked that during the rainy season, the community is affected because the "roads made of mud are ruined and cave-in". So products that are bought in the market can no longer be transported to the community and they have to use beasts for more than 2 kms. Most of these products are for daily use such as sugar, salt, rice, noodles, lime and fertilizers. Similarly, to transport their products to the market, mainly apples and peaches, takes much more effort in the rainy season. To mitigate the impacts of these rains, the community has developed two strategies. The first is to transport products to a place from where they may be able to use motorized means of transport. This process is labor intensive and involves all the men, women and children of the village. The second consists of repairing damages to the roads: "The entire community works, without the aid of machinery/tractors or anything else, to repair the road with ploughs" Most community members reiterated that they did not receive any outside support to repair and to maintain the (dirt) road. The road became accessible only in 1996. Similar to earthquakes, the villagers perceived this hardship as "God given". They did not think that there were any methods for alleviating the impact of rains even though the impact is predictable.

Lack of Opportunity. The main occupation of the villagers is agriculture. Most grow corn, bean, papaya and fruits like peaches and apples. Some families also raise sheep, but these herds are very small (15 to 20 in number) because, the villagers emphasize, most do not have access to pastures. Usually all the people have some land that belongs to them. However not all land is equally fertile and some plots of land are completely barren, and do not produce anything. Community members averred that the high cost of production and low productivity compelled people to rent out their lands or migrate in search of temporary jobs, mainly related to coffee. Villagers said that amongst the reasons for low productivity were: the low fertility of land which needs a lot of work and fertilizers, lack of water to irrigate it, lack of technical know-how to till the land and the long distances between the village and the city where the product may be sold. Apparently, the (farm-gate) price they get for the crops that they produce is too little to justify production ("Lack of markets to sell products") Some villagers also professed that there is "a lack of interest" to improve one's condition "People lack the fight to improve their lives".

Source. Extracts taken from the QPES survey, Guatemala, 2000

4. Institutional and implementation arrangements:

Project set-up. The proposed program will be implemented over 4 years and will extend the framework of the successful arrangement made in the ongoing Pilot Project. Program implementation will be closely jointly coordinated by the Project Coordination Units (PCUs) established at DGC (COFINEX—*Coordinadora Financiamiento Externo*) and INFOM (UCBM—*Unidad Coordinadora Banco Mundial*).

COFINEX is the Project Coordination Unit and was established in the General Roads Directorate (DGC) of MCIV by Ministerial decree and is part of the permanent administrative structure of the DGC (COFINEX reports to the Planning Division of the DGC). It directly assists the Planning Division in matters related to the preparation of multiyear investment programs and in coordinating projects financed by the Bank and other multilateral and bilateral agencies. It is also coordinating activities of the ongoing Bank Loan (L4260-GU). Under the RMRP, the same PCU arrangement will be used: COFINEX will be responsible for the project components addressing road rehabilitation and improvement under DGC's responsibility, and for consultant services during the implementation of the RMRP.

The other coordinating agency for this project will be INFOM (through its coordinating unit, UCBM). INFOM will be responsible for implementing the rural roads components, which include related technical assistance and consultant services. INFOM's experience in coordinating national and local development efforts and its participation in the implementation of the SMRRPP renders it the ideal agency to coordinate this portion of the project. However, additional qualified staff will have to be added to the current coordination unit to enable it to manage the much larger project.

In a way similar to the SMRRPP, each association will contract out planning, programming and management of municipal roads within their boundaries to consultants, who will become the association's permanent technical service unit (UTAV). The UTAVs will also prepare, let and manage contracts on behalf of the members of the associations and will report to the associations. Technical assistance will be financed under the project to strengthen the associations. Technical assistance will also be provided to the UTAVs to ensure the establishment of adequate systems and procedures. Also, technical assistance will be provided to INFOM in order to strengthen its capacity to support local level development efforts.

Financial Management. Section E4.4 and Annex 6(B) detail the financial management, audit, and disbursement arrangements.

Procurement Arrangements. The Procurement Capacity Assessment (PCA) was carried out in January 2003 (and approved by the office of the RPA on January 14, 2003) and the overall risk assessment was rated as average. Positive factors include the significant level of experience accumulated by MCIV during implementation of several Bank projects and the fair performance of INFOM with the rural pilot project. Overall, project procurement has managed fairly well under the previous project (Ln. 4260-GU) and no major issues have emerged from internal or external audits. MCIV and INFOM are subject to the Government procurement policies and regulations under the Procurement Law (*Ley de Contrataciones del Estado Decreto 57-92*) and Regulatory Decree 1056-92.

Institutional and administrative capacity, support and control mechanisms, procurement manuals, record keeping activities within COFINEX and UCBM were found to be satisfactory. Both entities are also adequately staffed with experienced personnel and are receiving technical assistance and training to meet their expanded responsibilities under the proposed project. The PCUs have delineated a procurement strategy that identifies a package of works, goods, and consulting services and are committed to developing a detailed timetable for each contract, following a defined forecast sequence. The bidding

process within COFINEX involves the nomination of bidding/award commissions, technical review, legal review, approval by Procuraduria, a ministerial resolution for the award, a period of appeals, a ministerial decree, and contract signature. INFOM requires fewer steps and after award recommendation and no objection, the manager signs the contracts after Board of Director approval. A recent amendment to the Municipal Code will increase the threshold for signing contracts without Board authorization from US\$18,000 to US\$140,000. On technical matters, INFOM is assisted by MCIV in accordance with an inter-institutional arrangement. A regional road fund office manages the transfer of funds to the municipal associations and contractors.

The proposed project will continue to use standard bidding documents and largely retain prevailing procurement method thresholds and prior review arrangements used under the previous operation, albeit with some modifications. Small-scale works carried out under the new projects would require the use of the NCB method to package small works, instead of ICB. In addition, price comparison methods for small works will be based on at least five quotations, instead of the present practice of three quotations. NCB procedures should exclude the use of a bracketing system for award as well as allow the participation of foreign bidders. The Borrower should present NCB documents acceptable to the Bank and confirm the use of the Bank's standard bidding documents for ICB works and for the selection for consultant services.

A preliminary procurement action plan has been prepared and reviewed by the Bank. The action plan has delineated the following: (i) MCIV and INFOM will both annually prepare detailed procurement plans that prioritizes ongoing activities, including contracts pending under 4260-GU; (ii) the PCUs of both executing agencies will support the preparation of model bidding documents for works tendered using ICB, which will be closely aligned with existing documents; (iii) the executing agencies will prepare model bidding documents for goods and works using NCB and INFOM will prepare commensurate documents for works using price quotations; (iv) technical assistance will be provided to strengthen existing institutions, to improve procurement procedures, to periodically update procurement action plan, and provide training to the PCU staff and representatives from the municipal associations; (v) update the procurement manual for the new municipal associations in Huehuetenango; and (vi) improve inter-institutional coordination between DGC and INFOM.

D. Project Rationale

1. Project alternatives considered and reasons for rejection:

The proposed loan has incorporated the lessons learned from the pilot project in the San Marcos region, whose successes have been discussed in greater detail in previous sections. Nevertheless, the following alternatives, related to project scope, institutional set-up, and Bank support were considered and rejected.

Project Scope Options: Main or Rural Roads? Improving the entire road network would imply carrying out road works along the primary road network in addition to rural roads. However, this may result in placing greater weight on improvements along main road to ensure that the intended benefits have a wider impact. This approach was used in the Main and Rural Roads Project (4260-GU). However, discussions with sector agencies as well as a detailed evaluation of existing conditions along the primary road network led to the conclusion that main roads are currently in good condition and are expected to remain in good condition over the next few years. This assessment led to the rejection of this alternative.

At the other extreme, another possibility was to develop a sector intervention that focused almost entirely on rural roads. Although this approach has a number of merits, it limits the extent of connections between

rural roads and the primary road network, which in turn limits access to regional economic and population centers. Based on consultations and interviews with stakeholders there was clear preference for improvements to rural and secondary roads in order to improve access to markets, employment opportunities, and social services. Thus, an intervention that focuses on improving and maintaining rural and secondary/departmental roads would provide the most access to the primary road network and maximize the benefits achieved of the project. Nevertheless, it should be noted that in this particular case (department of Huehuetenango) a portion of a main road was also included, because of its importance for the regional network (CA-1).

Institutional Set-Up Options: One or Two Executing Agencies? Defining an appropriate institutional framework is one of the critical aspects for structuring an operation of this nature. Therefore, it is necessary to define the role and responsibilities of the executing agency, so that its activities are consistent with the project objectives and support the satisfactory implementation of project components. In Guatemala, the only agency with jurisdiction over both the primary and rural network is DGC, which directly reports to MCIV. Based on this purview, a logical approach would be to centralize project implementation under DGC. However, this approach runs counter to DGC's institutional mandate of maintaining the primary road network in good condition in order to support economic growth in Guatemala. As a result, it is likely that DGC would unintentionally place less emphasis on road improvements along rural and secondary roads compared to works along the primary road network, which could potentially slow project implementation and limit the achievement of the project objectives. To ensure the satisfactory implementation of project works along rural roads, it was necessary to assign the management and supervision of these activities to INFOM.

The naming of INFOM as co-executing agency has the additional benefit of creating a mechanism for supporting the institutional development of municipal governments in the provision of a number of infrastructure services in rural areas, not just in roads. The participation of INFOM would allow for the development of an integrated framework for rural development, which would support poverty alleviation on a wider level. A more holistic approach can offer greater potential for improving coordination as well as achieving economies of scale and cost savings across sectors. In this manner, the project would support the strengthening of INFOM to help it become the primary focal point for rural development. Furthermore, INFOM has demonstrated strong results in the implementation of roads works along rural roads under the existing Bank operation. Based on these factors, it was determined that it would be optimal to have two implementing agencies: INFOM for rural roads and DGC for the primary road network. To ensure adequate institutional coordination, DGC would continue to manage and oversee project implementation at a general level.

Institutional Set-Up: Associations of Municipalities vs. Single Municipalities?: One of the strategic approaches considered was to have INFOM interact directly with each of the municipalities that are participating in the project. Notwithstanding, this approach would have the following drawbacks: (i) it would generate few or no economies of scale; and (ii) it would preclude the development of a "core" road network, since it would be more difficult to target investments to allow for greater connectivity within an integrated framework. Moreover, a municipal association, such as ADIMAM, would increase the leverage of individual municipalities, improve project coordination, facilitate the replication of successful methods developed in one municipality, and generate lessons learned across a wider area. Finally, municipal associations have served as an important mechanism for increasing the level of interaction between a diverse range of municipalities, improving social cohesion, and working toward common regional objectives.

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)	
Bank-financed	Road Rehabilitation	Implementation Progress (IP)	Development Objective (DO)
	Road Rehabilitation Rural and Main Roads Project (L4260-GU; US\$66.7M). 1998	S	S
	Community Development	S	S
	Private Sector	U	S
	Land Administration	S	S
	Land Fund	S	S
	Social Fund	S	S
Other development agencies	Road Rehabilitation	IDB - Road Rehabilitation and Modernization Program (US\$150M). 2000-2005	
	Emergency Works	IDB - Natural Disasters Emergency Program (US\$40M). 1999-2002	
	Road Rehabilitation	CABEI - Main Roads Rehabilitation Program (US\$100M). 1999-2001	
	Road Improvements	JBIC - Rural and Main Roads Project (co-financing of Bank Loan 4260-GU)(US\$49.8). 1999-2004	

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

3. Lessons learned and reflected in the project design:

Bank worldwide experience with rural roads development and maintenance has shown that the principal problems in achieving sustainable results have been:

- Institutional weakness, especially at sub-national levels of government;
- Inadequate funding coupled with unreliable and untimely budgetary releases;
- Excessive delays in the execution of works;
- Lack of a firm national framework or strategy for rural roads, resulting in dispersed efforts, piecemeal interventions and insufficient attention to institutional and financial reform;
- Low priority to road maintenance needs;
- Inadequate monitoring and evaluation of results; and
- Inadequate community participation and consequently a lack of accountability.

During project implementation it is very important that the following elements be carefully monitored to ensure that project objectives are met:

- Ownership of the project at all levels must be ensured very early in the process so that, among other things, the necessary decisions are taken in a timely way. That is why project preparation has ensured that community members and local leaders are always kept informed and involved in the project;
- Capacity building takes a long time and requires a substantial commitment of Bank staff time and supervision resources. This has been the case for the ongoing Rural and Main Roads Project which includes only one association. Much more will be required for the new operation;
- In addition to requiring intensive supervision, the new project will require a lot of flexibility to adapt the project to local conditions. It is anticipated that different associations may require different approaches; and
- The provision of operating support to both PCUs is critical to establishing managerial and technical capacity. For this support being effective, it is important to seek for staff continuity in both PCUs.

To the extent possible, these elements will be built into the project design. Given the experience the project team has had with the implementation of the on-going project, no major difficulties are anticipated for those elements over which the team can exercise some control.

4. Indications of borrower commitment and ownership:

Rural development constitutes a major part of the Government's strategy for raising the standard of living of the rural poor, and rural decentralization and empowerment of rural communities is central to this strategy. This is in agreement with the Peace Accords signed in 1996. The SMRRPP echoes this sentiment and has strong backing from the highest levels of Government. It has also generated strong interest in other municipalities of the country.

Furthermore, decentralization fostered by the SMRRPP has received extensive support from the GoG (the President, the Vice- President and the Social Cabinet) and is viewed as a model means to deal with

local infrastructure needs and initiatives. Having recognized its success in empowering and building social cohesion and participation, the GoG is using it as a prototype to design a Rural Transport Strategy for the entire country. In this context it is also encouraging to note that Chapter III of the recently amended Municipal Code (*Codigo Municipal*), which regulates associations of municipalities, is inspired by the success of the SMRRPP.

5. Value added of Bank support in this project:

The Bank has supported the development of the Guatemala road sector for a number of years and has maintained an important policy dialogue on the development and maintenance of the sector. The Bank was instrumental in focusing DGC's attention on the advantages of contracting out maintenance and of increasing maintenance funding on a sustainable basis. Bank involvement led to the outsourcing of road maintenance and to the establishment of the national road fund, COVIAL. Today, 100% of the maintenance of the main road network (4,000 km) and 40% of the unpaved network is contracted to the private sector and the road fund collects enough resources to maintain the main road network under DGC's responsibility.

The Bank is well placed to assist the Government in replicating the SMRRPP which is considered "best practice". In addition, Bank involvement is bringing several other best practice approaches to the design and implementation of rural roads projects including the experience obtained in the Second Rural Roads Project in Peru which received an Excellence Award from the Bank.

The Bank is in a unique strategic position to strengthen GoG's efforts to decentralize rural development and to design and implement sustainable funding arrangements or mechanisms for maintaining the rehabilitated road network.

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 project will finance the rehabilitation and maintenance requirements of three classes of roads: (i) main; (ii) secondary/departmental; and (iii) rural, which include municipal and community roads. The main, secondary roads and some of the departmental roads included in the first year of project implementation were subjected to cost-benefit analysis. The economic justification for these roads was carried out using the HDM model and was based primarily on the quantified benefits that can be attributed to the road improvements, in particular, savings in vehicle operating costs. For the remaining roads, with low to very low traffic volumes (less than 40 vehicles per day), traditional economic calculations do not apply and for that reason multi-criteria procedures were applied. This had a strong element of consultation and the views of local community members were taken into consideration. The concept of the core network was also incorporated into this analysis.

For low traffic volume roads, following the model of the SMRRPP, associations and communities were (and will be in the new associations) consulted to determine road segments most in need of rehabilitation. This is an important 'community participation' feature of the project. The first priority within the RMRP, is to rehabilitate the roads belonging to the core network to all-weather standard. This will be complemented with spot improvements on some rural roads outside the core network to ensure

year-round passability. The order of road rehabilitation was determined by a matrix of criteria or the Road Selection Index – ISV (*Indice de Selección Vial*), summarized in Annex 4.

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

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

At the Central Government Level: As indicated in Section C.4 above, both COFINEX and UCBM meet the minimum financial management and accounting Bank requirements. They are capable of recording correctly all financial transactions, they support the preparation of timely and reliable financial statements, safeguard the entity's assets and are subject to auditing arrangements acceptable to the Bank. However, the preliminary assessment performed by the team indicates that UCBM needs to strengthen its human resources in the financial management area to be able to cope with the additional workload to be added by this project. Also, both COFINEX and UCBM will need to upgrade their informatics systems to enhance the preparation of financial information in a timely manner.

At the Municipal Government and Local Level: In order to adequately assess the financial capacity of the Huehuetenango municipal Associations (MAMSOHUE and HUISTA), it was necessary to analyze their most recent executed budgetary data. The 2000 results show that the majority of the 21 municipalities will not have difficulty absorbing the expected costs of rehabilitation and maintenance of the road network. For those municipalities with budgetary deficits, their problems can, in most cases, be explained by exogenous factors. However, in some cases the budgetary deficits are due to internal financial management deficiencies. These deficiencies should be corrected with the adoption of adjustment programs under the guidance of INFOM. Despite this situation, there is a strong commitment on behalf of all the municipalities to provide the cofinancing required by the project.

In order to determine the optimal size of road network, it is essential to determine the Associations' aggregate financial commitments resulting from the rehabilitation and maintenance of the roads. The larger the number of kilometers rehabilitated, the greater the financial commitment for maintenance. The 21 Huehuetenango municipalities are expected to finance 25 percent of the cost of rehabilitating the road network, which is higher than the 15 percent that ADIMAM members were required to pay in the pilot project. This higher co-financing percentage is justified by the superior financial position of the municipalities in Huehuetenango. Additionally, as is the case with the ADIMAM, all 21 municipalities are expected to make a fixed yearly contribution of about 75,000 Quetzales. This contribution will be used to finance the technical road unit (UTAV) and the regional road fund (FVR).

Furthermore, the size of the road network was also determined by the amount of resources available for rehabilitation and maintenance. To measure the resources of the Associations, the analysis considered a base case scenario based on the following assumptions: (i) municipalities will allocate 50 percent of their annual transport budget for rehabilitation and maintenance; and (ii) municipalities will additionally allocate 15 percent of the overall fiscal balance to road works.

Given the cost and resource assumptions described above, MAMSOHUE could afford to rehabilitate a cumulative total of 450 kilometers over a four year period. By the same measure, the HUISTA could afford to rehabilitate a cumulative total of 486 kilometers. In summary, comparing the estimated future obligations with the results of the indicators of financial fiscal capacity suggests that the two Huehuetenango Associations (MAMSOHUE and HUISTA) will be able to meet the financial requirements of the project.

Fiscal Impact:

For the municipalities in MAMSOHUE Association, only 2 out of 13 municipalities ended the year with

fiscal deficits (La Libertad and San Juan Atitán in 2000). Similar results were obtained in the HUISTA association with only 1 out of 8 municipalities registering a deficit in 2000. The size of the general surplus in both municipal associations increased from 1999 to 2000, demonstrating a positive trend (Annex 15). Due to the respective strength of their fiscal position, the majority of the participating municipalities should be able to absorb the rehabilitation and maintenance expenses incurred under the project. Under the proposed operation, the Bank would finance 75 percent of project expenditures, while the municipal associations would finance the remaining 25 percent. The higher level of project cofinancing is justified due to the healthier fiscal position of the Huehuetenango municipalities compared to the ADIMAM municipalities. As with ADIMAM, all 21 municipalities in Huehuetenango are expected to make annual contributions of about 75,000 Quetzales.

This assessment is based on the following assumptions: (i) municipalities are expected to allocate 50 percent of their respective annual transport budget for project related activities, an amount that translates to roughly 30 percent of their total investment budget; and (ii) municipalities are expected to increase the amount expended annually on road rehabilitation and maintenance activities by 15 percent. Nevertheless, the relatively weaker fiscal position of the MAMSOHUE municipalities will necessitate closer monitoring.

3. Technical:

The technical approach proposed for rural roads is that the proposed works should provide adequate year-round accessibility using least-cost standards and simple technical norms. The way to do this is through rehabilitation of a core network plus spot improvement so that benefits from total available resources are maximized. The RMRP will also pilot the integration of labor-intensive methods for rural road rehabilitation works, which, if successful, could be used in the work packages to be carried out in the latter stages of project implementation. Integrating labor-intensive technology for rural roads works would promote small contractors and generate employment thus contributing to alleviating poverty. The proposed intervention pose no technical issues.

The planned rehabilitation/improvement of main, secondary and departmental roads is not technically difficult. However, the design process will be closely monitored in order to avoid design deficiencies. The procedures applied under Loan 4260-GU for the selection of contractors and consultants will be used in the RMRP. Also, the familiarity of both DGC and INFOM with the use of Bank Standard Bidding Documents will facilitate the procurement process.

4. Institutional:

The RMRP is far-reaching in its ability to develop capacity for the effective provision of transportation infrastructure and promoting equitable and locally sensitive development. It is commensurate with the GoG's decentralization and poverty alleviation agenda. INFOM and the municipal associations are ideally positioned to ensure the involvement of communities and local governments, and to identify and undertake road rehabilitation and maintenance activities. At the same time, the presence of INFOM ensures that the central government will continue to be involved in the project thus guaranteeing uniform standards and its interest in seeing the project to completion.

4.1 Executing agencies:

INFOM is a self-supporting agency, with experience as a financial intermediary and executor of multilateral agency-financed projects. Under Loan 4260-GU, INFOM, in coordination with the MCIV and DGC, has assumed the lead role in the development of a national rural roads and transport strategy. It will also serve as the conduit of funds and will be responsible for the overall coordination of the SMRRPP, role which will continue under the proposed new loan. Technical assistance provided under

Loan 4260-GU to strengthen the capacity of the PCU of INFOM (UCBM) will continue under the new loan in order to ensure that the expanded size of the project can be adequately handled. The project will also include funds to strengthen areas of INFOM specifically responsible for municipal development.

The capacity of the DGC to manage and rehabilitate the country's main and secondary road networks has improved considerably during the last few years following the modernization program implemented by the Bank and the IDB. As a result of this, DGC's capacity to plan, program, and supervise road rehabilitation and improvement works has increased considerably. From 1996-1999, the DGC managed an average annual expenditures of approximately US\$230 millions (up from approximately US\$90 million annually between 1992-1995). As an integral part of the modernization program, COFINEX has been strengthened and its procurement procedures have improved. However, COFINEX will be further strengthened by the provision of consultants services to assist with the implementation of the proposed project.

4.2 Project management:

See 4.1 above.

4.3 Procurement issues:

Procurement activities will be carried out by the PCUs at DGC (COFINEX) and INFOM (UCBM). Preparation of bidding documents, procurement processing and filing will be the responsibility of both units. Both PCUs will be adequately staffed to carry out the procurement functions. MCIV and INFOM are subject to the Government procurement policies and regulations under the Procurement Law (*Ley de Contrataciones del Estado Decreto 57-92*) and Regulatory Decree 1056-92 (*Acuerdo Gubernativo 1056 de 1992*). Specifically, Article 1 of the Procurement Law permits an exception for procurement carried out under international treaties and agreements in which Guatemala is a party. In this manner, Bank financed projects can be carried out using the Bank's guidelines and is not subject to requirements delineated under the national procurement law. Another supportive factor is that a proposed reform to the procurement law, now under Congressional review, would require the preparation of annual procurement plans for public entities.

As part of the preparation of this project, the Bank carried out a Procurement Capacity Assessment of both MCIV (DGC) and INFOM (UCBM) in January 2003 (the PCA was approved by the office of the RPA on January 14, 2003). Based on this assessment, it was concluded that the overall risk regarding procurement is average. The PCA recommends the following actions (among other) to improve procurement practices in both PCUs: (i) MCIV and INFOM will both annually prepare preliminary procurement plans with timetables of procurement events for each contract or contract groups with the respective procurement methods. This baseline plan with annual procurement plans will be updated periodically during project implementation; (ii) the PCUs of both executing agencies will support the preparation of standard bidding documents for goods and works tendered using ICB and standard invitation documents for consulting services, in accordance with Bank guidelines; (iii) the executing agencies will prepare standard bidding documents for goods and works using NCB; (iv) INFOM will prepare standard documents for works using price quotations for small works introducing the lessons learned with the ongoing project; (v) update the 1998 Operational Manual to include: (a) employment descriptions for each position in the proposed project; (b) procedures and formats for the procurement plan and the Procurement Management Report with respect to physical progress and disbursements for each ongoing contract; (c) elapsed time for project events; and (d) the standard Bank's documents, NCB documents, and other methods included in the project plans. (vi) technical assistance will be provided to include the project's scope, the baseline procurement plan, the functions of the coordinating units, the

functions of the municipal associations, and those of the supporting technical units; (vii) assign functions to current staff for the preparation, execution, and monitoring of the procurement plan; (viii) improve inter-institutional coordination between DGC and INFOM; (ix) strengthen the existing coordination between COFINEX and INFOM coordinating units; and (x) strengthen coordination between top decision management at MCIC/DGC and INFOM. The coordination instruments will be defined and included in the Operational Manual (see Annex 6).

4.4 Financial management issues:

Conclusion of the Financial Management (FM) Assessment. Although having basic internal controls in place, the FM systems in the two executing entities need improvements specific to the project.

Implementation of the FM action plan would result in proper FM arrangements by the effectiveness date. Details can be found in Annex 6(B).

Flow of Funds. Loan funds will be disbursed to two Special Accounts: one for each of the two executing entities, in line with the implementation arrangements agreed. The Special Accounts will be opened in the Banco de Guatemala (Banguat), provided that Banguat maintains such accounts in US Dollars. Otherwise, the Special Accounts should be opened in a commercial bank or not used.

Procedures for loan disbursements are summarized in Annex 6(B).

Payments in US Dollars. The payments in US Dollars to providers of goods and services should be made directly out of the Special Accounts.

Payments in local currency. On a regular basis, preferably once per week, COFINEX will send an order for transfer of funds from the DGC SA to the project's account in Quetzales (DGC Q), in accordance with the amount of documents pending payment. The same procedure will apply to the transfers from the INFOM SA to its project account in local currency (INFOM Q).

Under this arrangement, the accounts in Quetzales would be similar to a "bridge" or "zero balance" account, thus preventing exchange rate losses. In any case, such losses cannot be covered with loan funds - this will be carefully monitored by the Project's Financial Coordinators, supervised by the Bank through the review of withdrawal applications and FMRs, and certified by the external auditors in their annual report.

Counterpart funds. In DGC's case, the counterpart portion of expenditures is paid via transfer from the Government's central account to the providers' bank accounts. The requests are made by the DGC using the country's integrated financial management system (SIAF).

In INFOM, counterpart expenses are regularly transferred from the Government's central account to INFOM's project counterpart account, from which payments are made to providers. For works, the counterpart portion of expenses will be paid out of the accounts opened to that effect in the rural road funds (FVRs).

Project financial reporting arrangements. For Bank purposes, the quarterly financial statements will include: (i) Statement of Sources and Uses of Funds (with expenditures classified by budgetary line and/or disbursement category); and (ii) Uses of Funds by Project Activities (including budget comparison). These project financial statements, along with the physical progress and procurement sections of the Financial Monitoring Reports (FMRs), will be submitted to the Bank not later than 45

days after the end of each semester. FMRs will be used for monitoring, not disbursement, purposes.

For Bank purposes, the annual financial statements will include: (i) Statement of Sources and Uses of Funds; (ii) Uses of Funds by Project Activities; (iii) the schedule of Statements of Expenditure (SOEs) presented during the year in support of Withdrawal Applications; and (iv) the Special Account Statement.

Audit compliance. As of the date of the FM assessment, there were no projects with overdue audit reports in the country portfolio. However, the two audit reports at December 31, 2001 for the first Rural and Main Roads Projects, were submitted late to the World Bank. The FM assessment action plan includes specific actions to ensure timely submittal of future audit reports.

Audit arrangements. Annual project financial statements will be audited in accordance with International Standards on Auditing, by an independent firm and in accordance with terms of reference (TORs) both acceptable to the Bank. The audit opinions will cover at least the project financial statements, Special Accounts and Statements of Expenditures (SOEs).

The project annual audit reports will be submitted to the Bank no later than six months after the end of the reporting period, which should coincide with the calendar year.

The memoranda on internal controls ("management letters") will be issued, at least, on a bi-annual basis.

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.

The project entails the rehabilitation and improvement of existing rural and feeder roads, and therefore significant environmental impacts that could jeopardize the natural environment in their area of influence are not foreseen. Accordingly, the project has been classified as "B Category" for environmental purposes. There will be no significant changes in road characteristics such as width or alignment in any of the proposed roads. Therefore, involuntary resettlement of population is not expected. Deficient design and construction techniques of road networks in the past have resulted in serious environmental degradation (erosion, sediment loads, encroachment). The proposed project will improve deteriorating environmental conditions by introducing better road design and construction techniques, and promoting environmental and social sustainability criteria in the rural road sector in the country.

Stabilizing slopes, restoring borrow pits and material deposit areas, controlling contractor's earthwork management, controlling existing erosion processes, improving road drainage, as well as dealing with issues related to road and pedestrian safety, among others, have to be taken into account when designing the sub projects, to ensure an adequate environmental management for the different project stages. All of these measures will be included in an Environmental Manual for Road Design and Construction (also sent to the Infoshop) that will be part of all bidding documents and contracts.

All projects included in the first package have complied with national environmental regulations and Environmental Reports (ER), which are the instruments designed by the Ministry of Environment and Natural Resources (*Ministerio del Ambiente y de los Recursos Naturales*, MARN) when evaluating low impact projects. The ER is basically a preliminary environmental assessment of each one of the sub projects, where the main environmental impacts in each stage of the project are identified. It also

contains an Environmental Mitigation Plan, in order to take care of all identified environmental and social impacts, as well as the respective budget and activities scheduled to execute the Plan. The ERs for the first proposed package of works were prepared with the technical support of the Environmental Management Department (*Departamento de Gestión Ambiental*, DGA) of DGC and were formally presented to each one of the Mayors of the HUISTA and MAMSOHUE in public meetings summoned by INFOM.

In addition to the above mentioned reports, DGC contracted a comprehensive Environmental Assessment Report for the first package of roads. All project sites were screened for potential triggers of the Bank's environmental and social safeguards. This report has also been presented to MARN and the municipalities. A summary of this report is presented in Annex 17.

An appropriate budget has been included in the project to: (i) carry out all environmental mitigation measures in all rural roads and feeder roads as a percentage of the rehabilitation costs for each segment; (ii) strengthening the environmental management capacity of all actors involved in the project, specially the Environmental Unit of DGC (DGA); and (iii) strengthen the environmental supervision of road construction activities.

Finally, as part of the project preparation, a Rural Transport Strategy is being prepared for Guatemala. This strategy includes, among others, long term environmental and social sustainability issues and is based on: (i) the definition of an environmental and social policy for rural roads in Guatemala: minimizing encroachment of natural habitats and targeting the rural poor; (ii) improving road design and construction practices through the application of environmental manuals for design and construction and enhanced supervision; (iii) the promotion of community involvement and participation in the definition of priorities for project development; (iv) the ensuring of a sustainable maintenance of rehabilitated roads through community enterprises and other options to be defined in this strategy; and (v) strengthening the environmental management capacity of key actors involved.

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

Each road will have its own site specific EMP following the Environmental Specifications Manual. Appropriate budget has been included in the project to implement EMP related activities.

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

Date of receipt of final draft: November 2002

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?

In addition to the consultations carried out with participating municipalities and the MARN, the draft EA report was presented and discussed with environmental NGOs on October 25th, 2002. The EA report includes all relevant information on the workshop such as agenda, participants and main conclusions and recommendations. In addition, the proposed project and the EA were also presented in the "V Latin American Conference on Sustainable Rural Roads" held in Antigua, Guatemala from November 11 to 15, 2002. This Conference was sponsored by DGC as part of the institutional strengthening program for the DGA supported by the current Bank Main and Rural Roads (Loan 4260-GU).

The EA and the Environmental Specifications Manual are available for consultation by all interested

parties at the offices of MARN and DGC in Guatemala City and at the participating municipalities.

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?

Although sub-projects would pose relatively minor environmental risks, environmental supervision clauses will be included in engineering supervision contracts to enforce the application of the Environmental Specifications Manual.

6. Social:

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

The objectives and outcomes of the project are mainly social. The project will contribute to poverty reduction in one of the poorest areas in the country by improving access to markets, employment opportunities, and social services, especially health and education. The project also will reduce travel times and vehicle operating costs. In addition, temporary and permanent employment will be generated through the use of labor-intensive methods for road rehabilitation works and by the creation of micro-enterprises for road maintenance.

Taking into account that roughly 70 percent of the total population in the MAMSOHUE region and 74 percent in the HUISTA region are of Mayan descent, a social analysis and assessment was conducted during project preparation that: (i) adapted the project to the socioeconomic and cultural characteristics of the region; (ii) encouraged community participation in the selection of the road works to be carried out under the project; (iii) identified potential adverse impacts of the project; and (iv) recommended actions to maximize the positive impacts as well as to prevent and mitigate the adverse impacts of the project. The preparation of this assessment involved the use of surveys and focus groups with community leaders and local residents, and was based on a representative sample of small towns in the region. In all, 394 residents were interviewed and 66 focus groups were conducted, representing more than 10 per cent of the small towns of the region and 1 percent of the total population.

The results of the social assessment and analysis validated the expected positive impacts of the project. Local residents in the area of influence perceive that the project will improve access to markets, health and educational services as well as generate employment opportunities. Potential adverse impacts that were identified include increased risk of accidents, possible damage to private properties during works construction, and the protection of 3 local religious sites.

Based on this assessment, a Social Management Plan was designed to maximize the positive impacts and mitigate adverse effects of the project. The Social Management Plan consists of three programs: (i) communication and social awareness, which includes the dissemination of information to *mancomunidades* and community assemblies regarding the progress achieved during project implementation, as well as monitoring claims related to possible damages caused by the project; (ii) respect for local cultural areas, including worker training on the cultural patterns of communities and the protection of local religious sites; and (iii) road safety, which will be developed through seminars

The Social Management Plan will be implemented by INFOM in conjunction with the *mancomunidades*. Implementation of the plan will take into account the different languages spoken in the region as translators will work closely with social specialists. The anticipated cost of the implementation of the Social Management Plan is US\$ 14,000 for each phase of the project works for a total of US\$56,000.

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

During project preparation, local stakeholders participated in the identification and selection of the roads to be rehabilitated. In addition, local residents will participate in the rehabilitation and the maintenance of road works supported by the project, as a result of direct employment generated by the creation of micro-enterprises. The Social Management Plan will also continuously inform communities in the project area regarding the progress achieved in implementation and encourage stakeholder participation during the execution of project works.

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

During project preparation, several meetings were held with the local authorities to analyze the impact of the project, select the road segments to be rehabilitated, disseminate the Bank's safeguard policies, and agree on the environmental and social management plans. Community leaders, NGO, and local residents were also consulted on the potential impact of the project. In all, 394 surveys and 66 focus groups were conducted. This consultative process led to the selection of the roads to be rehabilitated under the project and the preparation of the Environmental and Social Management Plan.

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

As was explained in Section C.4 (Institutional and Implementation Arrangements), INFOM will be responsible for implementing the rural road component, including the social objectives described above. INFOM will also be responsible for carrying out the Social Management Plan and coordinating with the mancomunidades during implementation.

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

The social outcomes of the project will be assessed through monitoring reports, impact assessment studies, and statistical information provided by the municipalities. (see Annex 1).

7. Safeguard Policies:

7.1 Are any of the following safeguard policies triggered by the project?

Policy	Triggered
Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)	<input type="radio"/> Yes <input type="radio"/> No
Natural Habitats (OP 4.04, BP 4.04, GP 4.04)	<input type="radio"/> Yes <input type="radio"/> No
Forestry (OP 4.36, GP 4.36)	<input type="radio"/> Yes <input type="radio"/> No
Pest Management (OP 4.09)	<input type="radio"/> Yes <input type="radio"/> No
Cultural Property (OPN 11.03)	<input type="radio"/> Yes <input type="radio"/> No
Indigenous Peoples (OD 4.20)	<input type="radio"/> Yes <input type="radio"/> No
Involuntary Resettlement (OP/BP 4.12)	<input type="radio"/> Yes <input type="radio"/> No
Safety of Dams (OP 4.37, BP 4.37)	<input type="radio"/> Yes <input type="radio"/> No
Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)	<input type="radio"/> Yes <input type="radio"/> No
Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)*	<input type="radio"/> Yes <input type="radio"/> No

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

Environmental. The project entails the rehabilitation and improvement of existing rural and main roads. Based on this design, it is not anticipated that the project will have any significant environmental impacts that could jeopardize the natural environment in its area of influence. Accordingly, the project has been classified as a "Category B" project. The civil works projects planned under the project will not require carrying out major changes in road characteristics, such as road widening or changing the alignment. In addition, no supplementary works are planned that could affect the direct area of influence of the proposed subprojects. Therefore, involuntary resettlement of population is also not expected. To ensure an adequate environmental management, slope stabilization, restoration of borrow pits and material deposit areas, control of earthwork management and existing erosion processes, road drainage, and issues related to road and pedestrian safety have been taken into account during the design of the road subprojects. All of these measures will be included in an Environmental Manual for Road Design and Construction and will form part of all bidding documents and contracts.

All project works included in the first package have complied with national environmental regulations. Environmental Reports (ER), which are the instruments designed by the Ministry of Environment and Natural Resources (*Ministerio del Ambiente y de los Recursos Naturales*, MARN) when evaluating low impact projects, have been prepared. The ER is basically a preliminary environmental assessment of each one of the sub projects, where the main environmental impacts in each stage of the project are identified. Each ER also contains an Environmental Mitigation Plan to mitigate identified environmental and social impacts, as well as provide the respective budget and activities schedule to execute the Plan.

In addition, an appropriate budget has been included in the project to: (i) carry out all environmental mitigation measures in all rural roads and feeder roads as a percentage of the rehabilitation costs for each segment; (ii) strengthening the environmental management capacity of all actors involved in the project, specially the Environmental Unit of DGC (DGA); and (iii) strengthen the environmental supervision of road construction activities. In addition to the above mentioned reports, DGC contracted a comprehensive Environmental Assessment Report for the first package of roads. All project sites were screened for potential triggers of the Bank's environmental and social safeguards. This report has also been presented to MARN and the municipalities. A summary of this report is presented in Annex 17.

Indigenous Peoples. Roughly 70 percent of the population in the project area is indigenous, mostly of Mayan decent and are primarily involved in subsistence agricultural production. The system of local government is largely community-based. In the MAMSOHUE area, the indigenous population speaks Mam or Tektiteko and about 20 percent of the population are unfamiliar with Spanish. The distribution of indigenous communities in HUISTA is relatively mixed. Some communities have an indigenous population of 90 percent, while in other communities, which are located near the main road linking Guatemala with Mexico, this rate is closer to 20 percent. The indigenous populations speak a variety of languages.

To ensure that indigenous areas in the project area of influence are adequately protected, a consultative process with communities was carried out using surveys to better assess the specific investment needs of the communities in the project area. In this manner, local communities had an active role in selecting the works to be carried under the project as well as determining the timing for implementation. The roads proposed by local authorities and the communities were evaluated on technical grounds by DGC.

Furthermore, a Social Management Plan seeks to ensure that the positive impacts of the project are achieved as well as to prevent and mitigate potentially adverse impacts. This plan, which will be

implemented by INFOM and the association of municipalities, consists of three main programs: (i) dissemination and social awareness; (ii) respect for cultural heritage sites; and (iii) a road safety program. INFOM will disseminate subproject characteristics, current subproject status, and mitigation measures to minimize potentially negative social and environmental impacts through workshops and community assemblies. INFOM will also develop public awareness campaigns. These activities will be coordinated with the association of municipalities, who will assign qualified technical personnel to monitor and oversee the implementation of the Social Management Action Plan. In addition, there will be increased awareness of environmental guidelines and social protection norms through the development and issuance of operational guidelines and the provision of training to contractor employees. Annex 16 provided additional detail regarding the activities of the Social Management Plan.

Cultural Property. The project is also expected to have a very small impact on rural indigenous areas, as most of the civil works projects will be implemented in and around the 93 population centers that form the area of influence of the project. Nevertheless, 3 sites were determined to have religious significance to the Mayan population. These areas were marked and designated for protection under national existing guidelines for protecting cultural and religious sites. Contracts for the rehabilitation and maintenance of road segments 59 and 62 in HUISTA and 30 in MAMSOHUE will explicitly require protection of these nearby sites. Strict monitoring and oversight as well as effective enforcement will be undertaken to ensure compliance. Contractors will be assessed severe penalties in the event of non-compliance. A road education program will be developed to limit accidents in the areas near protected sites.

F. Sustainability and Risks

1. Sustainability:

The project will lead to rural road management techniques that are financially viable and sustainable. The two features of the project that make it sustainable in the long-term are its focus on community-based development and its cost-sharing mechanism.

Community-based development ensures that the inhabitants of the community have a developmental stake in the project since it is after consultations with them that road segments are targeted. Community-based road maintenance micro-enterprises that generate employment will also guarantee that communities reap benefits of not just better roads but also higher incomes and consequently higher standards of living. To further ensure sustainability, the project also includes capacity building features. Financing is provided for technical assistance and training for the associations, the municipalities in the associations, INFOM and DGC. Finally the project presents organizational shortcuts for the local government since most rehabilitation and maintenance works are contracted out to small/medium sized contractors and community-based microenterprises. This ensures that the local government's goals are consistent with those of the project and will build pressure on the local government for sustained and continuous road maintenance.

The financial cost sharing mechanism that has been incorporated into the project also insures that there is no 'principal-agency' problem and assures the long term sustainability of the project. Municipalities in the associations have to contribute annually amounts to pay for the services of UTAV and FVR (fixed financial contribution), and for 25% of the road rehabilitation costs (variable financial contribution). Maintenance costs following rehabilitation works will be paid in full by the municipalities except in the case of the Micro-enterprises Pilot Project financed under the proposed RMRP. This co-financing scheme ensures that there is a clearly defined 'ownership' of the project, with local governments clearly seeing the need to undertake and complete road works.

Finally, the implementation of the SMRRPP has demonstrated that the presence of a ‘beneficiary’ population and of large and significant social impacts of the project will vitally impact the sustainability of the project.

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 government and communities do not develop ownership of the project	M	-The success of the SMRRPP on which the design of the new project is based mitigates the risk. The participatory mechanism that underlies the institutional mechanism and the additional components (Microenterprise Pilot, Paths and Footbridges Pilot) are designed to specifically enhance the social and economic impacts of the project.
- Municipalities not eager to commit resources to assume their road management responsibilities	M	-Detailed analysis of municipal finances and evidence of good results by the SMRRPP. Keen interest awakened in participating and non-participating municipalities, after results have been shown to them, proves that this is a small risk.
- Local leaders and decision makers unwilling to accept the outcome of the planning and prioritization methodologies (political interference in selection of projects)	M	-Investment prioritization were prepared in consultation with municipal authorities and communities. The SMRRPP experience shows the willingness of the authorities to accept a technically and economically valid analysis. Consultations in the preparatory phase of the project also indicate cohesion and unison in accepting such methods.
- Environmentally unsustainable road construction and maintenance practices utilized in road works	N	-Bidding documents will include specific clauses on environmental measures. Further, the cost of mitigation has been factored in wherever necessary in the cost of road rehabilitation, although there are very few such instances.
- Central government delay in transfer of funds leading to unwillingness of the communities to participate.	S	-INFOM is fully committed with the project and will provide bridge-financing to the municipalities, if required.
- Political risk: Change in government and officials at the local level due to elections may yield officials who are not enthusiastic about project implementation and progress.	S	-The project, like the SMRRPP, is being discussed continuously with local officials and participating community leaders to ensure the presence of a momentum independent of the elected officials. FUNCEDE is also organizing

			workshops to involve the local populations and informing them of the goals and objectives of the project.
From Components to Outputs - Counterpart funds are scarce or not released in a timely manner	S	-Investment programs are tailored to the financial capacity of municipalities. Also, the project ensures that counterpart funds are provided prior to commencement of works by ensuring that Mayors are aware of their commitments and are signatories to the declaration.	
-Municipalities not eager to co-finance projects and to participate in the project's institutional program	M	-SMRRPP experience indicates that the risk is low. Further the design of the co-financing arrangement was done in consultation with the municipalities.	
- Political changes at the municipal level affect project implementation and continuity.	M	-This risk was minimized under the SMRRPP by the strong project ownership of the members of the association.	
- Problems in awarding small contracts and in making timely payments to contractors.	S	-Procurement process will be streamlined to avoid delays in awarding contracts and for processing payments.	
- There are excessive delays in obtaining the associations' legal status	N	-The process is well advanced.	
- Political preferences may govern the awarding of contracts.	M	-The process of bidding and awarding contracts has improved significantly under the SMRRPP. Nonetheless it is important to maintain a close monitoring in this issue.	
Overall Risk Rating	M		

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

3. Possible Controversial Aspects:

G. Main Loan Conditions

1. Effectiveness Condition

- that the DGC Operational Manual and the INFOM Operational Manual have been issued and put into effect;
- that COFINEX and UCBM have been properly staffed;
- that the Subsidiary Agreement has been executed by the parties thereto;

- that the Association Agreements have been executed by the parties thereto; and
- that financial management arrangements, satisfactory to the Bank, shall have been established for the Project and become operational.

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

- **Monitoring, Review and Reporting:** DGC and INFOM will prepare and present the Bank, not later than 30 days after the conclusion of each semester, a report on implementation progress. DGC, INFOM and the Bank will conduct a mid-term review of the project not later than December, 2005.

H. Readiness for Implementation

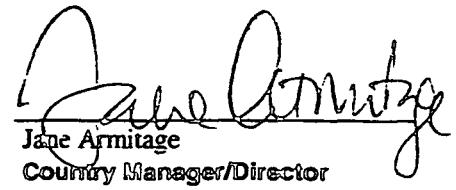
- 1. a) The engineering design documents for the first year's activities are complete and ready for the start of project implementation.
- 1. b) Not applicable.
- 2. The procurement documents for the first year's activities are complete and ready for the start of project implementation.
- 3. The Project 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):
 - that the DGC Operational Manual and the INFOM Operational Manual have been issued and put into effect;
 - that COFINEX and UCBM have been properly staffed;
 - that the Subsidiary Agreement has been executed by the parties thereto;
 - that the Association Agreements have been executed by the parties thereto; and
 - that financial management arrangements, satisfactory to the Bank, shall have been established for the Project and become operational.

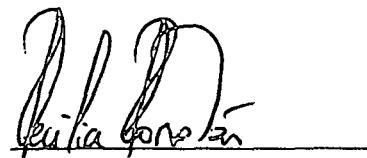
I. Compliance with Bank Policies

- 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.

Guillermo Ruan 
Guillermo Ruan —
Team Leader

Danny M. Leipzig 
Sector Manager/Director

Jane Armitage 
Jane Armitage
Country Manager/Director

Cecilia Corvalan 
Cecilia Corvalan
Co-Team Leader

Annex 1: Project Design Summary
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT

Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions (from Goal to Bank Mission)
Sector-related CAS Goal: The project is consistent with the local development initiatives included in the CAS- (i) reducing poverty; and (ii) building social cohesion and strengthening participatory decision processes.	Sector Indicators: <ul style="list-style-type: none"> • Impact on reducing rural poverty in areas where program implemented. • Better access to health and education services where program adequately implemented. • A well functioning decentralized local governance system in place, at the end of project implementation, with enhanced capability of managing road infrastructure at local level; and strengthened coordination at the central level 	Sector/ country reports: <ul style="list-style-type: none"> • Country monitoring reports. • Impact Evaluation Assessment performed over a sample of benefited and control areas. • DGC, INFOM, and municipal statistics. 	<ul style="list-style-type: none"> • Political commitment and financial support at the central level to pursue decentralization of sector activities and financial resources. • Decentralization of decision making and capacity improvement of local governments will reduce inefficiencies and increase responsiveness of development effort to people's needs. • Favorable macro-economic conditions.

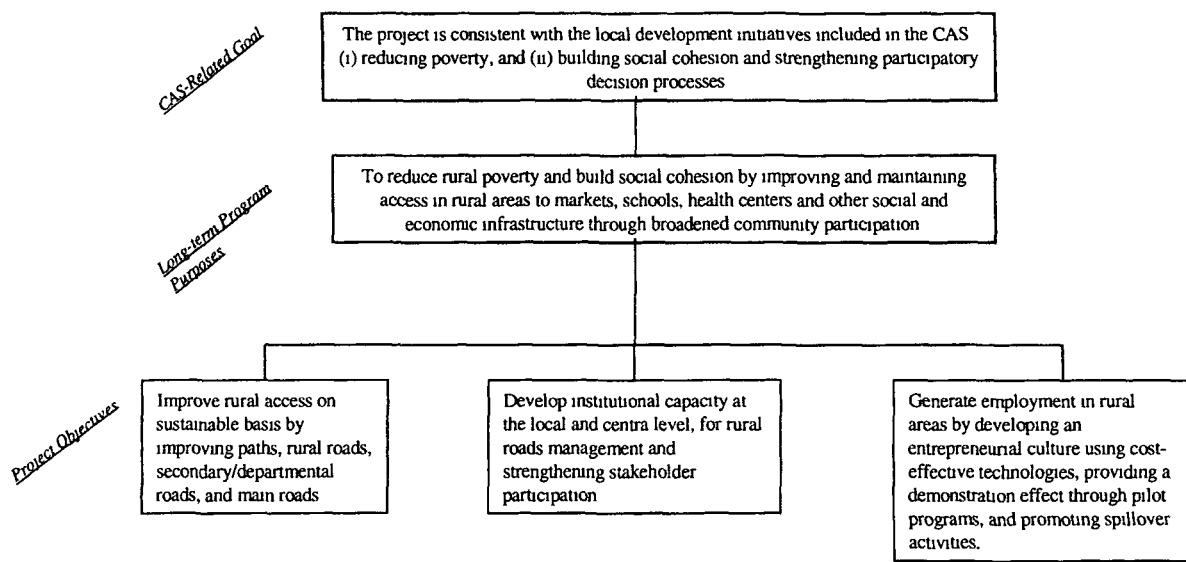
Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions (from Objective to Goal)
Project Development Objective: Reduce poverty and build social cohesion by improving and maintaining access in rural areas to markets, schools, health centers and other social and economic infrastructure through broadened community participation.	<p>Outcome / Impact Indicators:</p> <p>At project completion:</p> <ul style="list-style-type: none"> 1. Improved access to social services and integration of rural zones o 400,000 people from ADIMAM in the San Marcos region will continue to benefit from improved access. o 500,000 people within two new associations in the Huehuetango region, who currently do not have reliable access will be provided with reliable access.- o Travel time to markets and departmental centers reduced up to 40% after rehabilitation of the core network. <p>2. Strengthened institutional capacity to manage rural transport infrastructure on a sustainable basis:</p> <p>At the local level:</p> <ul style="list-style-type: none"> o Three municipal associations participating in the program, co-financing rehabilitation and maintenance activities. o UTAVs fully implemented and assisting 21 municipalities in selecting and prioritizing roads. o FVRs fully implemented. Each municipality within the municipal associations formed under the project contributing Q75,000 per year to finance operational activities. <p>At the national level:</p> <ul style="list-style-type: none"> o Adoption of a national strategy for rural roads and transport, including its discussion with stakeholders. o National institutions involved in the strategy strengthened to fulfill their responsibilities. 	<p>Project reports:</p> <ul style="list-style-type: none"> o Impact Evaluation Assessment performed over a sample of benefited and control areas. o Semiannual reports produced by the PCUs. o Implementation Completion Report prepared by the Bank. o Surveys, road condition inventories on all roads under the project, and road completion reports. o Monthly supervision reports prepared by consultants. Interviews with transport operators, communities, and road users 	<ul style="list-style-type: none"> o Continued Government commitment to the program. o Complementary investments take place to support the program (mainly in departmental and secondary roads).

	<ul style="list-style-type: none"> ● Mid-term impact assessment completed. <p>3. Employment generated in rural areas.</p> <ul style="list-style-type: none"> ● The Micro-enterprise Pilot Project fully implemented and evaluated. Roughly 20 micro-enterprises working on the maintenance of the SMRRPP roads rehabilitated under previous operation (Loan 4260-GU). ● Under a pilot program, approximately 20 community organization and/or micro-enterprises created and fully operational (creation of 150 permanent jobs). ● Creation of an entrepreneurial culture for road maintenance activities through technical assistance for the creation of 20 MEs and training program for 200 local contractors and consultants. 	
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Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions (from Outputs to Objective)
Output from each Component:	Output Indicators:	Project reports:	
1) Rural Roads rehabilitated and maintained.	<p>1.1 830 km of rural roads rehabilitated.</p> <p>1.2 300 km of tracks improved and 80 footbridges constructed.</p> <p>1.3 Pilot for labor-intensive road rehabilitation works implemented in some of the roads of the two municipal associations in Huehuetenango.</p> <p>1.4 Approximately 2000 m of spot improvements along segments of municipal roads outside the core road network</p> <p>1.5 Approximately 20 road maintenance micro-enterprises created in the San Marcos Rural Roads Pilot Project area.</p> <p>1.6 350 km of rural road maintained by microenterprises. Average unit cost of \$245,000 per road maintained by micro-enterprise</p>	<ul style="list-style-type: none"> ○ Semiannual progress reports from the national Project Coordination Units (from INFOM and DGC). ○ Supervision mission reports and PSR's project information system. 	<ul style="list-style-type: none"> ○ Local governments and communities develop ownership of the project and link its purposes to their individual and regional progress. ○ Municipalities are eager to commit technical and financial resources to effectively assume their rural road management responsibility. ○ Local leaders and decisions-makers recognize the value and accept outcome of planning and prioritization methodologies introduced through the Project. ○ Environmentally sustainable road construction and maintenance practices utilized for all road sector activities. ○ Coordination with other programs enhances funding possibilities for further improvements to the rural roads and transport services.
2) Secondary/departmental roads improved and/or rehabilitated	<p>2.1 32 km of secondary/departmental roads upgraded.</p> <p>2.2 175 km of secondary/departmental roads rehabilitated.</p> <p>2.3 Average travel time reduced by 20% on Secondary/Departmental roads implemented under the project.</p>		
3) Main road (CA-1) improved and completed.	3.1 65 km of critical sections of main road (CA1) reconstructed.		
4) Enhanced capacity of the associations of municipalities to support the maintenance and development of rural road infrastructure on a sustainable basis.	<p>4.1 Permanent Technical Units (UTAVs) and regional road funds (FVR) implemented and strengthened in the associations included in the project.</p> <p>4.2 20 road maintenance micro-enterprises contracted and working satisfactorily on the maintenance of the roads rehabilitated by the San Marcos</p>		

	Rural Roads Pilot Project. 4.3 Satisfactory implementation at national level of relevant components of the Social Management Plan 4.4 Satisfactory implementation at local level of relevant components of the Social Management Plan		
5) Strengthened national institutional capacity to manage rural transport infrastructure and services on a sustainable basis.	5.1 Project Coordination Unit from INFOM Incorporated into the Organizational structure of INFOM.		
Project Components / Sub-components: A. Works: 1. Rural Roads Program i. Rehabilitation of Rural/Municipal Roads ii. Maintenance of rural roads iii. Pilot Projects: (i) Micro-enterprises; (ii) Paths/Trails and Footbridges; and (iii) Labor-intensive.	Inputs: (budget for each component) i. US\$17 million ii. US\$0.8 million iii. US\$2.5 million	Project reports: Project Implementation Plan (PIP) developed by the Borrower and agreed to by the Bank. Biannual Progress Reports on project execution issued by the project coordination units (INFOM and DGC). Annual Performance Audits. PSRs.	(from Components to Outputs) Timely release of counterpart funds ensures continuity of rehabilitation and maintenance programs. Municipalities eager to co-finance rural road maintenance under the project arrangements and participate in the project's institutional program. Political changes at the municipal level do not affect project implementation Adequate staff continuity within national Project Coordination Units (INFOM and DGC). No major difficulties in the awarding of small contracts at the regional level and processing payments promptly.
2. Main, Secondary/ Departmental Roads Program i. Reconstruction of Critical section of main road (CA1).	1. US\$10.50 million	PSRs.	

	ii. Upgrading Secondary/Departmental Roads iii Rehabilitation of Secondary/Departmental Roads iv. Road Maintenance	ii. US\$7.55 million iii. US\$5.1 million iv. US\$1.3 million	
<i>B. Institutional Development:</i> 1. Support for Decentralized Road Development. i. Project Coordination and Equipment. ii. Municipal Capacity Strengthening. iii. TAs for Project Implementation. iv. Works supervision	i. US\$1.0 million ii. US\$1.55 million iii. US\$1.41 million iv. US\$1.0 million		
2. Support for Secondary/Departmental Roads. i. Project coordination and equipment ii. Engineering Studies/Final Design/Project Preparation iii. Works Supervision.	i. US\$ 1.5 million ii. US\$ 2.0 million iii. US\$2.75 million		



<i>Works</i>	<i>Institutional Development</i>
<p>Rural Road Program</p> <ul style="list-style-type: none"> • Rehabilitation of Rural/Municipal Roads • Road Maintenance • Pilot Projects (i) Microenterprises; (ii) Trails, Paths, and Footbridges, and (iii) Labor-Intensive Road Rehabilitation 	<p>Support for Decentralized Road Development</p> <ul style="list-style-type: none"> • Project Coordination and Equipment. • Municipal Capacity Strengthening. • TAs for Project Implementation • Works Supervision
<p>Main and Secondary/Departmental Roads</p> <ul style="list-style-type: none"> • Reconstruction of Main Road • Upgrading Secondary/Departmental Roads • Rehabilitation of Secondary/Departmental Roads • Road Maintenance 	<p>Support for Main Secondary/Departmental Roads</p> <ul style="list-style-type: none"> • Project Coordination/Equipment • Engineering Studies/Final Designs • Works Supervision

Annex 2: Detailed Project Description
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT

The Rural and Main Roads Program (RMRP) builds on the initiatives of the San Marcos Rural Roads Pilot Project (SMRRPP) included in the on-going Rural and Main Roads Project (Loan 4260-GU), replicating its participatory model in other parts of the country. The objective of the project is to reduce poverty and build social cohesion by improving and maintaining access in rural areas to markets, schools, health centers and other social and economic infrastructure through broadened community participation.

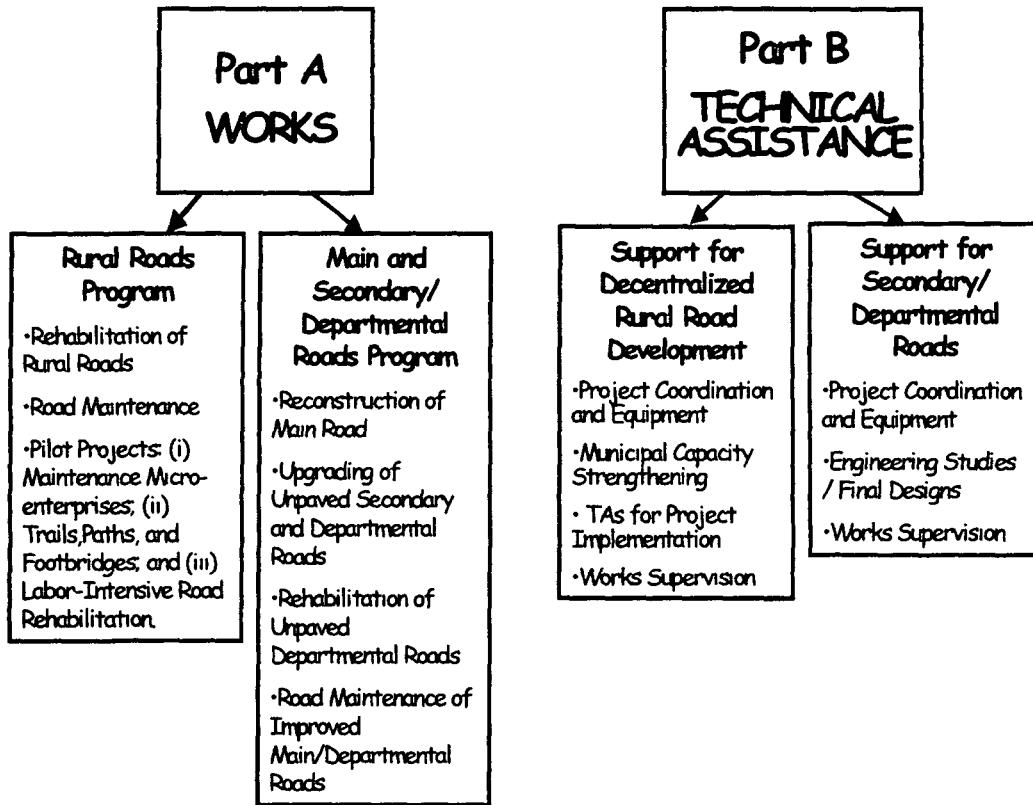
The RMRP will follow the SMRRPP model of establishing associations of municipalities to undertake road rehabilitation and maintenance in rural areas. The RMRP will also contain several new elements not included in the SMRRPP. It will pilot three initiatives: the introduction of road maintenance micro-enterprises in rural areas; the use of labor-intensive methods for road rehabilitation; and the improvement of non-motorized access (tracks, trails and footbridges – the mainstay of ‘access’ in some remote areas of the country). It is envisaged that the RMRP, by emphasizing local involvement in selecting, funding, supervising and maintaining rural roads and other investments, will not only improve rural accessibility but in the process, will alleviate the exclusion and isolation of rural communities in the country.

The SMRRPP focused its intervention on the area comprising twelve municipalities integrated into an association of municipalities in the Altiplano Marquense in the Department of San Marcos, one of the poorest areas of Guatemala that was seriously affected during the years of civil war.

The RMRP will focus its intervention in 2 new associations (MAMSOHUE and HUISTA) in the department of Huehuetenango (a department also affected by extreme poverty and a conflict-ridden past). One association comprises 8 municipalities located in the northwestern part of the Department under the name *Mancomunidad de la Región Huista de Huehuetenango* (HUISTA). The other association comprises 13 municipalities in the southwestern part of the Department under the name *Mancomunidad de Municipalidades del Sur Occidente de Huehuetenango* (MAMSOHUE).

The RMRP involves the establishment of participatory and decentralized mechanisms for selecting, funding and implementing rural roads rehabilitation and maintenance programs. For this purpose it focuses on the “core” road network of both municipal associations. This core network comprises rural roads under the responsibility of the municipal associations, as well as the roads connecting the municipal seats with each other, which are under DGC or COVIAL administration. The project will rehabilitate most of the core network under the responsibility of the municipal associations. In addition, it will rehabilitate or upgrade selected DGC roads included in the core network, as well as roads connecting this core network to the main road network of Guatemala under DGC administration.

The project comprises four components, as visualized in the following scheme:



A brief description of each component follows:

By Component:

Project Component 1 - US\$20.30 million

A.1. RURAL ROADS PROGRAM (PRA: INFOM)

This component comprises three sub-components: (i) Rehabilitation of Rural Roads; (ii) Road Maintenance; and (iii) Pilot Projects.

A.1.i. Rehabilitation of Rural Roads - US\$17.0 million

This sub-component will finance rehabilitation of approximately 830 km of rural roads in the territory of both municipal associations in Huehuetenango to restore year-round transitability and ensure physical access tailored to the specific transport needs of the local communities.

The core network of the two Huehuetenango associations comprises 840 km. of which about 830 km

have been proposed for improvement or rehabilitation under the project. Though poorly engineered, these roads have geometric standards adapted to the difficult terrain and the low traffic they serve. The type of civil works to be executed on these roads are:

- Upgrading the drainage system by improving existing transversal and longitudinal drainage and constructing new drainage where required;
- Rehabilitation of existing gravel roads or upgrading of natural surface (mostly rock) roads to gravel surface standards;
- Road segments with very steep gradients or sharp curves will be treated with low grade concrete to prevent erosion and to provide a better riding surface, a method successfully used for many years in Guatemala on low traffic roads (about 25 km);
- Gravel surfaces will be replaced by stone pavements in stretches of roads traversing villages or densely populated communities (about 25 km); and
- Paving roads experiencing high volume of traffic (about 25 km).

Additionally, this component will finance spot improvements along segments of municipal roads outside the core network, totaling about 2,000 m. The purpose of this intervention is to improve short sections of roads that become impassable during the rainy season. The type of works will include: (i) construction or rehabilitation of transversal and longitudinal drainage to prevent the formation of ponds on the road; (ii) protection against erosion of stretches having steep gradients or sharp curves by applying a low grade concrete layer or stone pavements; (iii) rehabilitation or construction of small bridges (not more than 10 meters long); and (iv) slide removal.

According to present cost estimates, the above described works in Huehuetenango will cost about US\$17.0 million (four packages of works are envisaged during project execution). The packages are described in detail in accompanying documents in the project file, and are summarized in Annex 4.

A.1.ii. Road Maintenance - US\$0.8 million

This component would be fully financed by the associations of municipalities included in the project. It will include the cost of routine and periodic maintenance activities for the roads rehabilitated or improved under the project. It is expected that only roads rehabilitated during the first year of project implementation will receive periodic maintenance at a later stage of project implementation.

A.1.iii. Pilot Projects - US\$2.5 million

Pilot Project in Road Maintenance. This Pilot Project would establish a system of associative Micro-enterprises (MEs) to carry out satisfactory and cost effective routine maintenance of about 350 km of rural roads rehabilitated under the SMRRPP financed by Loan 4260-GU. If successful, this concept could be extended to the other municipal associations in the project. Annex 12 describes this component in more detail.

The Unit Cost for routine maintenance of rural roads has been estimated at US\$700/km/year, including labor, tools, safety equipment and mobilization. Consequently, routine maintenance of about 350 km will cost US\$245,000 per year, plus US\$40,000 for supervision. It is also estimated that the establishment of the MEs system in San Marcos will cost \$230,000 in expenditures for publications, training, promotions and assistance by a foreign expert, which is included in the corresponding technical assistance component.

Pilot Project on Trails, Paths and Footbridges. This Pilot Project would identify the extent of the trails and paths system presently serving isolated communities in ADIMAM's territory and develop a methodology to improve their standards and serviceability. In addition it would promote the beneficiaries' participation in the various phases of subproject generation, design, implementation and maintenance. The pilot project would comprise execution of small works along, or at critical spots of, selected trails and paths, and construction of footbridges required along these routes. Finally, the pilot project would promote the extension of its findings to other regions of the country. For more details see Annex 13.

Pilot project on Labor-Intensive Road Rehabilitation Works. The main objective of this pilot project, described in Annex 14, is to make optimum use of the resources available in the economy and in the project region where many people are underemployed and natural construction materials are often found in the proximity of the works site. This objective can be achieved by using labor-based equipment supported methods to rehabilitate and improve municipal roads efficiently and to the required standards (the term labor-based equipment supported means labor supported by machines rather than machines supported by labor).

The pilot project would provide for the selection of one or two road sections to be rehabilitated or improved, using labor-based construction methods, in each of the regions of MAMSOHUE and HUISTA Municipal Associations. These road sections would be selected from the roads conforming the first package to be procured under the project. If the procurement and implementation of the labor-based road sections are successful, more labor-based roads would be included in the remaining procurement packages.

Project Component 2 - US\$24.45 million

A.2. SECONDARY/DEPARTMENTAL ROADS PROGRAM (PRA: DGC)

This component comprises 4 sub-components: (i) Reconstruction of Main Road; (ii) Upgrading of Unpaved Secondary/Departmental Roads; (iii) Rehabilitation of Unpaved Departmental Roads; and (iv) Road Maintenance.

A.2.i. Reconstruction of Main Road, about 65 km of CA-1 West – US\$10.50 million

CA-1W is one of the two main roads interconnecting Central Guatemala with its western departments and with southern Mexico. It has experienced a substantial traffic increase since the consummation of the peace process and traverses one of the most rugged regions of the Guatemalan territory. Contracts let in 1999 for the upgrading of the road were hampered by deficient engineering design standards, unforeseen sub-grade failures of several road sections, lack of funding, the effects of hurricane Mitch, and severe rains experienced during the rainy seasons following hurricane Mitch which increased the level of the waters of the Selegua River that runs parallel to the road and caused severe damages to the road embankment. The contracts were reformulated to concentrate execution of higher level works in some critical sections. As a result of this, at present it is necessary to carry out pavement strengthening works along nearly 100 km, and reconstruct two road sections totaling about 20 km. The corresponding costs are estimated at US\$21,525 million, of which US\$10.50 million would be financed under the project. Project works will comprise of mainly drainage works, strengthening of base layers, asphalt concrete overlays, reconstruction of critical sections, including the replacement of eroded embankments, the construction of river defenses, and improved signalization. This component will also cover overlay and reconstruction works along Section III (51.9 km), which presently has the worst road and traffic

safety conditions (Annex 4). The criteria for prioritizing the road sections to be reconstructed, description of the works required and estimation of costs are described in detail in the project file.

A.2.ii. Upgrading of about 32 km of unpaved Secondary/Departmental Roads - US\$7.55 millions

Secondary and departmental roads under DGC administration in the territory of the Huehuetenango associations have a total length of 822 km, of which 525 km are integrated into the core network of both associations. Sub-components, A.2.ii and A.2.iii would finance jointly the improvement of selected sections of these roads, that link the municipal seats with each other, thus integrating the core road network of each association; or connect the core network with the main roads of the country, thus providing access to the rehabilitated core network. These selected road sections, totaling 207 km are presently unpaved roads carrying traffic in the range of 40 to 400 vehicles a day and are mostly in poor to very poor condition. The criteria for selection of these roads to be improved, description of works required for each section and the corresponding cost estimates are described in detail in the project files.

Four of these road sections, totaling 32 km, included in the first package of works, have been selected for upgrading to paved standards under sub-component A.2.ii, because they link main roads with each other and will therefore be integrated into the national highway system. The paving works include necessary improvement of drainage works, sub-grade and slopes consolidation, and strengthening of shoulders. Paving of these roads would contribute effectively to the economic development of the region and, consequently, to reduction of poverty.

A.2.iii. Rehabilitation of about 175 km of unpaved Departmental Roads – US\$5.10 million

Sub-component A.2.iii. would finance the rehabilitation of the remaining 175 km of these selected unpaved road sections. The type of civil works to be executed on these roads are: upgrading of the drainage system by improving existing transversal and longitudinal drainage and constructing new drainage where required; and rehabilitation of existing gravel roads or upgrading of natural surface (mostly rock) roads to gravel surface standards.

A.2.iv. Road Maintenance - US\$1.30 million

This sub-component would use local funds for financing routine maintenance of the roads rehabilitated or paved under the project. All maintenance activities would comply with annual rural roads maintenance programs to be prepared by COVIAL.

Project Component 3 - US\$ 4.96 million

B.1. SUPPORT FOR DECENTRALIZED RURAL ROAD DEVELOPMENT (PRA: INFOM)

The centerpiece of the RMRP is the extension of the sustainable arrangements and financing of local roads in rural areas developed under the SMRRPP to other Departments. The rural networks of the municipalities are too small to justify the build-up of technical capacity to manage roads in each municipality. In order to reach the scale of a cost-effective road network, the municipalities formed the two associations mentioned above, HUISTA and MAMSOHUE. Both have already obtained their legal status and decided unanimously in meetings held in April 2002 that each one would constitute the core entity for the management of the respective municipal road network and would contribute with all the efforts and funds required for the successful implementation of the RMRP in their respective territories.

The planning, programming and management of rural roads maintenance and rehabilitation of the municipal associations would be contracted out with the private sector. The associations would employ

the institutional framework successfully developed for the ADIMAM municipal association under the SMRRPP. Each association would create a Road Technical Assistance Unit (UTAV) staffed according their specific needs. A national consulting firm will be hired under the project to train and advise the UTAVs during the first stages. Additionally, Regional Road Funds (FVRs) will be created in each association.

INFOM would be the national level agency responsible for the implementation of the components A1 and B1 of the project. It has proven its suitability to act as a national coordination unit for municipal roads through the successful implementation of the SMRRPP. In order to perform effectively the tasks demanded by the simultaneous execution of the SMRRPP, the implementation of the programs with both Huehuetenango associations, and an eventual preparation and launching of additional programs in other Departments, INFOM's PCU (UCBM) would need substantial strengthening.

This component comprises 4 sub-components: (i) Project Coordination and Equipment; (ii) Municipal Capacity Strengthening; (iii) TAs for project implementation; and (iv) Works Supervision.

B.1.i. Project Coordination and Equipment - US\$1.00 million

This sub-component would finance consultant services that INFOM would need to strengthen its in house capacity to perform the multiple tasks demanded by the simultaneous execution of the SMRRPP and the RMRP projects, mainly to attend satisfactorily the tasks related to project strategies and to legal and technical aspects. It would also finance key staff of the project's PCU (UCBM) and those expenditures related to the enlargement of the needed office space and to the acquisition of supplementary office equipment, computers and accessories, needed for the adequate implementation of the project.

B.1.ii. Municipal Capacity Strengthening - US\$1.55 million

Municipal Capacity Strengthening. Municipal Governments in Guatemala are increasingly being given more self-determining roles in their administrative activities, but for the most part have serious limitations in their ability to assume these roles. During the preparation of the municipal financial analysis of the municipalities of the Huehuetenango Associations it became clear that strengthening the organizational capacity of the municipalities is necessary. This sub-component would finance consultant services to improve the technical capacity of the municipal governments to organize their administrative activities and resource management.

Strengthening of Technical Units (UTAVs) for Associations. This activity would finance TA to the UTAVs to: strengthen their works programming, engineering, contracting and supervision capacity; develop cost effective alternatives, to homogenize procedures among the different UTAVs (ADIMAM's, MAMSOHUE's, and HUISTAS') and to provide continuity in their activities.

TA for Municipal Associations. This activity would finance minor consultant services that the participating associations would need to improve their managing capacity, not covered under other sub-components. In particular it would finance the salary of the administrator of the Regional Road Fund (FVR) to be created in each association. The sub-component would also finance acquisition of office equipment, computers, communication equipment and vehicles needed for adequate performance of the association's duties under the project, including the FVR and the UTAVs.

B.1.iii. TAs for Project Implementation - US\$1.41 million

T.A. for Implementation of Micro-enterprises. This activity will finance the TA required to set up the maintenance micro-enterprise system, including legal, promotional, selection and training aspects, as

well as the participation of a foreign expert on maintenance MEs. Supervision costs for the performance of the ME program are included in sub-component B.1.iv.

T.A. for Labor-Intensive Works. This activity would finance the TA required for the selection of the roads best suited for the application of labor-intensive work methods, as well as for preparation of special bidding documents, and of execution and supervision guidelines for these works.

Final Designs/Project Preparation. This activity will finance studies required for the works to be implemented under the sub-components A.1.i., and A.1.iii., as well as studies for further project preparation, if the GoG decides so.

B.1.iv. Work Supervision- US\$1.0 million

This sub-component will finance the supervision of civil works to be executed under the components A.1.i. and A.1.iii.

Project Component 4 - US\$6.25 million

B.2. SUPPORT FOR MAIN/DEPARTMENTAL ROADS (PRA: DGC)

B.2.i. Project Coordination and Equipment - US\$1.50 million

This sub-component will finance operation costs and equipment for the Project Coordination Unit, COFINEX, during the project implementation period.

B.2.ii. Engineering Studies/Final Design - US\$2.00 million

This sub-component will finance engineering studies and final design for works to be financed under sub-component A.2.i., A.2.ii., and A.2.iii.

B.2.iii. Work Supervision - US\$2.75 million

This sub-component will finance the supervision of execution of civil works to be financed under sub-component A.2.i., A.2.ii., and A.2.iii.

Project Component 5 - US\$7.29 million

C. Contingencies.

Physical Contingencies	US\$ 4.50
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Price Contingencies	US\$ 2.79
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Project Component 6 - US\$63.25 million

Total Project Cost

Project Component 7 - US\$0.47 million

Front End Fee

Project Component 8 - US\$63.72 million

Total Financing

Annex 3: Estimated Project Costs
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT

Project Cost By Component	Local US \$million	Foreign US \$million	Total US \$million
A.1 Rural Roads (INFOM)	5.68	14.62	20.30
A.2 Main and Secondary/Departmental Roads Program - Works (DGC)	7.10	17.35	24.45
B.1 Support for Decentralized Rural Roads - TA and Consultants (INFOM)	0.96	4.00	4.96
B.2 Support for Main/Departmental Roads - TA and Consultants (DGC)	1.25	5.00	6.25
Total Baseline Cost	14.99	40.97	55.96
Physical Contingencies	1.28	3.22	4.50
Price Contingencies	0.75	2.04	2.79
Total Project Costs¹	17.02	46.23	63.25
Front-end fee		0.47	0.47
Total Financing Required	17.02	46.70	63.72

Project Cost By Category	Local US \$million	Foreign US \$million	Total US \$million
Goods	0.00	0.00	0.00
Works	14.70	36.79	51.49
Services	2.32	9.44	11.76
Training	0.00	0.00	0.00
Total Project Costs¹	17.02	46.23	63.25
Front-end fee		0.47	0.47
Total Financing Required	17.02	46.70	63.72

¹ Identifiable taxes and duties are 0 (US\$m) and the total project cost, net of taxes, is 63.72 (US\$m). Therefore, the project cost sharing ratio is 73.29% of total project cost net of taxes.

Annex 4: Cost Benefit Analysis Summary
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT

Introduction

The project will finance the rehabilitation requirements of three categories of roads: (i) rehabilitation and partial reconstruction of a main road (US\$10.50 million), (ii) upgrading and rehabilitation of secondary/departmental roads (US\$12.65 million), and (iii) rehabilitation of rural roads (US\$17.0 million), totaling US\$40.15 million, or 72% of the total base cost of the project.

The main road and some of the secondary/departmental roads included in the first year of project implementation were subject to cost-benefit analysis. The economic justification of the main road was carried out using the HDM model and was based primarily on the quantified benefits that can be attributed to the road improvements, in particular, savings in vehicle operating costs. The economic analysis of secondary/departmental roads was also based on the HDM model. However, the results of this analysis were subjected to an extensive validation process incorporating criteria for improving connectivity to the main road network. For rural roads with low to very low traffic volumes (less than 40 vehicles per day), traditional economic calculations do not apply and, for that reason, only multi-criteria procedures were applied. These procedures had a strong element of consultation and the views of local community members were taken into consideration. The concept of the core network, as described in the main text and in Annex 2 of the PAD, was incorporated into this analysis.

Successful achievement of an adequate selection and prioritization of rural roads requires a grassroots-oriented participatory framework of the sub projects selection procedures. Therefore, the selection of sub projects consists of a process of steps ensuring 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 implementation of the SMRRPP and the preparation of the RMRP led to the development of methodologies to measure the multidimensional impacts of investments in rural roads infrastructure attempting a satisfactory balance between adequate eligibility criteria, the related cost/benefits analysis, and the need for their easy applicability in the field. The proposed methodologies attempt to capture these various dimensions in a stepwise fashion with emphasis on institutions and communities grassroots-oriented actions first, consideration of poverty and other social indicators second, and the evaluation of economic worthiness, third. Different methodologies were developed for the two distinct types of roads comprised in the core road network of the municipal associations to be included in the project: (i) secondary/departmental roads carrying a traffic of more than 40 vehicles per day (vpd), which are under DGC administration and to which traditional Bank devised evaluation methods can be applied, and (ii) departmental and rural roads carrying a very low traffic (less than 40 vpd) which are under DGC and municipal administration, for which traditional economic evaluations do not apply, and which are therefore evaluated using multi-criteria procedures.

The three different procedures used for cost-benefit analysis and selection and prioritization of road sections are discussed in more detail in the following three sections of this annex.

Cost Benefit Analysis of Main Roads

The main road serving the territory of both municipal associations, CA-01 Occidente, has been selected for rehabilitation/reconstruction under the project. It is one of the two main roads interconnecting Central Guatemala with its western departments and with southern Mexico. This road traverses one of the most rugged regions of the Guatemalan territory and experienced a substantial traffic increase since the

consummation of the peace process. Contracts let in 1999 for the rehabilitation of the road between Cuatro Caminos and La Mesilla (152.3 km) were hampered by delays in starting construction, unforeseen sub-grade failures of several road sections, lack of funding, the effects of hurricane Mitch, and severe rains experienced during the rainy seasons following hurricane Mitch which increased the level of the waters of the Selegua River that runs parallel to the road and caused severe damages to the road embankment. The contracts were reformulated to concentrate execution of higher level works in some critical sections. As a result of this, at present it is necessary to carry out pavements strengthening works along 97 km, and reconstruct two road sections totaling about 20 km.

Required Works

The required works can be summarized as follows:

- **Section I Cuatro Caminos – Estancia La Virgen (54.4 km):** Subsections D and E (8.0 km), pavement overlay of 14 or 15 cm thickness including upgrading of drainage works; and subsection F (11.0 km), reconstruction;
- **Section II Estancia La Virgen – San Sebastián Huehuetenango (46 km):** 5.5 cm overlay of total road length; and
- **Section III San Sebastián Huehuetenango – La Mesilla (51.9 km):** Subsections A, C and D (43.3 km), 4 cm overlay including upgrading of drainage works; and subsection B (8.6 km), reconstruction including replacement of eroded embankments and construction of defenses to prevent lateral erosion of embankments by the river Selegua along 2.6 km of the road.

Cost of Works: The estimated cost of these works are summarized in Table 4.1.

Table 4.1 Cost of proposed reconstruction/rehabilitation works for Road CA-01 Occidente

Section of Road CA-01	Length km	Proposed Type of Works	Total Cost US\$ 000
Section I. Cuatro Caminos (km 185.6) – Estancia La Virgen (km 240.0)	54.4	Overlay, drainage, 8.0 km Reconstruction, 11.0 km	8,325
Section II. Estancia La Virgen (km 240.0) – San Sebastián H. (km 286.0)	46.0	Overlay, drainage, 46.0 km	2,700
Section III. San Sebastián Huehuetenango (km286.0) - La Mesilla (km 337.916)	51.9	Overlay, drainage, 43.3 km Reconstruction and river protection works, 8.6 km	10,500
Total Works	152.3	98.9 km	21,525

It was clear from the outset of this economic analysis that it would not be possible to finance under the proposed loan the rehabilitation/reconstruction of all three road sections. Funding would be available only for about half of the total amount required. Since Section III is the one presently offering the worst road and traffic safety conditions and is also the one closest to total collapse due to the danger of further erosion by the Selegua river, the Government decided to confer highest priority to the execution of the works on this section. Moreover, this decision was backed up by its importance for international tourism coming from Mexico attracted to the Mayan Route in the area, as well as by the fact that contracting of works in this section can proceed expeditiously, because, contrary to Section I, it is not jeopardized by legal difficulties derived from the liquidation of cancelled previous contracts. The economic justification of this road section was undertaken using the HDM-III Model, which determines savings of vehicle

operating costs (VOC) for different investment strategies considering the parameters briefly described below.

Traffic Levels. Traffic volumes were estimated based on periodic traffic counts undertaken by DGC in the past, resulting in traffic projections of 2088 vpd. for year 2002 and 3771 vpd. for 2016, as shown on Table 4.2. Generated traffic was not considered relevant.

Table 4.2: Average daily traffic (ADT) and traffic growth rates

Year/Rate	Car	Pick-up	Truck 2 Axles	Medium Truck	Heavy Truck	Minibus	Large Bus	Total
ADT 2002	272	999	202	8	12	478	117	2088
ADT 2016	462	1921	343	14	20	812	199	3771
Rate 2002-2004	2%	2%	2%	2%	2%	2%	2%	2%
Rate 2004-2016	4%	5%	4%	4%	4%	4%	4%	4% and 5%

Characteristics and unit costs of the vehicle fleet. The average age of the vehicle park, constituted mostly of used vehicles imported from the US, is rather high, about 15 years. The vehicle fleet characteristics used for the evaluation of vehicle operating costs are those commonly used by DGC in routine economic evaluations, are based on consultant studies and are acceptable to the Bank. The standard unit costs used in the economic evaluation for the “without project” case, as well as in the “with project” case considering the roughness index (IRI) projected for this road section are similar to those used for secondary/departmental roads (Table 4.6). They are also acceptable to the Bank.

Evaluation Horizon. The evaluation horizon was estimated at 15 years. The construction period was estimated to be one year.

Sensibility analysis and switching values. The economic evaluation includes a sensibility analysis considering two scenarios: (i) 20% cost increase in construction costs, and (ii) 20% decrease of benefits. The switching values for the construction costs were expressed as a ratio between the cost which, after discounting 12%, render a net present value of zero, and the respective base cost. Similarly, the switching values for the benefits were expressed as the factor (less than 1.0) that turn the base case benefits to zero, representing the rate of decrease of benefits that turns the feasibility from positive to negative. Table 4.3 summarizes the economic indicators for the works proposed for Section III of road CA-01 Occidente.

Table 4.3 Summary of Economic Indicators

Road Section	Indicators	Base Case	Costs + 20%	Benefits - 20%	Switching Values Costs	Switching Values Benefits	Maximum Investment US\$ million
SECTION III	IRR (%)	18.4%	15.5%	14.9%	1.52	0.65	15.95
	NPV (US\$ million)	4.13	2.54	1.76			
	NPV/km (US\$ 000)	79 609	48.983	33.959			

IRR Internal Rate of Return

NPV Net Present Value(discounted at 12%)

The NPV, discounted at 12%, amounts to US\$ 4.13 million, the NPV/km amounts to US\$79,609 and the IRR to 18.4%. The sensibility analysis shows that 20% cost increase or 20% benefits decrease still maintain the economic indicators at feasibility rates above 12%. A 20% cost increase diminishes the NPV to US\$2,54 million, and a 20% benefits decrease, to US\$1.76 million. The NPV/km decreases

respectively to US\$48,983 and US\$33,959. The switching values are acceptable, 1.52 for increased costs and 0.65 for decreased benefits (corresponding to 35% of benefit decrease).

Conclusion. The above economic analysis confirms the feasibility of the proposed works which are extremely important for the integration and economic development of the country and for the consolidation of the project's objectives in the Huehuetenango region.

Selection Criteria and Economic Analysis of Secondary/Departmental Roads

The secondary/departmental roads included in the project correspond to those connecting municipal seats with each other or to the national road network. During project preparation these roads were defined in the two municipal associations of the Huehuetenango Department based on extended field reconnaissance campaigns by DGC officers and consultants and extensive discussions with municipal authorities involved, confirmed through inquiries with members of beneficiary communities. These campaigns considered primarily general geographic conditions, present road status, population densities, production potentials, poverty and other social indicators, connectivity to the national road network and to administrative, commercial, education and health centers, traffic density and likeliness of securing from other sources financing for the execution of the required works.

The application of multiple selection criteria led to the identification of 207 km of candidate secondary/departmental roads to be rehabilitated or improved in the territory of the two Huehuetenango municipal associations, representing a total cost of US\$12.65 million for upgrading and rehabilitation works and for periodic and routine maintenance activities during the project implementation period. These roads were prioritized using the same criteria outlined above, resulting in four tentative annual packages of works, which were validated in a general meeting with the mayors of all involved municipalities and confirmed by the respective municipal councils. The works included in the first year package, shown in the Table 4.4 below, were submitted to economic analysis carried out using the HDM-III model. This model determines total savings in transport costs considering road investment and maintenance costs, plus vehicle operating costs for different investment strategies, ranging from simple regraveling to major asphalt paving jobs.

Table 4.4: Proposed First Year Works Package

Departmental Road Section	Length km	Proposed Type of Works	Unit Costs US\$/km	Total Cost US\$M
RD-6: Junction CA-1(km 315) - La Libertad	5.6	Asphalt Paving	230,000	1.29
RD-11 Junction CA-1 (km 274) – Sta Bárbara	8.0	Asphalt Paving	230,000	1.84
RD-8 Junction CA-1 San Pedro Necta	5.8	Asphalt Paving	230,000	1.33
RD-8: San Pedro Necta – Santiago Chimaltenango	12.3	Asphalt Paving	230,000	2.83
RD-s/n Junction RD-12 (Nentón) - Bihíl (border San Mateo Ixtatán municipality)	20.2	Rehabilitation with Selected Material	30,000	0.61
Total	51.9			7.90

Traffic levels and growth rates. During the field campaigns to study all candidate roads, DGC personnel undertook in June 2002 two days traffic counts and estimation of likely traffic increase rates on roads included in the annual packages. Annual traffic growth rates were estimated at 4% to 5% for the roads included in the first year program delineated in Table 4.5. The pedestrians detected shoulder-carrying loads would most probably switch to using pick-ups if their income level increases.

Table 4.5: Average Daily Traffic and Traffic Growth Rates

Departmental Road Section	Pedestrians	Pickups	Trucks 2 Axles	Medium Trucks	Buses	Total
RD-6 Junction CA-1 (km 315) - La Libertad	162	261	0	15	1	278
RD-11 Junction CA-1 (km 274) - Santa Bárbara	169	194	2	50	0	246
RD-8 Junction CA-1 - San Pedro Necta	N/A	228	2	48	4	282
RD-8* San Pedro Necta - Santiago Chimaltenango	N/A	228	2	48	4	282
RD-s/n: Junction RD-12 (Nentón) - Bilib (border San Mateo Ixtatán municipality)	N/A	25	8	20	5	58
Traffic growth rates	N/A	5%	4%	4%	4%	4%-5%

N/A – Not Available

Estimates for generated traffic and the corresponding increase rates were made separately for gravel roads to be upgraded and for gravel roads to be rehabilitated, as shown in Table 4.6.

Table 4.6: Generated Traffic

Departmental Road Section	Pedestrians	Pickups	Trucks 2 Axles	Medium Trucks	Buses	Total
RD-6 Junction CA-01 (km 315) - La Libertad	162	261	0	15	1	278
RD-11. Junction CAI (km 274) - Santa Bárbara	169	194	8	50	0	246

Characteristics and unit costs of the vehicle fleet. The roads analyzed are mostly of an extremely low design standard with sinuous curvature combined with steep gradients and very rough road surfaces in mountainous terrain dedicated mainly to coffee cultivation. Therefore, the most representative vehicle is the four wheel drive Toyota pick-up truck, as well as small two axles trucks of different makes. Both types of vehicles provide load, as well as passengers transport services. Buses are rarely used. Most vehicles are second hand imports from the US with an average age of about 15 years.

The vehicle fleet characteristics used for the evaluation of vehicle operating costs are those commonly used by DGC in routine economic evaluations, and are based on consultant studies with some adjustments to reflect the characteristics of the local vehicles. The standard cost of vehicles, spare parts, tires and fuel were raised to reflect increased prices in this isolated region. Table 4.7 shows the unit costs used in the economic evaluation for the “without project” case (rough gravel surface), as well as in the “with project” case. This analysis considers the most representative roughness index (IRI) for each road section.

Table 4.7: Vehicle Unit Costs, US\$/km

Road Section	Case	IRI	Car	Pickups	Truck 2 Axles	Medium Truck	Buses
RD-6	Without project	18.9	0.36	0.46	N/A	1.18	1.30
	With upgrading project	2.1	0.18	0.19	N/A	0.67	0.91
RD-11	Without project	19.6	0.37	0.48	1.30	1.32	N/A
	With upgrading project	2.1	0.16	0.16	0.29	0.30	N/A
RD-8 to CA-1	Without project	19.7	0.38	0.50	1.62	1.56	1.59
	With upgrading project	2.1	0.17	0.18	0.56	0.59	0.45
RD-8 to Santiago	Without project	19.7	0.39	0.51	1.43	1.43	1.59
	With upgrading project	2.1	0.16	0.16	0.28	0.30	0.45
RD-s/n	Without project	19.5	N/A	0.49	1.06	1.13	1.25
	With rehabilitation project	9.5	N/A	0.30	0.78	0.83	1.01

N/A – Not Available

Evaluation Horizon. The evaluation horizon was estimated of 15 years for upgrading jobs and 10 years for rehabilitation with gravel surfacing.

Sensibility analysis and switching values. The economic evaluation includes a sensibility analysis for each road sector considering two scenarios: (i) 20% cost increase in construction and maintenance costs, and (ii) 20% decrease of benefits. The switching values for the construction and maintenance costs were expressed as a ratio between the costs which, after discounting 12%, render a net present value of zero, and the respective base cost. Similarly, the switching values for the benefits were expressed as the factor (less than 1.0) that turn the base case benefits to zero, representing the rate of decrease of benefits that turns the feasibility from positive to negative. Table 4.8 summarizes the economic indicators for four departmental gravel road sections to be upgraded to asphalt paving standards and of one to be rehabilitated with selected gravel surface, which conforms to the first year works package of the project.

Table 4.8. Summary of Economic Indicators of First Year Package

Departmental Road Sections	Indicator	Base Case	Costs + 20%	Benefits - 20 %	Switching Values	
					Costs	Benefits
RD-6: Junction CA-1 (km 315) - La Libertad	IRR NPV	16.1% 0.22	12.1% 0.01	11.3% -0.04	1.20	0.84
RD-11: Junction CA-1 (km 274) - Santa Bárbara	IRR NPV	26.2% 1.20	22.2% 1.00	21.1 0.74	1.83	0.56
RD-8: Junction CA-1 – San Pedro Necta	IRR NPV	31.9% 1.26	26.4% 1.05	25.2% 0.80	2.20	0.46
RD-8: San Pedro Necta - Santiago Chimaltenango	IRR NPV	34.8% 3.13	28.7% 2.65	27.4% 2.02	2.30	0.44
RD-s/n. Junction RD-12 (Nentón) - Bilil (border San Mateo Ixtatán community)	IRR NPV	22.0% 0.18	16.0% 0.08	14.7% 0.05	1.35	0.74
TOTAL (US\$million)	NPV	5.99	4.79	3.57		
TOTAL (US\$/km)	NPV/km	115,414	92,293	68,786		

IRR: Internal Rate of Return in %

NPV Net Present Value in US\$ millions, discounted at 12%

Total NPV, discounted at 12%, for the package amounts to US\$5.99 million, the average NPV/km amounts to US\$115,414. The IRR varies between 16.1% ad 34.8%. The sensibility analysis shows that 20% cost increase or 20% benefits still maintain the economic indicators at feasibility rates above 12%, except in road RD-6 where they border acceptable thresholds. The results of all other sections corroborate the strength of the foreseen technical solutions and investment levels. A 20% cost increase diminishes the NPV to US\$4.79 million, and a 20% benefits decrease, to US\$3.57 million. The NPV/km decreases respectively to US\$92,293 and US\$68,786. The switching values show acceptable margins between 1.20 and 2.30 for increased costs, and of 0.84 and 0.44 for decreased benefits (corresponding to 16% and 56% of benefits decrease, respectively).

Table 4.9: Physical Characteristics and Estimated Cost of the Four Works Packages

N.-	Origin	Destination	Length (km)	Type of Surface	Type of Works Proposed	Cost (US\$) ¹
1	Entronque CA-1	LA LIBERTAD	5.6	Not Paved	Paving	1,332,900
2	Entronque CA-1	SANTA BARBARA	8.0	Not Paved	Paving	1,861,700
3	Entronque CA-1	SAN PEDRO NECTA	5.8	Not Paved	Paving	1,390,600
4	SAN PEDRO NECTA	SANTIAGO CHIMALTENANGO	12.3	Not Paved	Paving	2,949,400
5	Entronque RD-12, NENTON	Vvl. Lím. Comunal Nentón/ San Mateo Ixtatán	20.2	Not Paved	Rehabilitation	622,400
4	COLOTENANGO, Entronque RN-7W	SAN GASPAR IXCHIL	5.2	Paved	Periodic Maintenance	54,600
5	SAN GASPAR IXCHIL	Lím. Deptal. Huehuetenango/San Marcos a Concepción Tutuapa	6.7	Not Paved	Rehabilitation	211,050
6	SAN GASPAR IXCHIL	Lím. Deptal. Huehuetenango/San Marcos a San Miguel Ixtahuacán	7.0	Not Paved	Rehabilitation	220,500
7	Entronque CA-1	COLOTENANGO	1.0	Paved	Periodic Maintenance	26,250
8	COLOTENANGO	SAN IDELFONSO IXTAHUACAN	9.2	Paved	Periodic Maintenance	241,500
9	Entronque CA-1, SAN SEBASTIAN HUEHUETENANGO	SAN JUAN ATITAN	17.3	Not Paved	Rehabilitation	544,950
10	SAN JUAN ATITAN	Sajchilaj, Entronque a SANTIAGO CHIMALTENANGO y TODOS SANTOS CUCHUMATAN	3.0	Not Paved	Rehabilitation	94,500
11	SANTIAGO CHIMALTENANGO	Sajchilaj, Entronque a SAN JUAN ATITAN	9.6	Not Paved	Rehabilitation	302,400
12	SANTA BARBARA	Lím. Deptal. Huehuetenango/San Marcos a San Miguel Ixtahuacán	10.2	Not Paved	Rehabilitation	321,300
13	SAN MIGUEL ACATAN (Bif. En RD-4)	Lím. Comunal San Miguel Acatán/ San Sebastián Coatán	4.5	Not Paved	Rehabilitation	118,125
14	Lím. Comunal San Miguel Acatán/ San Sebastián Coatán	SAN SEBASTIAN COATAN	4.6	Not Paved	Rehabilitation	120,750
15	SAN SEBASTIAN COATAN	Chemalito, Pet, Entronque a RN-9	9.7	Not Paved	Rehabilitation	254,625
16	SAN MIGUEL ACATAN	Lím. Comunal San Miguel Acatán/ San Rafael La Independencia, Villa Linda	7.3	Not Paved	Rehabilitation	191,625
17	Lím. Comunal San Miguel Acatán/ San Rafael La Independencia, Villa Linda	SAN RAFAEL LA INDEPENDENCIA	4.6	Not Paved	Rehabilitation	120,750
18	SAN RAFAEL LA INDEPENDENCIA	Chemalito, Entronque a RD-3	6.5	Not Paved	Rehabilitation	170,625
19	SAN MIGUEL ACATAN	Solomochoch- Lím. Comunal San Miguel Acatán/ San Juan Ixcoy	14.3	Not Paved	Rehabilitation	450,450
20	Lím. Comunal San Miguel Acatán/ San Juan Ixcoy	Pie de la Cuesta	14.3	Not Paved	Rehabilitation	450,450
21	Pie de la Cuesta	SAN JUAN IXCAY, RN-9	2.6	Not Paved	Rehabilitation	81,900
22	SANTA ANA HUISTA	El Coyegual	9.8	Not Paved	Rehabilitation	257,250
23	El Coyegual - Chuchinabaj	Entronque CA-1 (San Rafael)	7.7	Not Paved	Rehabilitación	242,550
		TOTAL	207.0			12,633,150

¹ Costs estimates include environmental mitigation measures

Selection Criteria and Multi-Criteria Analysis of Rural Roads.

Determination of the Preliminary Core Network.

Methodology. The selection of the rural roads in the municipal associations of HUISTA and MAMSOHUE to be included in the project started with the analysis of all departmental and rural roads proposed for rehabilitation by the municipal authorities of both associations. Those requests were screened according to the following 6 criteria:

- **Ownership.** The basic condition for consideration of a road was the location of such road within the area of influence of both associations;
- **Connectivity.** Roads to be selected were required to link with other roads sections already rehabilitated or planned to be improved, or to higher class roads, in order to improve connectivity and functionality of the regional road network as a whole and to expedite the mobility of people and resources. It was intended to incorporate into the preliminary core network those roads that would contribute to: expedite interconnection between production and consumption centers and facilitate access to hospitals and health centers, education and cultural centers, public agencies and services, municipal or departmental headquarters, and to main roads. This analysis was based on information gathered during field trips of the project preparation teams (one for each association) integrated by DGC and INFOM personnel and consultants, and was aimed at preventing isolation of any existing road;
- **Road works to be executed by other agencies.** Road segments that were targeted for execution by other agencies, as IDB, FIS, FONAPAZ and other institutions, were excluded to avoid duplication;
- **Financial capacity of the municipalities.** The financial capacity of each association to carry out sustainable maintenance – both routine and periodic- was considered to determine the total length of roads to be rehabilitated in the territory of each association;
- **Equity in assignment of resources.** In order to attain commeasured participation of all municipalities, it was agreed that the yearly road packages would selected from the priority list of roads to be rehabilitated ensuring that each municipality will adequately represented in all work packages; and
- **Project requirements.** All petitions requiring construction of new roads were excluded and replaced, if possible, by improvements to existing roads.

The initial selection of roads undertaken to define a proposed core network was subjected later to a validation process in consultation with municipal authorities to determine the final version of the core road network.

Validation of the Core Network

Methodology. The list of initially selected departmental and rural roads to be included in the project was validated applying social and environmental criteria,

Social Validation. This validation considered, in particular, the social studies undertaken in HUISTA and MAMSOHUE Association by the Central-American Foundation for Economic Development (*Fundación Centroamericana de Desarrollo Económico*, FUNCEDE), through surveys among local

groups at the municipal headquarter, village, community and rural level, and through regional social diagnosis interviews. The analysis included review of all existing or assembled data on: population, housing, commercialization and destination of local products, transportation means, health services, and need for all type of infrastructure sub projects. Particular attention was devoted to: suggestions on new roads and improvement of the existing ones, benefits expected from such sub projects and comments on the need and problems of access to the main roads.

Analysis of the data gathered in these surveys and interviews concluded that in HUISTA among 180 infrastructure sub projects discussed, priorities were awarded 32% to drinking water, 22% to roads and 18% to minor irrigation sub-projects. In MAMSOHUE, out of 298 sub-projects the results were as follows: 35% for roads, 24% for health centers and 21% for drinking water. In both associations 87% of the answers received considered improvement of roads to be highly beneficiary.

According to the population of the territory of both municipal associations, the advantages expected from the improvement of the selected roads would be the following:

- Decrease of rural isolation during the winter months;
- Increase of production, at present limited by transport difficulties;
- Decrease of transport costs and reduction of travel time;
- Fostering of private investment in the region;
- Lower costs of supplies for agricultural production and for general merchandise;
- Availability of bus service at all times;
- Improved communications with hospitals and health centers;
- Reduction of the number of absentee teachers and pupils;
- Facilitation of attendance of higher studies in bigger towns;
- Improvement of phone communications and other public services; and
- Tourism promotion.

The social validation led to the conclusion that the list of roads to be improved requested by the municipal authorities reflects adequately the aspirations of the communities in both associations (For more detail, See Annex 16, Social Assesment).

Environmental Validation. The preliminary listing of candidate secondary/departmental and rural roads to be included in Phase 1 was also validated with the results of the environmental assessments of those roads carried out in both associations by the Environmental Management Department (*Departamento de Gestión Ambiental*, DGA) of DGC and consultants.

The analysis of these assessments concluded that 91% of the candidate roads required only minor engineering and environmental interventions that could be carried out at reasonable costs. The remaining 9% would require more detailed study of the design techniques, environmental mitigation actions and related costs demanded for sustainable rehabilitation or improvement works. These activities should be carried out as part of the basic engineering of each particular road (For more information, See Annex 17, Environmental Assesment).

The above outlined social and environmental validation processes allowed the final selection of road sections to be included in the core network of the HUISTA and MAMSOHUE associations, distinguishing between secondary/departmental roads, under DGC administration. This process is summarized in Table 4.10 showing for each association the number of total road sections requested to be improved, the number of departmental and rural road sections selected for improvement, and the number of departmental and rural road sections excluded from the program, because they are included in programs of other agencies, correspond to new construction or are not located within the associations' territory.

Table 4.10: Validation Results for the Improvement of the Rural Road Network

Validation Status	HUISTA	MAMSOHUE
Total number of requests submitted	91	119
Included in the Core Road Network	74	82
Of which, secondary/departmental roads sections	8	9
Of which, rural roads sections	66	73
Excluded of the Core Road Network	17	37
Of which, included in other programs (IDB, FIS, Fonapaz and Consejo de Desarrollo)	7	3
Of which, new rural or urban road sections, or those located outside the associations' territory	10	34

Criteria for Definition and Prioritization of Works Packages.

Methodology. Once the core network was determined, it was necessary to define and prioritize annual works packages for secondary/departmental, as well as for rural roads. The methodology applied to the secondary/departmental roads is explained in the previous section of this Annex, the one applied to rural roads is explained below.

Criteria for prioritization of rural roads. As stated in the Introduction to this Annex, rural roads with very low traffic volumes (less than 40 vehicles/day) cannot be subjected to economic analysis using the traditional HDM model. Using conventional methods for estimating returns on investment on rural roads would almost always make them unlikely candidates for road works. To redress this deficiency, it was necessary to develop a multi-criteria index, to assess the value of rehabilitating/improving rural road segments and to 'rank' the order in which they are subjected to road works. This index was developed during implementation of the SMRRPP and preparation of the RMRP and is called Road Selection Index, ISV (*Indice de Selección Vial*).

The ISV uses information on variables such as poverty alleviation potential and the potential for improving the quality of life of inhabitants in ill-connected communities, along with the technical feasibility to determine the value and order in which rural roads are rehabilitated/improved.

To determine rural segments in need of rehabilitation/improvement, the first step in the SMRRPP and in the RMRP project preparation was to get a shortlist of road segments in need of rehabilitation/improvement, from mayors of participating communities. It was assumed that these reflected the local needs and priorities of communities. (This 'need' was further investigated during surveys undertaken by field agents, during project preparation.) The ISV was then used, in the SMRRPP and in RMRP preparation, to assess the "urgency" of road works. Road segments were thus ranked and

distributed amongst road works packages according to the assessment of ‘need’.

Definition of the ISV. The ISV is a weighted average of several social and technical variables relevant to the beneficiary population within the ZOI of the road segment. Table 4.11 shows the ten variables considered in the study undertaken in Huehuetenango during project preparation.

To produce unit values comparable among different road projects, ISV variable values are normalized to a unit value by dividing the value assigned to each road by the maximum value established for the corresponding variable. The unit value is thus expressed as a number in the range between 0 and 1. Since the ISV includes ten evenly weighted variables, their addition produces a number below 10, which in turn is multiplied by 10 to have an ISV variation between 0 and 100.

Table 4.11: Variables included in the Road Selection Index (ISV)

Variable	Unit	Parameter	Information Source
Population	Number. of inhabitants/km2	Number of inhabitants living in the ZOI, per km2	INE 1994 data reprocessed 1999 by MAGA based on population polygons and zones of influence (ZOI) of roads, later ‘ground-truthed’.
Poverty	(%)	Percentage of population in the ZOI living below the poverty line.	Living Standards Measurements Surveys (LSMS) – ENCOVI 2000 collected by INE-Guatemala and processed by SEGEPLAN, at the municipal level.
Extreme Poverty	(%)	Percentage of population in the ZOI living below the extreme poverty line.	ENCOVI 2000 figures.
Traffic	Vehicles/day	Average Annual Daily Traffic (AADT) + (Non Motorized Traffic/15)*.	Traffic surveys and counts undertaken by the corresponding municipalities.
Functional Classification	(4,3,2,1)	Type of road: tertiary (4), rural (3), local (2) and minor local (1).	According to road classification proposed in the Study of the Road Inventory by Berger International.
Health	(km/inhabitant)	Distance traveled by inhabitants of the ZOI to get to health centers.	The Ministry of Health (<i>Ministerio de Salud, Sistema de Gestión</i>).
Education	Number	Number of students + number of teachers.	Ministry of Education – MINEDUC.
Public Transport	(0,1)	Including buses and pick ups, Available (1), Not Available (0).	Consultant survey.
Agricultural Area Exploitable	(%)	Potential agriculturally productive area as percentage of ZOI.	Consultant estimates based on field visits.
Environmental Feasibility	(0,1)	Rehabilitation or upgrading are environmentally feasible (1), not feasible (0).	Evaluations of DGC environment specialists based on field visits.

* Assuming that a pick-up can carry 15 load carrying people.

It is important to clarify that candidate road segments proposed by mayors, were considered in the development of the core network. Also, as is explained below, the ISV is only one of the tools to procure an ordering of road segments in need of road works. Other factors, such as political feasibility, ‘connectivity’ and equity were used to complement the ISV to obtain a final ranking.

Further, extensive and multiple field visits undertaken during project preparation contributed to the assembling of detailed information about the needs and aspirations of each community involved, with particular attention to indigenous and gender considerations. By ordering all rural road segments in descending order of ISV, it is possible to establish an initial prioritization of the roads to be rehabilitated, as well as a tentative grouping of work packages for successive annual implementation.

The ISV is easily computed based on information collected in the field. Interviews and conversations with people in the field convey “need” for rehabilitation/improvement of road segments and also ensure feedback and people’s participation in road works decisions. The ISV also accounts for the “social” impact of road works; it captures benefits of improved access to schools and health centers in the poor and remote areas of the country, robustly. The project files contain detailed information on the procedures followed to establish representative ISV values for each road and their respective ranking.

Definition of annual work packages. As also described in the project files, the ISV ranking of rural roads was subsequently reviewed and ‘fine-tuned’ using additional criteria described below.

- **Connectivity of roads to be rehabilitated.** In order to expedite connections to the trunk road network as well as to departmental and municipal capitals, preference is given to roads providing easy connections to other rehabilitated roads that experience high traffic volumes;
- **Equity in assignment of resources.** In order to attain effective representation and sustainability of the RMRP in each municipal association, it was agreed that each municipality will have an adequate number of projects in each yearly package;
- **Local priorities of municipalities.** As mentioned above, the initial requests of the municipal mayors on rehabilitation of specific roads and their relative priorities were considered;
- **Road works to be executed by other agencies.** Road segments that were targeted by other agencies and other projects were excluded to avoid duplication; and
- **Packaging of Works.** Special attention was devoted to including neighboring roads into the same package to avoid unnecessary spreading out of road works and to reap benefits of scale economies. These work packages were submitted for approval to the mayors of the Huehuetenango associations MAMSOHUE and HUISTA in a participatory two-day workshop, held in Guatemala City in June, 2002. This enabled feedback, on updating of the work priorities initially established, as well as of works implemented in the meantime by the municipalities, with local or international financing. The validation process introduced additional adjustments to the preliminary work programs and allowed preparation of final programs and definition of the annual works packages.

Validation of the first year package. Later adjustments to the project scope and structure introduced minor modifications to the above program resulting in the definition of the final version of the first year package, and tentative agreements for the work packages of subsequent years. The mayors confirmed the package for the first year and acknowledged the packages for years 2 through 4 for future budgeting purposes. Each one of these future packages will be validated in participatory workshops in due time during project implementation.

The first year packages for HUISTA and MAMSOHUE are summarized in Tables 4.12a and 4.12b, including rehabilitation of 19 rural roads totaling 145.5 km and costing US\$ 2.8 million in HUISTA, and 20 rural roads totaling 126.5 km and costing US\$2.4 million in MAMSOHUE.

Table 4.12a: First Year Works Package for the HUISTA Association

	Section	Length (km)	Length per Municipality	Municipality	Cost (US\$000) ¹
1	Junction RD-13, Caserío Yichoch, Aldea Tzunhurtz	Caserío Cabic y Petatán	8.6	8.6	Concepción Huista 177.8
2	Jacaltenango	Lupiná - Buxup	15.5		Jacaltenango 262.5
3	Jacaltenango	Xayomlaj	2.6		Jacaltenango 49.6
4	Junction to Xayomlaj	Inchehuex (Yinchenguex)	5.8		Jacaltenango 122.4
5	Inchehuex (Yinchenguex)	Peb'ipam, Coronado, juntion RD-12	12.6	36.5	Jacaltenango 260.5
6	CA-1, Boquerón (Piedra Partida)	Nueva Esperanza	18.0		La Democracia 370.2
7	Oxbé	Crossing Chichinabaj	4.0	22.0	La Democracia 79.1
8	La Trinidad (on RD-12)	Yalambojoch (Initial section FTN)	15.3		Nentón 208.2
9	Crossing to Nentón RD-12	Quixal	3.5		Nentón 73.7
10	Finca Chanquejelbe, juntion to Bili	Subajasum, Canquintic	6.0	24.8	Nentón 130.7
11	San Antonio Huista	Rancho Viejo, (through brdge La Cabaña)	7.0	7.0	San Antonio Huista 141.0
12	San Miguel Acatán	Río Rosano	9.0		San Miguel Acatán 184.6
13	Río Rosario	Santa Cruz Coyá	4.0		San Miguel Acatán 80.8
14	Santa Cruz Coyá	El Mul	4.2		San Miguel Acatán 88.1
15	El Mul	El Mul Chiquito (Jacaltenango)	1.0	18.2	San Miguel Acatán 21.0
16	RD-12 (close to Cuatro Caminos)	Aqua Escondida	1.2		Santa Ana Huista 24.4
17	RD-13: Aldea Monajil	Caserío Buenos Aires/ Buxup (Jacaltenango)	3.9	5.1	Santa Ana Huista 75.6
18	Todos Santos - Aldea Max (Mash)	Caserío Chanximil	16.2		Todos Santos Cuchumatán 302.4
19	Caserío Chanximil	Caserío Tuibochl	7.1	23.3	Todos Santos Cuchumatán 135.3
TOTAL FIRST YEAR WORKS PACKAGE		145.5	145.5		2787.9

1 Costs estimates include environmental mitigation measures

Table 4.12b: First Year Works Package for the MAMSOHUE Association.

	Section	Length (km)	Length per Municipality	Municipality	Cost (US\$000) ¹
1	CA-1	Ical	2.9		Colotenango 61.1
2	CA-1	Tixel	1.8		Colotenango 37.4
3	Xemal	La Barranca-Los Naranjales-CA-1	2.5	7.2	Colotenango 51.2
4	Ixmulej	San Francisco El Retiro	9.8		Cuilco 182.6
5	Los Chepitos	El Camzal	11.0	20.8	Cuilco 210.9
6	La Libertad	Cenegal	10.0	10.0	La Libertad 211.8
7	Malacatancto	Aldea Tojocaz (CA-1)	7.3	7.3	Malacatancto 154.6
8	Caserío Tuitoj	RN-7W	3.9	3.9	Sn Gaspar Ixchil 45.3
9	San Idelfonso Ixtahuacán	Aldea La Cumbre	6.6		Sn Idelfonso Ix. 107.4
10	La Laguneta	RN-7W	5.0		Sn Idelfonso Ix. 76.7
11	Crossing Laguneta-RN7W	Caserío Chanchiquia	1.0	12.6	Sn Idelfonso Ix. 18.4
12	Aldea Tuscalacal	RD-8 ^a	3.5	3.5	Sn Juan Atitán 57.5
13	San Pedro Necta	Jolimex	12.7	12.7	Sn Pedro Necta 269.3
14	San Rafael Petzal	Oratono - Xemal	3.0	3.0	Sn Rafael Petzal 62.5
15	La Cumbre (RD 11)	Tuloj	13.4	13.4	Sta Barbara 284.6
16	CA-1	Mapá	6.0	6.0	Sn Sebastian Hu 124.3
17	Caserío Chepon	RD-8	2.7		Santiago Chimalt 55.2
18	Santiago Chimaltenango	Caserío Río Ocho	14.5	17.2	Santiago Chimalt 239.9
19	Cruce Tectitán / Tacaná	Sachumba	5.0		Tectitan 115.0
20	Cruce Tectitán / Tacaná	Teninqim	3.9	8.9	Tectitan 81.2
TOTAL FIRST YEAR WORKS PACKAGE		126.5	126.5		2,446.9

1. Costs estimates include environmental mitigation measures

Cost of works. Works quantities were estimated during technical inspections of each road section by DGC/INFOM personnel and consultants. Special attention was devoted to the use of road standards that would minimize earth works in cuts and embankments, as well as requirements for widening, by including in very narrow roads, as needed, switches for the crossing of vehicles. These designs were aimed at ensuring accessibility, traffic worthiness and sustainability at the lowest cost possible. Unit cost for each work item were estimated based on actual costs for similar works under the SMRRPP, particularly on the costs of the two last annual work packages that reflect present market conditions and include the cost for environmental mitigation actions. Cost estimates also factored in the environmental mitigation measures. Thus, estimated unit costs rendered an average cost of US\$19,300 per km, however, more precise estimates were undertaken, as needed, for specific road sections diverging from average conditions. Table 4.12 shows referential unit costs per km for different types of works.

Table 4.12: Reference Unit Costs per km for Works Type

Works Type	Unit Cost (US\$/ km)
Graveling	20,000
Periodic maintenance	15,000
Annual routine maintenance	1,000
Stone paving	30,000
Drainage upgrading	25,000

Physical and financial targets. The physical and financial targets for rural road rehabilitation in each municipality to be agreed at appraisal the project are summarized in Tables 4.13 a and 4.13b, separately for each association. The program considers 396 km of road rehabilitation for HUISTA totaling US\$7.6 million, and 437 km for MAMSOHUE totaling US\$8.4 million.

Conclusion. The above described methodology, developed under the SMRRPP and improved during preparation of the RMRP, represents a satisfactory procedure for evaluation and prioritization of rehabilitation works of low traffic rural roads. It uses an important “community participation” feature to combine successfully the technical, economic and sustainability requirements of rural road rehabilitation with rural development objectives such as promotion of land development, generation of employment, social cohesion and consensus and integration of indigenous and isolated communities into the mainstream of the country.

Table 4.13a Physical and Financial Targets – HUISTA Association

ROAD SECTION	Municipality	Length (km)	Length per Municipality (km)	Type of Works Proposed	Works Total Cost (US\$)	
1 Entronque RD-13, Caserío Yichoch, Aldea Tzunhurtz	Caserío Cobic y Petatán	Concepción Huista	8.6	Periodic Maintenance	177,816	
2 Yulá	Chalhurtz	Concepción Huista	4.8	Graveling	92,405	
3 Concepción Huista	Caserío Checam	Concepción Huista	6.2	Graveling	119,357	
4 Ajul	Yulá	Concepción Huista	7.0	Graveling	134,758	
5 Bacú	Yatolop, (Yatolob)	Concepción Huista	2.0	Graveling	38,502	
6 Concepción Huista, RD-13 Esquipulas	Com (Q'om)	Concepción Huista	3.9	Upgrading	75,080	
7 Aldea Secheu en RD-13	Caserío Canalaj	Concepción Huista	3.9	Periodic Maintenance	75,080	
8 Jacaltenango	Lupiná - Buxup	Jacaltenango	15.5	Graveling	262,534	
9 Jacaltenango	Xayomlaj	Jacaltenango	2.6	Graveling	49,594	
10 Entronque a Xayomlaj	Inchehuex (Yinchenguex)	Jacaltenango	5.8	Graveling	122,393	
11 Inchehuex (Yinchenguex)	Peb'ilpam, Coronado, entronque RD-12	Jacaltenango	12.6	Graveling	260,515	
12 Entronque camino a Buxup	Taj-Buxup	Jacaltenango	1.2	Graveling	23,102	
13 Río Azul	Hurtzabal (Witsobal)	Jacaltenango	5.2	Upgrading	100,106	
14 Hurtzabal (Witsobal)	El Mu Chiquito	Jacaltenango	6.0	Graveling	115,507	
15 Jujilná (Jajliná)	Tzisbaj, entronque Camino a Lupiná al cementeno	Jacaltenango	7.0	Graveling	134,758	
16 Lupiná	Aldea Chebal	Jacaltenango	2.5	Graveling	48,096	
17 Entronque camino a Tzisbaj	Aldea Wijax	Jacaltenango	0.8	Graveling	15,401	
18 San Marcos Huista	San Andrés Huista	Jacaltenango	7.1	Routine Maintenance	136,682	
19 La Laguna RD-12	Frontera México	Jacaltenango	6.0	Graveling	115,507	
20 Entronque en RD-13, Jacaltenango - Concepción Huista	Aldea Q'om (Com)	Jacaltenango	4.0	Upgrading	77,004	
21 CA-1, Boquerón (Piedra Partida)	Nueva Esperanza	La Democracia	18.0	Graveling	370,158	
22 Oxbé	Cruce Chichinabaj	La Democracia	4.0	Graveling	79,095	
23 Las Guacamayas	Guaiilá	La Democracia	1.4	Graveling	26,952	
24 Guaiilá	Frontera con México	La Democracia	0.9	Graveling	17,293	
25 La Democracia	Chamuxú	La Democracia	8.4	Graveling	161,710	
26 Acceso a	Majagual	La Democracia	0.9	Graveling	17,293	
27 Acceso a	El Sabino	La Democracia	0.4	Graveling	7,668	
28 Valparaíso (El Jobal)	El Mamonal	La Democracia	2.8	Graveling	53,919	
29 CA-1 La Montañita - El Carnizo	Ixcúnén - Buenos Aires	La Democracia	7.0	Periodic Maintenance	134,758	
30 Las Tarayes	La Laguna	La Democracia	5.3	Graveling	102,031	
31 Acceso a	El Matazano	La Democracia	0.4	Graveling	7,701	
32 Acceso a	El Chorro	La Democracia	0.9	Graveling	17,326	
33 La Trinidad (en RD-12)	Yalambojoch (Tramo inicial FTN)	Nentón	15.3	Graveling	208,225	
34 Cruce a Nentón RD-12	Quixal	Nentón	3.5	Graveling	73,663	
35 Finca Chanquejelbe, entronque a Biltí	Subajasum, Canquintic	Nentón	6.0	Routine Maintenance	130,704	
36 Nentón	Jom Tzalá (hacia Jom, Lín Comunal San Miguel Acatán)	Nentón	8.0	Graveling	154,009	
37 Entronque RD-12, (a 3 km Nentón)	Finca Chacaj	Nentón	5.0	37.8	Graveling	96,256

38	San Antonio Huista	Rancho Viejo, (por Puente La Cabaña)	San Antonio Huista	7.0		Periodic Maintenance	140,954
39	Rancho Viejo	Entronque a Ixmá	San Antonio Huista	6.9		Graveling	132,833
40	Entronque a Ixmá	El Pajal	San Antonio Huista	8.2		Graveling	157,859
41	El Pajal	El Coyegual	San Antonio Huista	4.9		Graveling	94,331
42	San Antonio Huista	Guajaqueño / Petatán	San Antonio Huista	4.0		Graveling	77,004
43	San Antonio Huista	Rancho Viejo (por Caserío La Estancia) - Cajul	San Antonio Huista	3.5		Graveling	67,379
44	El Progreso	RD-13: Tablón Viejo	San Antonio Huista	0.8		Routine Maintenance	15,401
45	RD-13 Tablón Viejo	San José El Tablón	San Antonio Huista	1.2		Routine Maintenance	23,102
46	San Antonio Huista	Los Pinos	San Antonio Huista	0.5		Stone Paving	9,626
47	San Antonio Huista	Canohas	San Antonio Huista	2.0		Stone Paving	38,502
48	San Antonio Huista (parque)	Cantón Recreo	San Antonio Huista	1.5	40.5	Stone Paving	28,845
49	San Miguel Acatán	Río Rosano	San Miguel Acatán	9.0		Upgrading	184,529
50	Río Rosario	Santa Cruz Coyá	San Miguel Acatán	4.0		Periodic Maintenance	80,831
51	Santa Cruz Coyá	El Mul	San Miguel Acatán	4.2		Upgrading	88,116
52	El Mul	El Mul Chiquito (Jacaltenango)	San Miguel Acatán	1.0		Upgrading	20,980
53	Quixic	Payconop	San Miguel Acatán	2.0		Graveling	38,502
54	Payconop	Poy rumbo a RN-9, Santa Eulalia	San Miguel Acatán	1.5		Graveling	28,877
55	Cheche	Bacú	San Miguel Acatán	17.0		Upgrading	327,269
56	San Miguel Acatán	Yaxtuntaj, Solomchen rumbo a San Sebastián Coatán	San Miguel Acatán	7.0	45.7	Periodic Maintenance	134,758
57	RD-12 (cerca de Cuatro Caminos)	Agua Escondida	Santa Ana Huista	1.2		Graveling	24,398
58	RD-13 Aldea Monajil	Caserío Buenos Aires/ Buxup (Jacaltenango)	Santa Ana Huista	3.9		Graveling	75,524
59	Cuatro Caminos RD-12	Agua Zarca	Santa Ana Huista	4.8		Graveling	92,405
60	Santa Ana Huista	Buena Vista, Pumul - El Tierrero Pinalito - Ojo de Agua La Montaña	Santa Ana Huista	12.4		Periodic Maintenance	238,681
61	Cuatro Caminos RD-12, Yuxén	Belén Coyolar	Santa Ana Huista	3.0		Periodic Maintenance	57,753
62	Agua Zarca	El Amate, Frontera México	Santa Ana Huista	6.0	31.3	Graveling	115,507
63	Todos Santos - Aldea Max (Mash)	Caserío Chanximil	Todos Santos Cuchumatán	16.2		Graveling	302,359
64	Caserío Chanximil	Caserío Tuibochl	Todos Santos Cuchumatán	7.1		Graveling	135,270
65	Entronque (1) Chanximil	Caserío Río Ocho (de Aldea Mash)	Todos Santos Cuchumatán	6.8		Graveling	130,875
66	Xetalhuitan, Llanos de San Miguel, Aldea Chemal	Aldea Chichim, Aldea Chalhuitz	Todos Santos Cuchumatán	27.0		Graveling	519,780
67	Entronque a Caserío Buena Vista	Caserío Los Ramírez	Todos Santos Cuchumatán	9.3		Graveling	179,035
68	Todos Santos (Ruinas), Aldea Chipocaj	Tzinimá, Tuicudaj, Rumbo a San Juan Atilán	Todos Santos Cuchumatán	11.0	77.4	Periodic Maintenance	211,762
		TOTAL	395.8	395.8			7,606,000.0

Table 4.13b Physical and Financial Targets – MAMSOHUE Association

ROAD SECTION		Municipality	Length (km)	Length Per Municipality (km)	Type of Works Proposed	Works Total Cost (US\$)	
1	CA-1	Ical	Colotenango	2.9	Graveling	61,114	
2	CA-1	Tixel	Colotenango	1.8	Graveling	37,438	
3	Lominoche	RN-7W	Colotenango	1.0	Graveling	19,296	
4	CA-1	Tutzquian	Colotenango	1.0	Upgrading	19,296	
5	San José Arenal	RN-7W	Colotenango	1.0	Upgrading	19,296	
6	Caniche	RN-7W	Colotenango	2.5	Upgrading	48,239	
7	Xemal	La Barranca-Los Naranjales-CA-1	Colotenango	2.5	12.7	Graveling	51,998
8	Ixmulej	San Francisco El Retiro	Cuilco	9.8	Graveling	182,576	
9	Los Chepitos	El Carnizal	Cuilco	11.0	Graveling	210,897	
10	Cruce Ixmulej/ San Francisco El Retiro	El Sabino y El Chical	Cuilco	3.4	Graveling	65,606	
11	Canibal	Buena Vista	Cuilco	3.5	Upgrading	67,535	
12	El Tablón	Posoncicapa Chiquito	Cuilco	13.0	Graveling	250,845	
13	La Pajonada	RN-7W	Cuilco	10.0	Graveling	192,958	
14	Los Chepitos / Soledad	Cruce a Oaxaqueña / La Frontera	Cuilco	9.0	Graveling	173,662	
15	Chejoj	RN-7W	Cuilco	2.0	Graveling	38,592	
16	Yerba Buena	RN-7W	Cuilco	3.0	Upgrading	57,887	
17	Los Chepitos / Soledad	Cruce a Batal	Cuilco	5.0	Graveling	96,479	
18	El Astillero	RN-7W	Cuilco	3.0	Upgrading	57,887	
19	El Herrador	RN-7W	Cuilco	3.5	Graveling	67,535	
20	Agua Dulce	Boquerón	Cuilco	5.5	Graveling	106,127	
21	Agua Dulce	Flor del Café	Cuilco	3.0	Graveling	57,887	
22	La Ranchería	RN-7W	Cuilco	4.0	Graveling	77,183	
23	El Tablón/ Ponosicapa Chiquito	Cruce el Carnizal - Triunfo - RN-7W	Cuilco	10.0	Graveling	192,958	
24	San Julian La Lucha	RN-7W	Cuilco	4.0	Graveling	77,183	
25	Agua Sembrada	Los Cimientos	Cuilco	2.5	105.2	Graveling	48,239
26	La Libertad	Cenegal	La Libertad	10.0	Graveling	211,772	
27	La Libertad	El Limar - CA-1	La Libertad	8.5	Graveling	164,014	
28	Cruce La Libertad / El Matazano	Montaña y Amapolar	La Libertad	6.5	25.0	Graveling	125,423
29	Malacatancito	Aldea Tojocaz (CA-1)	Malacatancito	7.3	Graveling	154,646	
30	Tres Cruces	Pueblo Viejo	Malacatancito	12.0	Graveling	231,550	
31	Cruce Malacatancito/ Pino Solo Piache	Zalpatzan	Malacatancito	2.0	Upgrading	38,592	
32	Tres Cruces	La Estancia	Malacatancito	11.0	Graveling	212,254	
33	Cruce Malacatancito/ Pino Solo Piache	Las Uvas	Malacatancito	1.4	Upgrading	27,014	
34	Cruce Tojochan / Cruce Río Hondo	Cal - Tres Cruces	Malacatancito	13.0	Upgrading	250,845	
35	Cruce Malacatancito/ Pino Solo Piache	Xemop Chocal	Malacatancito	1.1	47.8	Graveling	21,225
36	Caserío Tuij	RN-7W	San Gaspar Ixchil	3.9	Graveling	45,275	
37	Cruce San Gaspar Ixchil / Concepción Tutuapa	Manajá	San Gaspar Ixchil	2.0	5.9	Graveling	38,592
38	San Idelfonso Ixtahuacán	Aldea La Cumbre	San Idelfonso Ix.	6.6	Graveling	107,364	
39	La Laguneta	RN-7W	San Idelfonso Ix.	5.0	Graveling	76,655	
40	Cruce La Laguneta-RN7W	Caserío Chanchiquia	San Idelfonso Ix.	1.0	Graveling	18,383	
41	San Idelfonso Ixtahuacán	Chejoj	San Idelfonso Ix.	18.0	Graveling	347,324	
42	San Idelfonso Ixtahuacán	Casaca	San Idelfonso Ix.	3.0	Upgrading	57,887	
43	Cantón Bella Vista	RN-7W	San Idelfonso Ix.	1.0	Upgrading	19,296	
44	Polaja	Tunales (RN-7W)	San Idelfonso Ix.	4.0	38.6	Graveling	77,183

45	Aldea Tuiscacal	RD-8a	San Juan Atitan	3.5		Graveling	57,535
46	Caserío Sajchilaj	Cojorn	San Juan Atitan	4 0		Graveling	77,183
47	Caserío Sajchilaj	Tuzpitchon	San Juan Atitan	4 0	11 5	Graveling	77,183
48	San Pedro Necta	Jolmex	San Pedro Necta	12 7		Upgrading	269,256
49	San Pedro Necta	Río Ocho	San Pedro Necta	19 0		Upgrading	366,620
50	CA-1 - El Boquerón	La Esperanza	San Pedro Necta	10.0	41 7	Upgrading	192,958
51	San Rafael Petzal	Oratono - Xemal	San Rafael Petzal	3 0		Graveling	62,462
52	Buena Vista	Xechul - CA-1	San Rafael Petzal	2 0		Graveling	38,592
53	Tuisneina	Caserío La Cruz - CA-1	San Rafael Petzal	4 0		Graveling	77,183
54	El Oratono	Xemal Bajo	San Rafael Petzal	3 0	12 0	Graveling	57,887
55	CA-1	Mapa	San Sebastian Hu	6 0		Graveling	124,301
56	Pueblo Viejo (Cruce Chichina / CA-1)	Palajchuj / RD-1a	San Sebastian Hu	6 0		Graveling	115,775
57	Torlon	Tuzquisal - Entronque RD-10 a San Juan Atitan	San Sebastian Hu	18 0		Graveling	347,324
58	Pueblo Viejo (Cruce Chichina / CA-1)	Chexap	San Sebastian Hu	6.0		Upgrading	115,775
59	San Sebastián Huehuetenengo	Caserío Tuitzin	San Sebastian Hu.	4.0		Upgrading	77,183
60	Xinajxop en CA-1	Tojchec	San Sebastian Hu.	6.5	46 5	Upgrading	125,423
61	La Cumbre (RD 11)	Tuiloj	Santa Barbara	13 4		Graveling	284,605
62	Caserío Chiquilla	RD-11	Santa Barbara	9.0		Graveling	173,662
63	Cruce Xaul / RD-11	Sacmuj	Santa Barbara	5.0		Graveling	96,479
64	Tojchun	RD-17b	Santa Barbara	0.5		Upgrading	9,648
65	Sacbech	Tintonel (CA-1)	Santa Barbara	2 5		Graveling	48,239
66	Saúl	RD-11	Santa Barbara	7 0		Graveling	135,071
67	Cruce Caserío Chiquilla / RD-11	Muxna	Santa Barbara	3 0	40 4	Graveling	57,887
68	Caserío Chepon	RD-8	Santiago Chimalt.	2.7		Upgrading	55,168
69	Santiago Chimaltenango	Caserío Río Ocho	Santiago Chimalt	14 5		Graveling	239,941
70	Cruce Santiago Chimaltenango / Caserío Río Ocho	Loctoc	Santiago Chimalt.	1.7		Upgrading	32,803
71	Cruce Santiago Chimaltenango / Caserío Río Ocho	Tihuitz	Santiago Chimalt	2 0		Upgrading	38,592
72	Niyá	RD-8	Santiago Chimalt.	3 0		Upgrading	57,887
73	Cruce La Florida - Loma Grande	Bella Vista	Santiago Chimalt	1.5		Upgrading	28,944
74	Cruce Santiago Chimaltenango / Caserío Río Ocho	Loma Grande	Santiago Chimalt.	2.7	28.1	Upgrading	52,099
75	Cruce Tectitán / Tacaná	Sachumba	Tectitán	5 0		Graveling	115,043
76	Cruce Tectitán / Tacaná	Teningum	Tectitán	3 9		Graveling	81,186
77	Cruce Tectitán / Tacaná	Chiste / Tubia	Tectitán	7 3		Graveling	140,859
78	Cruce Tectitán/Culco	Llano Grande / (Tuztijom) Tosijon	Tectitán	5 0	21 2	Graveling	96,479
TOTAL				436.6	436.6		8,431,240.1

Annex 5: Financial Summary
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT

Years Ending
(In US\$ millions)

	IMPLEMENTATION PERIOD						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Total Financing Required							
Project Costs							
Investment Costs	6.3	20.5	18.2	18.2	0.0	0.0	0.0
Recurrent Costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Project Costs	6.3	20.5	18.2	18.2	0.0	0.0	0.0
Front-end fee	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Total Financing	6.8	20.5	18.2	18.2	0.0	0.0	0.0

	IMPLEMENTATION PERIOD						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Financing							
IBRD/IDA	5.0	15.0	13.4	13.4	0.0	0.0	0.0
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Central	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Provincial	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Co-financiers	0.0	0.0	0.0	0.0	0.0	0.0	0.0
User Fees/Beneficiaries	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Project Financing	5.0	15.0	13.4	13.4	0.0	0.0	0.0

	IMPLEMENTATION PERIOD						
	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	0.0	0.0	0.0
Total Project Costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	0.0	0.0	0.0

	IMPLEMENTATION PERIOD						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
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	0.0	0.0	0.0
Central	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Provincial	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Co-financiers	0.0	0.0	0.0	0.0	0.0	0.0	0.0
User Fees/Beneficiaries	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	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	0.0	0.0	0.0

Main assumptions:

Annex 6(A): Procurement Arrangements
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT

Procurement

Procurement methods (Table A)

Works and goods will be procured in accordance with the provisions of the “Guidelines for Procurement under IBRD Loans and IDA Credits” dated January 1995 and revised in January and August 1996, September 1997 and January 1999. Procurement of consultant services will follow the “Guidelines for the Selection and Employment of Consultants” published by the Bank in January 1997 and revised in September 1997. The procurement arrangements below were derived from the Procurement Plan.

Procurement Arrangements. The Procurement Capacity Assessment (PCA) was carried out in January 14, 2003 and the overall risk assessment was rated as average. Positive factors are the earlier good experience accumulated in MCTV during implementation of several Bank projects and the fair performance of INFOM with the rural pilot project. To avoid a potential issue, NCB procedures should exclude a bracketing system for awards and allow participation of foreign bidders. For the new operation, the Borrower should present NCB documents acceptable to the Bank and confirm the use of the Bank’s standard bidding documents for ICB works and for the selection of consulting services. In addition, the price comparison methods for small works will be based on at least five (5) quotations, instead of the present practice of three (3). Current issues related to delays in the procurement process are expected to lessen with top management support and an adequate procurement planning. Another supportive factor is that a proposed reform to the procurement Law now under a Congress Commission intends to introduce annual procurement plans as an obligatory requirement to public entities. The Bank should supervise this project closely, particularly, the rural component at least three times during the first two years. A yearly procurement audit should be needed to assess transparency of operations.

Institutional and administrative capacity, support and control mechanisms, procurement manuals, record keeping activities within COFINEX and UCBM were found to be satisfactory. Both entities are also adequately staffed with experienced personnel and are receiving technical assistance and training to meet their expanded responsibilities under the proposed project. The PCUs have delineated a procurement strategy that identifies a package of works, goods, and consulting services and are committed to developing a detailed timetable for each contract, following a defined forecast sequence. The bidding process within COFINEX involves the nomination of bidding/award commissions, technical review, legal review, approval by Procuraduria, a ministerial resolution for the award, a period of appeals, a ministerial decree, and contract signature. INFOM requires fewer steps and after award recommendation and no objection, the manager signs the contracts after Board of Director approval. On technical matters, INFOM is assisted by MCTV in accordance with an inter-institutional arrangement. A regional road fund office manages the transfer of funds to the municipal associations and contractors.

The proposed project will continue to use standard bidding documents and largely retain prevailing procurement method thresholds and prior review arrangements used under the previous operation, albeit with some modifications. Small-scale works carried out under the new project would require the use of the NCB method to package small works, instead of ICB. In addition, price comparison methods for small works will be based on at least five quotations. NCB procedures should exclude the use of a bracketing system for award as well as allow the participation of foreign bidders. The Borrower should present NCB documents acceptable to the Bank and confirm the use of the Bank’s standard bidding documents for ICB works and for the selection for consultant services.

A preliminary procurement action plan that has been prepared and reviewed by the Bank. The action plan has delineated the following:

Procurement Plan

A proposed bidding strategy uses ICB for major works and good contracts and QCBS or other applicable methods for selecting consulting services. It also includes NCB, price comparison and limited direct contracting for small works under the rural component. In accordance with this strategy, the units agreed to do the following:

- A proposed table of bid packages showing anticipated contracts (Works, Goods and Consultant Services) with their estimated costs and procurement methods will be presented to the Bank and discussed during project appraisal.
- A preliminary plan in the categories of Works, Goods and Consultants recording time tables of procurement events for each contract or groups of contracts with the respective procurement methods. This baseline plan with annual procurement plans should be updated periodically during project implementation. These tables should be presented by April 2003.
- Standard Documents for ICB works, ICB goods and standard invitation documents for consulting services as required by the Bank.
- Standard documents for NCB for works and for NCB for goods.
- Standard documents for request for price comparison for small works introducing the lessons learned with the ongoing project.
- Items c), d), and e) to be presented by May 2003

Strengthening the Coordinating Units

Organization and Functions

Update the 1998 Operational Manual to include:

- Employment description for each position focused to the proposed project;
- Procedures and formats for the procurement plan and its periodic updating;
- Procedures and formats to the Procurement Management Report with respect to physical progress and disbursements for each ongoing contract.
- Elapsed time for procurement events in the categories of consultants, works and goods adjusted to the Guatemalan environment to support the procurement plan.
- The standard Bank's documents, NCB documents and other methods included in the project plans.
- Items f) through j) to be presented by June 2003

Training

- Training to include the project's scope, the baseline procurement plan, the functions of the coordinating units, the functions of municipal associations and those of the supporting technical units. This training is to begin by April 2003

Staffing

- Assign functions to current staff for the preparation, execution and monitoring of the procurement plan from now thru June 2003 and thereafter.

Institutional Coordination

Update the agreement for technical and coordinating relation between MCIV and INFOM in order to:

- Strengthen the existing coordination between both COFINEX and INFOM coordinating units
- Strengthen coordination between top decision management at MCIV/DGC and INFOM. The coordination instruments should be defined and included in the Operation Manual.

A.1 Works

The project will be executed by the two executing agencies that are responsible for the implementation the Rural and Main Roads Project (Loan 4260-GU): the Municipal Development Institute (*Instituto de Fomento Municipal – INFOM*) and the Ministry of Communications, Infrastructure and Housing (*Ministerio de Comunicaciones, Infraestructura y Vivienda – MCIV*). INFOM will be responsible for the rural road components and MCIV for the main, secondary and departmental road components.

Table A shows the project costs and procurement arrangements. International Competitive Bidding (ICB) procedures will be used for work contracts of US\$ 1.5 million and more. Formal prequalification of contractors will be carried out for ICB contracts exceeding US\$ 10 million. For work contracts estimated to cost US\$ 250,000 but less than US\$ 1.5 million, National Competitive Bidding (NCB) procedures will be used. Work contracts costing less than US\$ 250,000 but more than US\$75,000 will be awarded on the basis of proposals obtained from at least five qualified domestic contractors. Small contracts for works costing less than US\$ 75,000, may be done through direct contracting with community organizations and micro-enterprises for road maintenance following special procedures outlined in paragraph 3.15 of the Guidelines and on the basis of reference unit prices and standardized quantities. This procurement arrangement would allow for: (i) the participation of poor local communities in the direct management of small works; (ii) the formation of maintenance micro-enterprises; and (iii) the development of local contractors.

For the contracting for routine maintenance, the process envisaged is as follows: (i) the road section to be maintained is selected by INFOM/DGC and the municipal associations; (ii) the various communities along the road are visited by technical and social professionals to assess the capacity and interest in carrying out the works; (iii) this process leads to the selection of the best community from which the ME will be formed; (iv) once the ME is legally formed, training on technical, administrative and legal matter is provided to the ME; and (v) once the training process is completed, the contract is signed based on predetermined cost. More detailed information regarding this type of contract as well as the procurement stages to be followed in each case, will be included in the Operation Manual.

For the contracting of stone paving with community organizations, it is envisaged that those contracts will not exceed US\$50,000, and that the community must be legally established to qualify.

A.2 Goods

The procurement of vehicles and office furniture and equipment with a cost of US\$ 150,000 or more will be carried out using ICB. Individual contracts costing between US\$25,000 and US\$150,000 will be procured under NCB rules. And for individual contracts costing less than US\$25,000 national and

international shopping will apply based on three quotations. Preference will be given to domestically manufactured goods (see provisions of paragraphs 2.54 and 2.55 and Appendix 2 of the Guidelines).

A.3 Consultant Services

Consultant services will be procured under contracts awarded using the following selection methods: (i) Quality and Cost-Based Selection (QCBS); (ii) Quality Based Selection (QBS); Selection under a Fixed Budget; (iv) Selection Based on Consultants' Qualifications; and, exceptionally (v) Single-Source Selection.

Table B summarizes the prior review thresholds. In the case of works and goods, all ICB and NCB contracts will be subject to prior review. For small works to be procured on the basis of five quotations from qualified contractors, only two contracts from each package of works will be subjected to prior review. In the case of small works, it is anticipated that 4 work packages (one per year) will be contracted and executed. For works to be awarded to local communities, only the first contract in each of the 4 work packages will be subjected to prior review.

In the case of goods procured under ICB and NCB, all contracts will be subject to prior review. For National and International shopping, the first contracts in each case will be subjected to prior review.

For consultants services, prior review will be needed for all contracts valued at more than US\$100,000 for firms and all contracts with individuals costing more than US\$50,000 equivalent. For consultant contracts valued at less than the amounts indicated above, prior review by the Bank will only cover the corresponding terms of reference and short lists of consultants.

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

Expenditure Category	Procurement Method				Total Cost
	ICB	NCB	Other	N.B.F.	
1. Works	18.58 (13.94)	15.44 (11.58)	15.37 (11.27)	2.10 (0.00)	51.49 (36.79)
2. Goods	0.15 (0.12)	0.73 (0.58)	0.00 (0.00)	0.00 (0.00)	0.88 (0.70)
3. Services	0.00 (0.00)	0.00 (0.00)	10.88 (8.74)	0.00 (0.00)	10.88 (8.74)
4. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
5. Front-end fee	0.17 (0.17)	0.15 (0.15)	0.15 (0.15)	0.00 (0.00)	0.47 (0.47)
Total	18.90 (14.23)	16.32 (12.31)	26.40 (20.16)	2.10 (0.00)	63.72 (46.70)

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

^{2/} Includes civil works and goods to be procured through national shopping, consulting services, services of contracted staff of the project management office, training, technical assistance services, and incremental operating costs related to (i) managing the project, and (ii) re-lending project funds to local government units.

Notes: (i)N.B.F. = Not Bank-Financed. (ii) Figures in parenthesis are the amounts to be financed by the Bank loan. (iii) Others include: direct contracting, local shopping, and the contracting of consultant services.

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

Consultant Services Expenditure Category	Selection Method							Total Cost
	QCBS	QBS	SFB	LCS	CQ	Other	N.B.F.	
A. Firms	7.30 (5.84)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	7.30 (5.84)
B. Individuals	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	3.58 (2.89)	0.00 (0.00)	0.00 (0.00)	3.58 (2.89)
Total	7.30 (5.84)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	3.58 (2.89)	0.00 (0.00)	0.00 (0.00)	10.88 (8.73)

^{IV} 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 individual consultants (per Section V of Consultants Guidelines), Commercial Practices, etc.

N.B.F. = Not Bank-financed

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

Prior review thresholds (Table B)

Table B: Thresholds for Procurement Methods and Prior Review¹

Expenditure Category	Contract Value Threshold (US\$ thousands)	Procurement Method	Contracts Subject to Prior Review (US\$ millions)
1. Works	>1,500 >250-1,500 >75-250 75 or less	ICB NCB At least 5 quotations Direct contracting with local communities	All documents All documents First 2 contracts of each work package The first contract of each work package
2. Goods	>150 25-150 <25	ICB NCB National and International Shopping	All documents All documents First contract in each case
3. Services	>100	As per September 1999 Guidelines	
3.1 Firms	100 or less	As above	All documents
3.2 Individuals	>50 50 or less	As above As above	TOR and Short Lists only All documents TOR and short lists only
4. Miscellaneous			
5. Miscellaneous			
6. Miscellaneous			

Total value of contracts subject to prior review: US\$15 million

Overall Procurement Risk Assessment: Average

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

¹Thresholds generally differ by country and project. Consult "Assessment of Agency's Capacity to Implement Procurement" and contact the Regional Procurement Adviser for guidance.

**Annex 6(B) Financial Management and Disbursement Arrangements
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT**

Financial Management

1. Summary of the Financial Management Assessment

Implementing Entities

The Borrower for the loan will be the Republic of Guatemala. The project will be executed by: (i) the General Roads Directorate (DGC), which is attached to the Ministry of Transport; and (ii) the Municipal Development Institute (INFOM).

Program implementation will be closely coordinated by the Project Coordination Units (PCUs) established at DGC (COFINEX—*Coordinadora de Financiamiento Externo*) and INFOM (UCBM—*Unidad Coordinadora Banco Mundial*).

COFINEX was established in the DGC by Ministerial decree and is part of its permanent administrative structure, under the Planning Division. It directly assists the Planning Division in matters related to the preparation of multiyear investment programs and in coordinating projects financed by the Bank and other multilateral and bilateral agencies. Under the RMRP, the same PCU arrangement will be used: COFINEX will be responsible for the project components addressing road rehabilitation and improvement under DGC's responsibility, and for consultant services during the implementation of the RMRP.

INFOM, through the UCBM, will be responsible for the rural roads components under municipal jurisdiction which include related technical assistance and consultant services. INFOM has experience in coordinating national and local development efforts, including the implementation of the SMRRPP.

In a way similar to the SMRRPP, the municipal associations will contract out planning, programming and management of municipal roads within their boundaries to consultants, who will become the association's permanent technical service unit (UTAV). The UTAVs will also prepare and manage contracts on behalf of the members of the associations and will report to the associations. Payments, however, will be made by INFOM.

Staffing

Each executing entity has a specialized unit that will support the financial/administrative functions of the Project.

Among others, COFINEX has a WB Loan Coordinator, a works analyst, two project analysts, an institutional strengthening analyst, and two financial analysts. On the other hand, the UCBM has a WB Loan Coordinator, a municipal strengthening specialist, a technical specialist, a financial specialist, a financial assistant, and others.

As a result of the assessment, and in light of the new project, the following actions were suggested: (i) contracting of a FM Specialist (local consultant, CPA, with relevant public sector and investment project experience) to help both executing entities and the respective financial departments in setting up the required project-specific FM arrangements before effectiveness, and its implementation during the first year of project execution; (ii) contracting of a CPA to support the FM functions in COFINEX; (iii) contracting of two accounting assistants to support the FM functions in INFOM; and (iv) updating the position descriptions (or TORs) in the operational manual.

The contracting of consultants for these positions will follow the pertinent Bank Guidelines.

Funds Flow

Loan funds will be disbursed to two Special Accounts: one for each of the two executing entities, in line with the implementation arrangements agreed. The Special Accounts will be opened in the Banco de Guatemala (Banguat), provided that Banguat maintains such accounts in US Dollars. Otherwise, the Special Accounts should be opened in a commercial bank or not used.

Procedures for loan disbursements are summarized in Annex 6 to the PAD.

Payments in US Dollars. The payments in US Dollars to providers of goods and services should be made directly out of the Special Accounts.

Payments in local currency. On a regular basis, preferably once per week, COFINEX will send an order for transfer of funds from the DGC SA to the project's account in Quetzales (DGC Q), in accordance with the amount of documents pending payment. The same procedure will apply to the transfers from the INFOM SA to its project account in local currency (INFOM Q).

Under this arrangement, the accounts in Quetzales would be similar to a "bridge" or "zero balance" account, thus preventing exchange rate losses. In any case, such losses cannot be covered with loan funds - this will be carefully monitored by the Project's Financial Coordinators, supervised by the Bank through the review of withdrawal applications and FMRs, and certified by the external auditors in their annual report.

Counterpart funds. In DGC's case, the counterpart portion of expenditures is paid via transfer from the Government's central account to the providers' bank accounts. The requests are made by the DGC using the country's integrated financial management system (SIAF).

In INFOM, counterpart expenses are regularly transferred from the Government's central account to INFOM's project counterpart account, from which payments are made to providers. For works, the counterpart portion of expenses will be paid out of the accounts opened to that effect in the rural road funds (FVRs).

Accounting Policies and Procedures

Segregation of duties. Each executing entity will channel financial transactions through the organizational structure and procedures established in its respective norms. Those procedures support an adequate segregation of procurement, budgeting, payment and recording activities.

Budgeting. The loan agreement, cost tables and procurement plans will be the main input for the project budgets. Following local requirements, each executing entity will prepare at least:

- the annual work plan;
- the annual budget proposal specifying the sources of funds and the expenditures classified by the country's budgetary codes;
- after approval by Congress, the budget execution program broken down monthly;
- the monthly report on budgetary execution; and
- the quarterly report on evaluation of budgetary execution.

One of the problems affecting the “regularization” of budget expenditures is the requirement to register WB deposits before the expenses being reimbursed can be recorded, which creates an important time gap between actual expenditures and their recognition in the budgetary (not accounting) system. Both entities should agree with the MFP on a mechanism to reduce the cited time lag.

Payments and operation of bank accounts.

DGC. In accordance with the internal procedures, payments are subject to a series of internal reviews: (i) the works supervising company; (ii) DGC's Works Department (technical clearance); (iii) DGC's Internal Audit; (iv) DGC's Finance Department (financial clearance); and COFINEX. The checks are issued by DGC's Cashier Department.

Bank account reconciliations are prepared on a monthly basis. However, these: (i) are prepared by the Cashier, not the Accounting Department, and (ii) reconcile bank balances against the cash book, not the accounting balance. It was proposed that both issues be solved.

INFOM. The internal review steps are summarized as follows: (i) the works supervising company; (ii) the UTAV (technical clearance); (iii) the FVR (financial clearance); (iv) UCBM; (v) INFOM's Treasury Department; and (v) INFOM's Internal Audit. Since the checks must be signed by both the municipal association and INFOM, these are initially issued by the FVRs, but finally released by INFOM, which also funds the (bridge) account.

Bank account reconciliations are prepared monthly by INFOM's Accounting Department.

Accounting. Both executing entities follow the cash basis of accounting. Although using their respective institutional accounting systems, these allow for separate maintenance of project accounts, which include the usual assets, liabilities and fund balances. The expenditures are classified per each entity's classification, but both COFINEX and UCBM prepare subsidiary project-specific information, like investments classified by disbursement category.

Regular and timely reconciliation between the two data bases in each entity was recommended.

Information systems.

DGC. After significant problems, including loss of data, the DGC is testing a recently introduced accounting software. Although the system evaluation is still underway, its upgrading is foreseen, particularly to link accounting and other functions, such as cashier's. System security is another relevant need.

Through the ongoing project, assistance for improving the accounting software is envisioned. The WB will supervise the actions taken in this area, so as to ensure that the system is operating satisfactorily before project effectiveness.

INFOM. No major issues have been identified in the operation of INFOM's accounting software.

Policies and procedures. Under the ongoing project, an operational manual was prepared. Although comprehensive in technical matters, the FM procedures are scantily dealt with. It was therefore agreed that, when updating the operational manual, the executing entities would pay special attention to chapters on FM organizational arrangements, position descriptions (or TORs), flow of funds and related procedures, budgeting, internal controls, accounting manual, financial reporting, records management, relationship with Associations, and audit contracting and follow-up.

Safeguard over assets. Each executing entity has procedures for asset control, including subsidiary registers. These, however, are not reconciled monthly against accounting balances and, in DGC's case, cannot break down the assets acquired under the project. Besides overcoming these deficiencies, it was proposed that annual physical inspections be undertaken by both executing entities, preferably with the participation of the internal and external auditors.

Project Financial Reporting

Financial statements and reports will be prepared in formats satisfying the Government and IBRD's monitoring and fiduciary purposes.

On a monthly basis, each executing entity will prepare at least the project's balance sheet and statement of budgetary execution. This information must be made available within 30 days after the end of each month.

For Bank purposes, the quarterly financial statements will include: (i) Statement of Sources and Uses of Funds (with expenditures classified by budgetary line and/or disbursement category); and (ii) Uses of Funds by Project Activities (including budget comparison). These project financial statements, along with the physical progress and procurement sections of the Financial Monitoring Reports (FMRs), will be submitted to the Bank not later than 45 days after the end of each semester. FMRs will be used for monitoring, not disbursement, purposes.

For Bank purposes, the annual financial statements will include: (i) Statement of Sources and Uses of Funds; (ii) Uses of Funds by Project Activities; (iii) the schedule of Statements of Expenditure (SOEs) presented during the year in support of Withdrawal Applications; and (iv) the Special Account Statement.

Internal Audit

In both executing entities, the capacity to undertake meaningful audits of project funds is limited due to the low number of certified auditors, lack of computers, audit software and relevant training. Under the project, an internal audit consultant (local consultant, CPA, with relevant public sector and investment project experience) would be hired to help strengthen the departments, including the development of an overall improvement plan and audit techniques related to the projects.

External Audit

Audit compliance. As of the date of the FM assessment, there were no projects with overdue audit reports in the country portfolio. However, the two audit reports at December 31, 2001 for the first Rural and Main Roads Project, were submitted late to the World Bank.

DGC. A combination of factors, such as problems with the previous accounting system and untimely contracting of auditors, contributed to the delay. The audit opinion included a qualification because the original expense documentation was not kept in COFINEX.

In answer to the issues related to the 2001 audit, COFINEX has prepared a document outlining: (i) actions to improve timeliness, including a single contracting process for 2002/03; and (ii) actions to address the internal control issues, including coordinating with the DGC's Finance Department and the Ministry of Transport's Financial Unit the access to original documentation selected by the auditors.

INIFOM. The delay was mainly related to untimely contracting of auditors. The audit opinion included qualifications because of lack of subsidiary registers in UCBM for the counterpart expenses, and a difference between UCBM's financial data and the information from INFOM's accounting records.

The UCBM has subsequently prepared a document outlining: (i) actions to improve timeliness, including the finalization of the 2002 contracting process and prompt initiation of the 2003 audit; and (ii) actions to address the internal control issues, such as enhancing communication with the external auditors about the information available in INFOM's Accounting Department and improving the reconciliation process with this department.

2. Audit Arrangements

Audit arrangements. Annual project financial statements will be audited in accordance with International Standards on Auditing, by an independent firm and in accordance with terms of reference (TORs) both acceptable to the Bank. The audit opinions will cover at least the project financial statements, Special Accounts and Statements of Expenditures (SOEs).

The memoranda on internal controls ("management letters") will be issued, at least, on a bi-annual basis.

The executing entities should appoint the auditors within three months after loan effectiveness, with an annual contract to be renewed during the first quarter of each subsequent year. Audit expenditures can be financed by the loan.

The executing entities will prepare, if needed, an action plan to address any issues and recommendations contained in the audit reports. The action plans and follow-up activities will be communicated to the Bank.

The table below summarizes audit requirements:

<i>Audit Report</i>	<i>Due Date</i>
Project financial statements	6 months after the end of the reporting period (coincides with CY)
SOE	same as above
Special Accounts	same as above

Strengths and Weaknesses

Through the ongoing project, the executing entities have gathered relevant experience managing WB funds and developing the related internal controls. Still, staffing complements in the FM and internal audit functions, improvements in the reconciliation processes and in the accounting systems, among other actions, are required to properly take on the new project FM functions. The Action Plan below aims at addressing these issues.

Financial Management Action Plan

Action	Responsible Entity	Completion Date
1. Contract FM Consultant for both entities.	DGC/INFOM	One month after negotiations.
2. Contract CPA to support COFINEX's Financial Unit.	DGC	Before effectiveness
3. Contract accounting assistants to support UCBM's Financial Unit.	INFOM	Before effectiveness
4. Decide Special Account arrangements: (i) in USD at Banguat; (ii) in USD at commercial bank; (iii) no SA - use of agent; or (iv) no SA - reimbursements and direct payments.	DGC/INFOM/MFP	Before negotiations
5. Agree with MFP on mechanism to record expenditures (in the country's budgetary system) as they are incurred.	DGC/INFOM/MFP	Before effectiveness
6. Ensure approval of counterpart/loan budget.	DGC/INFOM/MFP	Before effectiveness
7. Develop sound reconciliations, including: (i) bank accounts; (ii) fixed assets; (iii) works; (iv) accounts payable/receivable; (v) accounting data vs. PIUs financial records.	DGC/INFOM	Before effectiveness
8. Finalize diagnostic of DGC's accounting system and prepare follow-up plan. Implement adequate system security features.	DGC	Before effectiveness
9. Finalize FM section of the Operational Manual.	DGC	Before effectiveness
10. Prepare format of the FMRs.	DGC/INFOM	Before negotiations
11. Produce first FMR.	DGC/INFOM	3 months after effectiveness
12. Contract Internal Audit Consultant.	DGC/INFOM	3 months after effectiveness
13. Provide audit report for WB-funded project (L.n. 4260) as of December 31, 2002.	DGC/INFOM	Before effectiveness
14. Prepare action plan to address any audit qualification or internal audit observations.	DGC/INFOM	Before effectiveness
15. Prepare audit TORs and short list of external auditors.	DGC/INFOM	Before effectiveness
16. Contract external auditors.	DGC/INFOM	3 months after effectiveness

Financial Covenants

Section 3. Require sufficient annual budgetary allocations for external and local funds needed for the project.

Section 4.01 "Standard" wording,. The audit reports will be furnished to the Bank not later than six months after the end of each year.

Section 4.02 "Standard" wording. The FMRs will be sent to the Bank not later than 45 days after the end of each quarter.

Effectiveness condition. FM arrangements satisfactory to the Bank in place and operational.

Supervision Plan

A FM Specialist should perform a supervision mission prior to effectiveness. After effectiveness, the FM Specialist must review the annual audit reports, should review the financial section of the quarterly FMRs, and should perform at least one supervision mission per year.

3. Disbursement Arrangements

Transaction-based ("traditional") disbursement procedures will be used for the loan.

Special Account. To facilitate project implementation, each executing entity would establish, maintain and operate a Special Account. The Special Accounts will be opened in the Banco de Guatemala (Banguat), provided that Banguat maintains such accounts in US Dollars. Otherwise, the Special Accounts should be opened in a commercial bank or not used.

The Special Accounts are only for eligible expenditures under the loan (under no circumstances may funds in the Special Account be used to cover the share of expenditures corresponding to the counterpart). Transfers from the Special Account to other bank accounts will only be permitted to meet eligible expenditures for a limited period of less than 30 days.

Total advances to each Special Account at any given time would not exceed the "authorized allocations" indicated in the Loan Agreement.

For replenishment of the advances, the executing entities will prepare monthly (in any case, no more than quarterly) requests for reimbursement of expenditures made.

Use of statements of expenditures (SOEs). Loan withdrawal applications can be supported by SOEs for expenditures relating to contracts that are not subject to the Bank's prior review (see Table B of Annex 6 to the PAD). Reimbursement of other expenditures would require submittal to the Bank of full supporting documentation.

Documents in support of SOEs must be maintained by each executing entity at least until one year after the Bank has received the audit report for the fiscal year in which the last loan withdrawal was made. Such documents must be available to review by the external auditors and Bank staff.

Other procedures. Upon request from the Borrower and subject to the Bank's approval, payments may be made: (i) directly to a third party (supplier or consultant) for goods, works, and services; (ii) to a procurement agent; or (iii) to a commercial bank for expenditures against a World Bank Special Commitment covering a commercial bank's letter of credit.

Allocation of loan proceeds (Table C)

Table C: Allocation of Loan Proceeds

Expenditure Category	Amount in US\$million	Financing Percentage
Civil Works for:		
1-(a) Main and Departmental Roads Rehabilitation and Improvement	26.89	75%
1-(b) Rural Roads Rehabilitation, Improvement	22.50	75%
1-(c) Main/Departmental Roads Maintenance	1.30	0
1-(d) Rural Roads Maintenance	0.80	0
Goods for:		
2-(a) INFOM	0.31	80% (**)
2-(b) DGC's Central Office	0.57	80% (**)
Consultant Services for:		
3-(a) Support for Decentralized Rural Roads Development and INFOM Consultants (*)	3.65	80%
3-(b) Supervision of Works (Rural Roads) INFOM	1.00	80%
3-(c) Engineering Studies/Final Designs/Project Preparation for Main Departmental Roads, Supervision and DGC Consultants (*)	2.93	80%
3-(d) Works Supervision (DGC)	3.30	80%
Total Project Costs	63.25	
Front-end fee	0.47	
Total	63.72	

(*) Including funding for: (i) audits, (ii) training, and (iii) payment of key staff in each PCU (COFINEX and UCBM)

(**) 100% if foreign goods. 80% financing applies for local goods.

Annex 7: Project Processing Schedule
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT

Project Schedule	Planned	Actual
Time taken to prepare the project (months)	18	
First Bank mission (identification)		
Appraisal mission departure		01/13/2003
Negotiations	09/10/2002	03/17/2003
Planned Date of Effectiveness		

Prepared by:

Ministry of Communications, Infrastructure and Housing (*Ministerio de Comunicaciones, Infraestrutura y Vivienda*, MCIV) and the Municipal Development Institute (*Instituto de Fomento Municipal*, INFOM), in collaboration with the World Bank.

Preparation assistance:

Bank staff who worked on the project included:

Name	Speciality
Guillermo Ruan	Task Team Leader - World Bank
Cecilia Corvalan	Co-Task Team Leader - Transport Economist
Sergio Miquel	Consultant - Transport Engineer
Roberto Armijo	Consultant - Transport Economist
Josef Stig Trommer	Financial - Operations Analyst
Hernando Garzon	Consultant - Municipal Finances
Enrique Pinilla	Consultant - Labor-Intensive Pilot
Jyotsna Puri	Consultant - Economist
Livio Pino/Manuel Vargas	Financial Management
Elena Correa	Social Specialist
Margarita de Castro	Consultant - Social Specialist
Marco Zambrano	Consultant - Environmental Specialist
Victor Osorio	Consultant - Micro-enterprises Specialist
Adan Cajina	Consultant - Procurement
Emma Cubillas	Consultant - Procurement Analyst
Alexandra Orellana	Program Assistant
Miriam Allen	Program Assistant

Annex 8: Documents in the Project File*
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT

A. Project Implementation Plan

1. Operational Manual
2. Proyecto de Caminos Rurales: Analisis de la Capacidad Financiera Municipal H. Garzon and J. Trommer, Antigua, Guatemala, The World Bank, 2002.
3. Preparacion del Programa de Caminos Rurales y Carreteras Principales I: Validacion del Primer Paquete de Obras Propuesto, Guatemala City, 18-19 June 2002.
4. Preparacion del Programa de Caminos Rurales y Carreteras Principales II: Validacion del Primer Paquete de Obras Propuesto, Guatemala City, 18-19 June 2002.

B. Bank Staff Assessments

1. Guatemala Poverty Assessment, The World Bank 2002.
2. Transport and Poverty Linkages using ENCOVI data, Guatemala 2002. J. Puri, The World Bank, 2002.
3. Estudio de Medicion de Impactos Preliminares: El Caso del Proyecto Piloto de Caminos Rurales de San Marcos, Republic of Guatemala, BIOENERG, Guatemala, 2002.
4. Are Roads Enough: A limited Impact analysis of road works in Guatemala, 2002. J. Puri, The World Bank, 2002.
5. Project Financial Management Assessment Report. Manuel M. Vargas, the World Bank, 2003
6. Procurement Capacity Assessment. Adan Cajina, the World Bank, 2003
7. Social Assessment. FUNCEDE, 2002
8. Environmental Assessment. Marco Zambrano, 2002

C. Other

1. Country Assistance Strategy Progress Report for the Republic of Guatemala, May 31, 2002a, The World Bank.
2. Violent Conflict and the Transformation of Social Capital: Lessons from Cambodia, Rwanda, Guatemala and Somalia, Nat.J. Colletta and Michelle L. Cullen, May, 2002b, The World Bank.
3. Dawson, H and I. Barwell Roads are Not Enough: New Perspectives on Rural Transport Planning in Developing Countries, Intermediate Technology Publications, 1993.
4. Van De Walle, D and D. Cratty Impact Evaluation of a Rural Road Rehabilitation Project, TheWorld Bank, 2002.
5. Carneiro, P., Hansen, K.T., and J. Heckman Removing the Veil of Ignorance in assessing the Distributional Impact of Social Policies, Institute of Labor Market Evaluation, Working Paper, 2002:2

*Including electronic files

Annex 9: Statement of Loans and Credits
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT
04-Nov-2002

Project ID	FY	Purpose	Original Amount in US\$ Millions				Difference between expected and actual disbursements*		
			IBRD	IDA	Cancel	Undisb.	Ong	Frm Rev'd	
P076853	2002	GT Financial Sector TA Loan	5 00	0 00		0 00	5 00	0 00	0 00
P074530	2002	GT Financial Sector Adjustment Loan	150 00	0 00		0 00	150 00	0 00	0 00
P066175	2002	GT INTEGRATED FINANCIAL MNGT III -TA	29 75	0 00		0 00	29 75	0 00	0 00
P055084	2001	COMPETITIVENESS	20 30	0 00		0 00	20 10	3 46	0 00
P048652	2001	GT UNIVERSALIZATION OF BASIC EDUCATI	62 16	0 00		0 00	62 16	14 98	0 00
P040198	1999	GT FIS II	50 00	0 00		0 00	0 86	-5 09	0 00
P054462	1999	LAND FUND (APL)	23 00	0 00		0 00	14 64	11 14	0 00
P049616	1999	LAND ADMINISTRATION (APL)	31 00	0 00		0 00	19 27	14 77	0 00
P049388	1999	GT RECONSTRUCTION & LOCAL DEV	30 00	0 00		0 00	20 84	17 51	0 00
P047039	1999	GT JUDICIAL REFORM	33 00	0 00		0 00	20 63	12 63	0 00
P035737	1998	RURAL & MAIN ROADS	68 70	0 00		0 00	25 94	15 11	0 00
P048654	1998	GT TAX ADMIN TAL	28 20	0 00		0 00	18 49	18 49	0 00
	Total		529 11	0 00		0 00	387 68	103 00	0 00

GUATEMALA
STATEMENT OF IFC's
Held and Disbursed Portfolio
Jun 30 - 2002
In Millions US Dollars

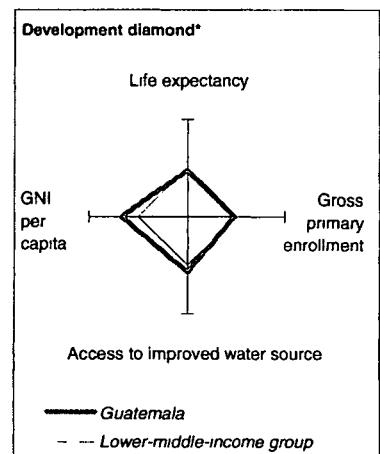
FY Approval	Company	Committed				Disbursed			
		IFC		IFC		Loan	Equity	Quasi	Partic
1994	Fabrigas	1.50	0.00	1.00	0.00	1.50	0.00	1.00	0.00
2000	Frutera	7.00	0.00	0.00	0.00	7.00	0.00	0.00	0.00
1998	La Fragua	17.89	0.00	0.00	0.00	17.89	0.00	0.00	0.00
0/97	Orzunil	10.71	1.17	1.17	12.37	10.71	1.17	1.17	12.37
1996	Pantaleon	8.75	0.00	0.00	0.00	8.75	0.00	0.00	0.00
1993	Vigua	2.06	0.00	0.00	0.00	2.06	0.00	0.00	0.00
Total Portfolio:		47.91	1.17	2.17	12.37	47.91	1.17	2.17	12.37

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic
2002	Occidente	0.00	10.00	0.00	0.00
2002	El Canada	15.00	0.00	0.00	22.00
2002	Interforest	6.00	0.00	0.00	2.00
Total Pending Commitment:		21.00	10.00	0.00	24.00

Annex 10: Country at a Glance

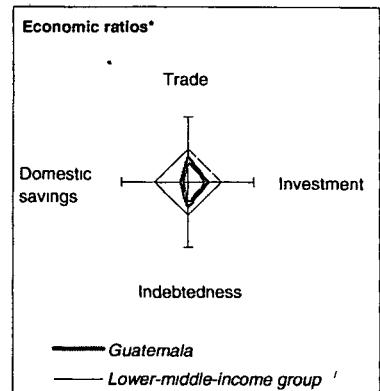
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT

POVERTY and SOCIAL	Guatemala	Latin	Lower-
		America & Carib.	middle-income
2001			
Population, mid-year (millions)	11.7	524	2,164
GNI per capita (<i>Atlas method</i> , US\$)	1,670	3,560	1,240
GNI (<i>Atlas method</i> , US\$ billions)	19.6	1,862	2,677
Average annual growth, 1995-01			
Population (%)	2.6	1.5	1.0
Labor force (%)	3.4	2.2	1.2
Most recent estimate (latest year available, 1995-01)			
Poverty (% of population below national poverty line)	56	.	.
Urban population (% of total population)	40	76	46
Life expectancy at birth (years)	65	70	69
Infant mortality (per 1,000 live births)	39	29	33
Child malnutrition (% of children under 5)	44	9	11
Access to an improved water source (% of population)	92	85	80
Illiteracy (% of population age 15+)	31	11	15
Gross primary enrollment (% of school-age population)	102	130	107
Male	108	131	107
Female	96	128	107



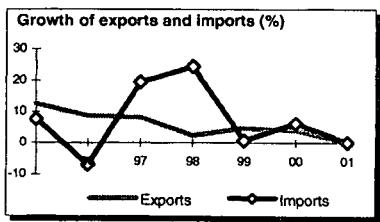
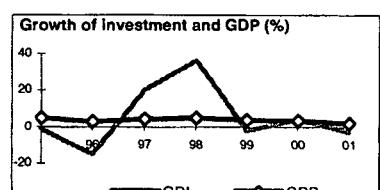
KEY ECONOMIC RATIOS and LONG-TERM TRENDS

	1981	1991	2000	2001
GDP (US\$ billions)	8.6	9.4	19.1	20.5
Gross domestic investment/GDP	17.0	14.3	17.0	15.4
Exports of goods and services/GDP	17.1	18.0	20.3	18.6
Gross domestic savings/GDP	10.5	10.7	8.1	6.0
Gross national savings/GDP	10.6	11.9	11.5	10.4
Current account balance/GDP	-6.7	-2.7	-5.5	-6.0
Interest payments/GDP	0.7	1.2	0.8	0.9
Total debt/GDP	14.9	32.9	16.8	17.4
Total debt service,exports	8.7	15.3	16.9	18.2
Present value of debt/GDP	..		15.8	..
Present value of debt/exports	64.9	..
	1981-91	1991-01	2000	2001
<i>(average annual growth)</i>				
GDP	1.4	4.1	3.6	2.1
GDP per capita	-1.1	1.3	0.9	-0.6
Exports of goods and services	0.1	6.3	3.9	0.0



STRUCTURE of the ECONOMY

	1981	1991	2000	2001
(% of GDP)				
Agriculture	25.0	25.7	22.8	22.6
Industry	21.7	19.6	19.8	19.5
Manufacturing	16.0	14.9	13.2	13.1
Services	53.3	54.7	57.4	57.9
Private consumption	81.6	83.9	84.9	86.2
General government consumption	7.9	5.4	7.0	7.7
Imports of goods and services	23.6	21.6	29.2	28.0
	1981-91	1991-01	2000	2001
<i>(average annual growth)</i>				
Agriculture	1.7	2.7	2.6	1.2
Industry	0.7	4.1	1.5	0.4
Manufacturing	0.7	2.7	1.9	1.4
Services	1.6	4.6	4.6	3.1
Private consumption	1.7	4.1	3.5	2.5
General government consumption	2.6	5.5	7.6	8.1
Gross domestic investment	0.1	5.1	4.2	-2.6
Imports of goods and services	0.8	8.4	6.1	0.2



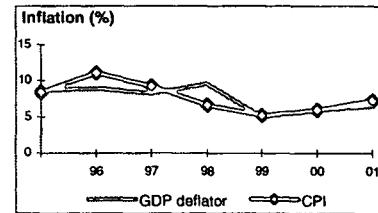
Note 2001 data are preliminary estimates

* 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

Guatemala

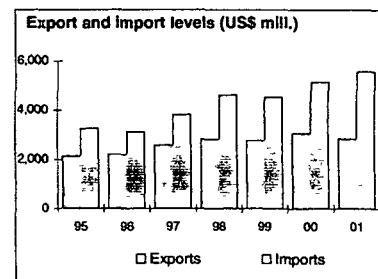
PRICES and GOVERNMENT FINANCE

	1981	1991	2000	2001
Domestic prices (% change)				
Consumer prices	11.4	33.1	6.0	7.3
Implicit GDP deflator	8.5	33.0	5.9	6.5



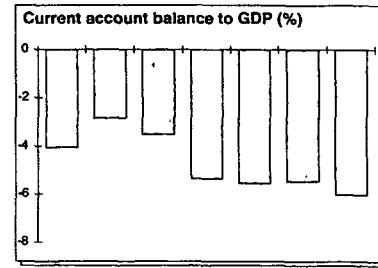
TRADE

	1981	1991	2000	2001
(US\$ millions)				
Total exports (fob)	..	1,298	3,085	2,865
Coffee	..	287	573	307
Sugar	..	141	180	213
Manufactures	..	692	1,907	1,911
Total imports (cif)	..	1,851	5,171	5,607
Food	..	264	1,085	1,359
Fuel and energy	..	311	540	596
Capital goods	..	430	1,417	1,353
Export price index (1995=100)	11	70	141	140
Import price index (1995=100)	13	76	135	141
Terms of trade (1995=100)	85	93	104	100



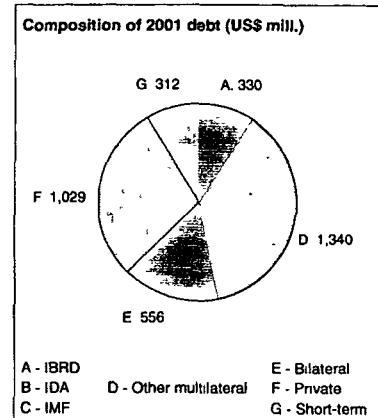
BALANCE of PAYMENTS

	1981	1991	2000	2001
(US\$ millions)				
Exports of goods and services	1,446	1,727	3,896	3,778
Imports of goods and services	2,024	2,030	5,601	5,923
Resource balance	-578	-302	-1,705	-2,145
Net income	-86	-174	-209	-90
Net current transfers	90	220	865	997
Current account balance	-574	-256	-1,049	-1,238
Financing items (net)	273	812	1,777	1,738
Changes in net reserves	301	-556	-728	-500



EXTERNAL DEBT and RESOURCE FLOWS

	1981	1991	2000	2001
(US\$ millions)				
Total debt outstanding and disbursed	1,278	3,092	3,218	3,567
IBRD	171	279	296	330
IDA	0	0	0	0
Total debt service	136	290	786	855
IBRD	16	31	34	34
IDA	0	0	0	0
Composition of net resource flows				
Official grants	12	72	85	93
Official creditors	169	46	94	84
Private creditors	110	-7	33	106
Foreign direct investment	127	91	230	456
Portfolio equity	0	0	0	0
World Bank program				
Commitments	0	0	54	62
Disbursements	35	4	51	46
Principal repayments	7	21	13	12
Net flows	28	-17	38	35
Interest payments	9	9	21	22
Net transfers	18	-26	17	12



**Additional Annex 11: San Marcos Rural Roads Pilot Project
Description and Impact Assessment
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT**

Background

Guatemala's road network is estimated to be approximately 30,000 km, although the MCIV currently classifies only 14,000 kms of roads, most of which are national or departmental roads and are in a "maintainable" condition. Rural roads account for more than 60% of this network. Historically however these roads have been neglected, because of a variety of reasons: Firstly because rural roads were not part of the 'classified' road network of the DGC. Funds for road works, whether construction or rehabilitation or maintenance thus could not be allocated to roads that simply 'did not exist'. Secondly, 35 years of civil strife have led to a marginalization of the poor and frequently indigenous populations that live in remote areas. Civil war has also fostered a deep distrust for the government along with a widespread perception of exclusion. This has implied that populations inhabiting these areas are frequently not vocal enough to ask for changes in infrastructure. Thirdly, not incidentally these areas are also extremely poor. This has implied that inhabitants are usually not educated enough or aware of their rights. Finally, civil strife has also led to an erosion of social fabric which has translated into a critical lack of social cohesion whether within communities or amongst them. This has meant a lack of community action, otherwise so vital to undertake any community works.

All these factors have led to the presence of a rural road network desperately in need of rehabilitation and maintenance. Recognizing this, Loan 4260-GU was signed in 1998, and has the following core objectives¹:

- Rehabilitating the municipal 'core' road network of the Association of Municipalities, ADIMAM, which is 481 km. long;
- Rehabilitating roads under the Road Directorate that connect association's 'core' network to the main road network of Guatemala. In the first two years of implementation, the Project rehabilitated approximately 200 km of the 'core' network;
- Rehabilitating road sections critical to improving access to remote communities; and
- Undertaking improvement of 'critical spots' or spots which are rendered impassable during specific times of the year-usually the rainy season.

Institutional Framework

The mainstay of the Pilot project was the creation of an association formed by 12 municipalities in the San Marcos region. *Association de Desarrollo Integral de Altiplano Marquense* or ADIMAM was thus formed in 1997. The goal of the association is to pursue development in the area by seeking solutions to issues of common interest, particularly municipal roads. The twelve municipalities which form the association, form an assembly of representatives of each municipality (usually a mayor or a councilor).

The goal behind the formation of the ADIMAM is to enable communities to decide their own development path. In this case, selecting, financing and sustaining road rehabilitation in the ZONAPAZ (Zone of Peace – as the project area came to be called) was entrusted to the ADIMAM. ADIMAM has two main roles. The first is financial: Each member municipality of the ADIMAM annually grants an amount of Q70,000 to the organization's budget. It also contributes 15% of the total cost of any road rehabilitation work. It is expected that this component of the budget will steadily increase so that by the

end, ADIMAM is able to completely finance all road works. The second task is organizational: In order to fulfill its technical and administrative tasks, ADIMAM has initiated the formation of two counseling bodies. These are UTAV and FVR or *Unidad Tecnica de Asistencia Vial* and *Fondo Vial Regional* respectively.

UTAV till recently was constituted by a Guatemalan consulting firm. However in April 2002, UTAV was headed by a 3 person team of local professionals (2 engineers and 1 economist) trained by the consulting firm. Responsibilities of UTAV are as follows:

- Providing technical assistance in negotiating and contracting road projects within ADMIMAM;
- Providing advice for the selection and prioritization of roads in the project area;
- Assist technically in the road rehabilitation and maintenance techniques and communicating progress to the center;
- Updating the “Operational Manual” for the implementation of the pilot and for contracting consultants and others for road rehabilitation and maintenance; and
- Aiding in the preparation of a national rural transport strategy.

It is foreseen that the replication of this set up in other areas, as proposed in the RMRP will create a market for private sector firms in the provision of road management services.

There are also other advisory agencies. At the center, INFOM is responsible for implementation of the institutional structure at the municipal level. It is also a national level agency in charge of municipal development and training and serves as an advisor to ADIMAM. INFOM assists ADIMAM by performing four important functions:

- Channeling funds: Bank funds are transferred to INFOM;
- Technical assistance: INFOM with the help of DGC, provides technical assistance and training to the association in accounting and in supervising and monitoring UTAV;
- Training: INFOM has long experience in training local governments and communities and works closely with ADIMAM to enhance their capacity to generate, plan and manage local resources; and
- Overall component management:

The other agency which has a supervisory and managing role to play in the project is the DGC. The DGC is the central sector agency for roads, and serves as an advisor to ADIMAM.

Execution of the SMRRPP has been divided into four package of works. Each package aims to rehabilitated approxiamtely 85 km. annually, with widths not exceeding 4.5 meters. These works also include repair or provision of drainage works and installation of informative and preventive transit signals. Currently, the third package is being executed. Road works are entrusted to small and medium-sized local enterprises and it is emphasized that works to be labor intensive to the extent possible.

Criteria for Selection of Rural Roads

Rural roads cannot be selected using the same criteria used for high traffic volume roads such as highways. For the latter, the net present value or the internal rate of return is used (as incorporated in the RED model or the HDM model). However rural roads by definition connect poor areas, and have low traffic volumes. On the other hand, their selection cannot be random either. At the same time, the selection of road segments should be exempt from subjective and political interests. The objective of undertaking road rehabilitation implicitly assumes that road works will be targeted at the most deserving road segments and at those that are most beneficial in terms of alleviating poverty and realizing economic gains. It is also true that road works should be technically feasible. Hence any index of selection should be multi-sectoral- they should contain an assortment of technical, social and economic parameters. On the ground, such an index cannot however ignore political reality and equity considerations. Thus it is apparent that if 12 municipalities are members of ADIMAM, all of these municipalities must have some road segments which are rehabilitated.

Taking all these factors into consideration, the ISV or the *Indice de Selección Vial* was developed (See Annex 4). The index is used for the selection of roads which experience AADT of less than 40 vehicles per day.

Methodology

The WDR 2000 (World Development Report) also states that the impacts from investments in public goods, have a long gestation period. Their effects on income distribution and welfare come about only after a long period of time and are indirect as well, so that it is not easy to see their impact.

Achievements

The Department of San Marcos is located in the northern region of Guatemala, and is constituted by 29 municipalities. In 2000, its estimated population was 825,000 (approximately 7.5% of the national total). The project covers an approximate area of 3,791 square kilometers and its elevation ranges from 2000 meters to 3000 meters above sea level. Population of the participating communities constitute a little less than half of the departmental population.

Table 11.1: Population and Number of Communities of the Participating Municipalities:

No	MUNICIPALITY	No. of Communities	Population in 1999.
1	Sibinal	39	14,647
2	Tejuela	56	31,089
3	Tacaná	128	68,891
4	San Lorenzo	15	11,082
5	Comitancillo	65	47,457
6	San Miguel Ixtahuacan	92	32,480
7	San Cristobal Ixchiguán	38	19,982
8	Tajumulco	112	41,067
9	Sipacapa	38	15,415
10	Concepción Tutuapa	85	58,602
11	San José Ojetenam	48	18,359
12	San Marcos	41	35,403
Totals		757	394,474

Source. Uses base population figures and rates of growth from the 1994 census (SEGEPLAN, Guatemala).

The SMRRPP has achieved the following targets to this date:

- Rehabilitation of 188.2 km.
- Routine maintenance of 77.3 km.
- Creation and strengthening of ADIMAM.
- Establishment and consolidation of UTAV and FVR.
- Strengthening of the technical capabilities of INFOM.
- Creation of systems that allow the updating of information on rural roads, between MCTV and INFOM.

Impacts

The project benefits a population of approximately 400,000 inhabitants and covers a total of approximately 760 communities. According to a preliminary impact analysis conducted by Bionerg (Bionerg was the national consulting firm in charge of UTAV activities during the first 2 years of project implementation), road works have implied a series of advantages for the target communities, most of which are attributable to the Pilot Project.

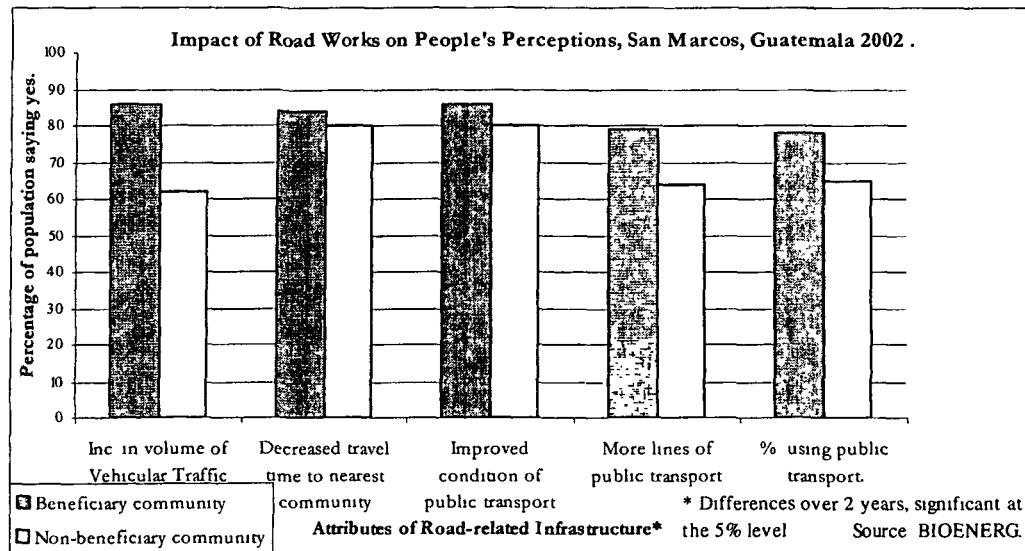
The main achievement of the San Marcos Pilot Project has been to ensure that local knowledge and needs infuse the decision making process. In bringing together municipalities that would otherwise plan and work in disparate ways and which were compelled to think short-term and on a small scale, the association has been able to provide the people in the participating municipalities a voice at the local and central governmental level. The association has ensured that the peoples of the municipalities cooperate not just on road building but also in procuring other projects and services from the Central Government. The pilot has also succeeded in ensuring that needs and demands be backed by financial capability and planning.

Community development. One of the main objectives of the Pilot Project is the creation of an institutional arrangement for managing and financing rural roads. This is consistent with the Government's general policy of decentralization. With the capacity to determine the extent and location of the road segments which will benefit from road works and in generating employment through the use of labor intensive means, the project represents a unique effort in power devolution in the country.

The project has also provided critical support for building technical capacity in the department. The technical arm of the association has been instrumental in developing the capacity of INFOM for coordinating rural transport development efforts. The technical unit (UTAV) provides support needed by the association by identifying roads constituting the core network and assessing costs.

Physical Infrastructure. An initial impact analysis was undertaken roughly 14 months after the start of the project which compared "beneficiary communities" (communities that benefited from some road-related works and are part of the association's municipalities) with "non-beneficiary communities" (communities that did not benefit from any road-related works financed under the project). This analysis demonstrated that rural road works have resulted in improved access to public transport infrastructure. Beneficiary communities registered a 24 percent increase in the number of vehicles passing through the community and a 13 percent increase in the number of people using public transport—specifically autobuses and pickups—over non-beneficiary communities. Thirteen percent of respondents believe that the total number of bus lines has increased and 30 percent noted an increase in the weekly household

expenditures on transportation. All these impacts indicate that rural road works in the department have increased the supply of transportation facilities which had otherwise been constrained by road quality.



Socio-economic Impacts. Health: The World Health Organization defines a household as having “access” to a health facility if members of the household have to travel less than an hour to reach the health facility. The ENCOVI 2000 reveals that for the department, 25 percent of respondents did not have access to a health facility. On average though, people take about 50 minutes to reach a health facility. In the impact study, beneficiary communities indicate a greater presence of and easier access to health services. In non-beneficiary communities, most residents ‘did not have access’ to health services since the time taken to reach a health facility in the non-beneficiary communities was almost an hour.

Education: Not many households in San Marcos pay for their children to reach a pre-primary school or kindergarten. However, for children attending a primary school or higher, 4 percent of the households in the department pay an average of 60 Quetzals² a month for school transportation and travel times are less than 20 minutes. Target communities also seem to have a greater incidence of schools than non-target communities, but it is difficult to attribute a causal relationship here.

Gender: Rural road works have had significant impacts in the mobility of women and road-rehabilitation induced interaction has also resulted in attitude changes towards them. 17 percent more people in beneficiary communities responded that there had been an increase in the number of women who use means of transport like pick-ups and trucks, to reach their destinations. Women in the non-beneficiary communities, usually walk. In beneficiary communities there is also greater openness to women using health centers, going to markets and to working in road-related maintenance works. Beneficiary communities showed 72 percent more households had women in the house receiving some education.

Quality of Life Most of the households in the department use wood as the principal fuel for cooking. Initial surveys reveal that inhabitants spend almost 2 hours on average to go and collect wood, with 30 percent of households spending more than 4 hours. Since most families collect wood once every two days, this represents a major time constraint. The impact analysis indicates that there has been a small yet significant decline in the time taken to acquire wood.

Rural road works undertaken mainly as part of the pilot have also resulted in a small but significant decrease in the time taken to reach nearby communities, facilitating greater interaction and more cohesiveness amongst them. There has also been an almost 20 percent decline in the time spent to reach work, even though the average time taken to reach the work place in San Marcos is lower than the national average, little more than 40 minutes one-way.

Expanding the Scope of Road Improvement

The poor condition of roads in rural areas of Guatemala makes it difficult to deliver public services to the rural population and constitutes a major disincentive to increased rural productivity and incomes. By setting up a decentralized institution the project has enabled municipalities to reap the benefits of scale.

Further, due to the success of the project in ensuring decentralization and in empowering communities in San Marcos, the Bank and the GoG are preparing a proposal for a rural roads project which will replicate the San Marcos project in the Department of Huehuetenango.

The success of the San Marcos pilot suggests that replicating it in other departments will improve the availability and affordability of rural transport services in the newly targeted departments also. The Department of Huehuetenango is similar geographically, and is as poor and deprived of rural transport infrastructure and services as San Marcos. By replicating the San Marcos project in Huehuetenango, the Bank will also be pursuing the objectives of the World Development Report in providing opportunities, increasing empowerment and reducing vulnerability.

Table 11.2: Statistics on Transportation and Access to Basic Amenities for Guatemala, 2000

	Urban Guatemala*	Rural Guatemala*	San Marcos**
% HHs without Motorable roads		15	16
% HHs without Public Transport		61	63
% HHs experiencing Road Closures		27	14
Time taken to get Water (mins.)		13	15
Distance traveled to get Water (kms.)		0.3	0.4
Time taken to get wood (mins.)		68	79
Distance traveled to get Wood (kms.)		1.5	1.4
Time taken to reach a Health facility (mins.)		55	49
Time taken to reach Work Place (mins.)		43	29
Distance traveled to reach a Market (kms.)		11	8
Time taken to reach a Market (mins.)		61	72

* Without San Marcos ** Predominantly rural. Source: World Bank calculations using ENCOVI 2000.

¹ This was however not the first initiative. In 1984, the USAID and the World Bank co-funded a project "Rural Road Building" via Loan L520-T026. The aim of the project was to build and maintain existing ones in the departments of Huehuetenango, Quiche, Totonicapan, Quetzaltenango, San Marcos, Coban, Chimaltenango and Chiquimula. However the objective soon became to rehabilitate roads with high volumes of traffic. The project however soon ran into several difficulties and did not lead to, as had been previously planned, the development of a rural road conservation and maintenance strategy. In 1996, MCIV left the program and moved the procured equipment to DGC, who then undertook some road works.

² 7.88 Quetzales = US\$1 approximately (June 24, 2002)

**Additional Annex 12: Pilot Project on Maintenance Micro-enterprises
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT**

I. Background

As part of its objective to improve maintenance management and funding, the proposed Rural Roads Project will include a pilot project introducing Micro-enterprises (MEs) for undertaking routine maintenance of rural roads. The pilot project will carry out routine maintenance of 350 km of rural roads rehabilitated under the previous Rural and Main Roads Project, (Loan 4260-GU). This rural roads rehabilitation program was successfully managed by ADIMAM and closely monitored by INFOM. The executing agency for this pilot component will be INFOM through its Project Coordination Unit (UCP). Consistent with the objective of strengthening local capacity and decentralizing the administration of rural road maintenance, INFOM will be the executing agency for the proposed pilot project and ADIMAM will be responsible for executing the pilot project.

The idea of performing routine road maintenance by contracting with cooperatives or associations of members of the neighboring communities, organized as MEs, started in 1984 in Colombia, under the Eighth Highway Sector Loan (2121-CO). The pilot program involved 28 MEs and was highly successful. Each association was formed, on average, by 12 associates and was entrusted with the routine maintenance of approximately 50 km main road segments. Financed under subsequent Bank loans and local resources, the program increased in 1992, to a total of 398 MEs performing 84 percent of the routine maintenance of the National Road Network, which comprised about 23,000 km in 1992. The decentralization of approximately 50 percent of the National Road Network to the departments in 1994, brought about a partial discontinuation of the system. Currently, 11,500 km, comprising 85 percent of routine maintenance of the National Network in Colombia, is carried out by MEs.

This model has been successfully replicated for undertaking routine maintenance of primary and paved secondary roads in Honduras and Nicaragua as well for unpaved rural roads in Peru. Regarding the maintenance of unpaved roads using microenterprises, the proposed project has attempted to incorporate the lesson learned from the Peru program to replicate this program in Guatemala. As part of project preparation, representatives of the Bank, INFOM, and ADIMAM, and project consultants visited Peru. As a result, a number of similar guidelines used in developing the legal and regulatory framework governing MEs, the promotion of MEs, forming ME, selecting ME associates, and eligibility criteria for selecting ME associates have been incorporated in the pilot project.

This extensive experience has proven that these programs for performing routine maintenance of roads by MEs have been highly satisfactory and extremely cost effective. In addition, MEs provide many advantages compared to traditional approaches, which include the following: (i) MEs succeed in creating permanent and reliable employment in rural areas, especially in extreme poverty areas; (ii) MEs foster community awareness regarding the need for sustainable development; (iii) MEs and its associates have developed entrepreneurial and organizational skills, which have empowered the MEs to undertake other productive projects and local development initiatives; (iv) the ME model has provided large spillover effects of benefits into neighboring communities; and (v) most importantly, MEs have gained the acceptance and support of communities and government officials, encouraging the development of similar initiatives in other sectors.

III. Objectives

The specific objectives of the pilot project are to: (i) establish a system of associative MEs to undertake satisfactory and cost-effective routine maintenance of rural roads rehabilitated in the San Marcos Region under the Bank Rural and Main Roads Project (4260-GU); and (ii) promote this approach for expansion to other regions of Guatemala.

In addition to these specific objectives, the pilot project addresses the following socio-economic objectives: (i) alleviate rural poverty by generating new employment opportunities in disadvantaged communities; (ii) develop technical and managerial skills among its members; (iii) endow ME associates with an entrepreneurial mentality to foster their own economic progress and participate in local and regional development efforts; (iv) promote greater community participation in solving transport problems; and (v) advance the concept that roads exist for the benefit of the entire population and should be maintained in a sustainable manner by the community with the support of the local and central government.

III. Pilot Project Scope

The pilot project will undertake routine maintenance of all roads rehabilitated in the San Marcos region under Loan 4260-GU, other rural roads in the area detected to be suitable for maintenance, and some main roads under the responsibility of the DGC that provide road linkages to some ADIMAM municipal seats. Although the total length of roads that will receive routine maintenance is still under review, an estimated 350 km would require the participation of nearly 20 MEs, who will be responsible for an average of 17.5 km each. On average, each ME will consist of 10 associates. MEs will be contracted and paid by ADIMAM through its Regional Road Fund or FVR (*Fondo Vial Regional*). Special agreements will be reached between DGC, COVIAL, and ADIMAM for administering and funding routine maintenance activities of roads under the jurisdiction of the DGC.

IV. Action Plan for the Implementation of the Project Scope

The actions required to ensure the satisfactory preparation and implementation of the proposed pilot project are described below.

1. Engagement of a Project Coordinator. INFOM has designated an experienced officer of UCBM to coordinate all efforts for the preparation of the ME pilot project. However, to satisfy efficiently the higher demands of this job during project implementation, the designated officer should, in due time, be relieved of his other duties, or be replaced by another suitable person.

2. Assembly of a Work Group. The members of ADIMAM's Technical Road Unit (UTAV, *Unidad Técnica de Asistencia Vial*) will later be assigned to supervise maintenance activities carried out by MEs and will participate in a Working Group comprised of INFOM, DGC, and the Technical Institute for Training and Productivity (INTECAP, *Instituto Técnico de Capacitación y Productividad*). The total number of supervisors in UTAV will be determined once the scope of the program is fully defined.

3. Definition of ME Legal Status. The legal status of the MEs is of critical importance because it should comply with the concept of "associate" work. "Associate" work implies that all members will be collectively and simultaneously owners and workers of the enterprise with equal rights and obligations, without discrimination. In other countries, MEs have been given the legal status of cooperatives or free associations. Exhaustive investigations carried out by the preparation mission and by INFOM have shown that none of the above alternatives can be used in Guatemala because of

the legal requirement of a starting capital and the relatively slow bureaucratic process required for their creation (estimated at more than six months). After studying eight different alternatives, INFOM's Director for Municipal Strengthening and his legal council recommended that the associative MEs should adopt the legal status of a "Not for Profit Civil Association" (*Asociación Civil sin fines de lucro*) established by Government Decree 512/98 dated July 29, 1998. Such associations satisfy all requirements described above and need only municipal authorization for their establishment. Draft by-laws for these associations are being discussed between INFOM and ADIMAM, and should be sent to the Bank for review before June 30, 2003.

4. Preparation and Signing of an Agreement INFOM-INTECAP. It is envisioned that technical assistance for preparing and implementing the pilot project will be supplied by INTECAP in accordance with an agreement to be signed with INFOM. A draft agreement has been prepared and discussed with both parties. The agreed draft should be sent to the Bank for approval before June 30, 2003. This agreement foresees: (i) the organization of a seminar to train and prepare promoters to assist the communities in forming MEs; (ii) the provision of personnel training during project preparation and implementation; and (iii) the preparation of the required manuals and guidelines such as: (i) Manual for the Promotion and Configuration of MEs; (ii) Methodology Guidelines for Promotion and Training of Micro-entrepreneurs for road Maintenance; (iii) Basic Manual of Entrepreneurial Management; and (iv) Technical Manual for Routine Maintenance of Rural Roads. The agreement also foresees the creation of an Interagency Work Committee integrated by INFOM, INTECAP, DGC and ADIMAM and nominates their respective representatives.

5. Selecting and Hiring Promoters. The Promoters (maximum 3) will be engaged to assist in promoting MEs among involved communities. They will also aid in selecting qualified candidates as members, in creating MEs and in delineating their final organization. It is envisioned that INFOM will determine if qualified candidates for promoters are available among its regular institutional social workers. In their absence, INTECAP will aid in devising procedures for their selection. Promoter candidates will comply with the following conditions:

- University or technical degree, particularly in the social area, with at least 2 year experience in promotional and organizational work with communities;
- Adaptability for group work;
- Interest in social work among the dispossessed population;
- Interest in working in isolated communities away from city amenities;
- Capacity for leadership and personal communication;
- Capability to coordinate interdisciplinary actions; and
- Residence or prior experience in the region.

The main responsibilities of the promoters will be to:

- Visit the area of influence of the roads maintained by each ME;
- Determine the availability of qualified candidates for ME membership in their coverage areas;
- Identify natural leaders in the communities;

- Promote the general microenterprise concept without creating false expectations;
- Motivate and mobilize suitable individuals to participate in events aimed at creating cohesive groups that demonstrate entrepreneurial proclivities;
- Promote the associative concept to potential micro-entrepreneurs;
- Promoting the auto-selection of members of MEs, while being careful to not influence the process of selection;
- Coordinate and participate in training potential micro-entrepreneurs in legal, administrative, accounting, financial, contract, and social security aspects, as well as in their rights and duties as associates, workers and owners of their enterprise;
- Assist MEs in preparing their governing statutes and internal work regulation;
- Assist legal representative of MEs in all required legal procedures;
- Coordinate all activities of the Work Group and the Institutional Committee with MEs; and
- Prepare monthly reports to the Project Coordinator.

6. Monitoring of project roads and ME groupings. Before starting the promotion campaign, the Work Group should inspect all roads to be included in the pilot project to assess the maintenance activities required and the suitability of the grouping proposed during the preparation of the project. The most practical final grouping of roads and the number of MEs required for their maintenance, as well as the real requirements of transportation, should be defined.

7. Preparation of Didactic Material. INFOM and INTECAP should jointly prepare, edit and publish the didactic materials required for the seminar to train promoters. This would include, in particular, developing a Manual for the Promotion and Configuration of MEs and a bulletin that summarizes in a relatively straightforward manner the objectives to be achieved by creating associative MEs for routine maintenance of rural roads. This publication, which will include pictures, drawings and graphics, will be aimed mainly to the potential micro-entrepreneurs, but should also be suitable for general dissemination to better acquaint the public with the anticipated benefits of the project. The content of this bulletin should include general information on the projects origin, nature of the associative MEs, tasks to be performed, procedures for contracting and supervision and social benefits expected to be achieved.

8. Training Seminar for Promoters. This activity will be undertaken simultaneously with the hiring of Promoters. INFOM and INTECAP should coordinate and carry out the training seminar for the promoters, which would be shared by the members of the Work Group and by representatives of ADIMAM and DGC. The main subjects to be included in the Seminar are:

- Introduction of the participating agencies;
- Introduction of the pilot project of associative MEs for routine maintenance of rural roads;
- Socio-economic characteristics of the country and project region (Altiplano Marquense);
- General characteristics of associative MEs;
- Prior experience with associative MEs for road Maintenance;
- Methodology for participative community work (importance of “on the job training”);

- Methodology for the promotion, creation and consolidation of associative MEs;
- Technical aspects of the ME pilot project;
- Contract between MEs and the executing agency and ADIMAM;
- Maintenance activities to be carried out by the MEs;
- Legal Status of the MEs;
- Administrative structure of the MEs;
- Accounting aspects of the MEs;
- Social aspects of the MEs (social objectives, operational scope and services);
- Institutional legal obligations; and
- Field experience (direct contact with one or more communities, project presentation, identification of natural leaders, diagnosis of individuals and of the community, meeting with potential micro-entrepreneurs).

9. Promotion of MEs. The trained promoters would carry out the field work within their respective assigned areas. Promoters would be responsible for: (i) contacting the population clusters in the areas covered by each ME; (ii) prepare a diagnostic of the target community and of the potential candidates for ME membership; (iii), explain the project objectives and the role of the MEs, (iv) assist in the selection of eligible individuals until ME can carry out this activity on its own, and (v) establish a provisional organization that can be turned into a full-fledged ME. The candidates for ME membership should comply with the following profile:

- Adult men or females residing in the targeted communities, preferably head of families;
- Interest in participatory community activities;
- Experience in activities similar to road maintenance or willingness to participate in training courses offered by the program;
- Physical condition suitable for performing strenuous work related to road maintenance;
- Leadership and adaptability to group work; and
- No criminal records.

10. Creation of MEs. Once the potential members have selected themselves and have formed a provisional organization, the promoters in conjunction with all involved agencies would begin training of ME members. These activities would include:

- Defining the operational structure and composition of MEs;
- Describing the advantages for its members and scope of work;
- Prior experience in Guatemala with similar organizations;
- Foreign experience with associative MEs for road Maintenance;
- Scope and characteristics of the pilot project in San Marcos;
- Defining the legal status of the MEs to be created in Guatemala, functions and

- responsibilities, including the legal requisites and procedures for incorporation;
- Enterprise management: organization, administration, accounting, internal charter and regulation, documentation, filing, invoicing, budgeting, etc.;
- Implementing of routine maintenance activities;
- Formulating small projects, preparation of cost estimates;
- Elaborating training methodologies;
- Imparting the importance of, and methods for effective communication;
- Integrating women into project activities;
- Imparting the importance of associative and community oriented work;
- Simple methods for self-evaluation; and
- Basic teachings on sustainability and environmental impact of road works.

After completing the training and with the assistance of the promoter, the provisional MEs would hold its Founding General Assembly, elect the internal authorities prescribed by law, approve the prepared Statutes and Internal Regulations and initiate the proceedings required for legalization of the MEs.

11. Unit Cost per Km.-Year for Routine Maintenance through MEs. Preliminary cost estimates have been determined in relation to the minimum wage for rural areas for uniforms, tools, safety accessories, basic social insurance or insurance against labor accidents, and occasional transport costs to the work side. Since the total scope of rural roads to be included in the project and the groupings of roads have not yet been determined, cost estimates were estimated for typical routine maintenance of a group of rural roads totaling 20 km performed by a ME of 10 members, resulting in an average annual cost of US\$700 per km. On an aggregate basis, the maintenance of 350 km of rural roads would cost about approximately US\$245,000 per year.

12. Additional Costs to be considered. Additional costs that should be considered to determine the total cost of the pilot project include: (i) publications and training costs, about US\$150,000; (ii) initial cost of two promoters for five months US\$15,000; (iii) one promoter for 12 additional months US\$15,000; (iv) supervision costs, estimated at US\$40,000 per year; and (v) US\$50,000 for the engagement of a foreign expert on maintenance MEs, for periodical assistance, particularly during the initial stage and later periodical project evaluations. All these costs should be reviewed as soon as the final project scope is defined.

13. Annual Work Program of each ME. ADIMAM's technical road unit UTAV should undertake a detailed inspection of the roads assigned to the MEs as well as elaborate the type and scope of routine maintenance activities required. Once the requirements of all roads included in the group are defined, it would be necessary to prepare a Monthly and Annual Work Program for each ME. Beginning in the first year of project implementation, supervision of the ME performance would be carried out to ensure compliance of each of their respective annual work programs. Based on the experience of the first or of subsequent years, UTAV would review the viability of supervising routine maintenance activities through compliance with Quality Standards for each activity.

14. Model of Contract with MEs. INFOM and ADIMAM should prepare a model contract to be signed by all MEs. This model should avoid establishing a direct labor relation between the MEs and

ADIMAM and should define clearly ME obligations, the supervision system, payment procedures, potential penalties or retentions in case of non-compliance, warranties, etc. ADIMAM representatives have suggested that the contracts should cover a four year period to avoid political interference during municipal elections, which are carried out every four years. This extended period would have the additional advantage of ensuring longer permanency of ME personnel that has received special and intensive training. The legal council hired to define the appropriate Legal Status of the MEs, should also be entrusted with the responsibility of preparing the model contract.

15. Contract Signing and Execution. The incorporation of each ME should be coordinated by the Work Group responsible for the preparation of the corresponding annual work program and the respective contract. Execution of the maintenance program should start as soon as possible after signing and the formalization of the contract.

16. Supervision of ME Performance. ADIMAM, through UTAV, would monitor and supervise the implementation of the agreed Annual Work Programs and compliance with Quality Standards. Specifically, UTAV would oversee the execution of maintenance activities, signing of the monthly performance statements, submission of monthly payment forms, imposition of penalties, retentions or discounts according to the contract, adjustments of monthly work programs, and all other activities expected from an efficient supervising organization.

17. Program Evaluation. An internal evaluation should take place at the end of the promotion and the establishment period for MEs and on a yearly or half-yearly basis to discuss the achievements, difficulties, and lessons learned in the implementation of the program. These evaluations would be aimed at fine-tuning the program and at preparing similar programs in other regions of the country.

18. Follow up and Technical Assistance to Ensure Consolidation of MEs. All institutions involved in project execution (INFOM, ADIMAM, INTECAP and DGC) should follow up on the development of MEs. This would be governed by signed joint agreements that would establish the type and scope of activities, the required level of follow-up required, and the resources devoted in achieving this objective. These efforts should center on periodic evaluations and the provision of technical assistance to solve potential problems and promote system-wide synergies.

19. Lessons learned from previous projects. The ME pilot project draws heavily from best practices in the region. In particular, many of the lessons learned have been drawn from the ME program in Peru, which used MEs to regularly maintain unpaved rural roads and has demonstrated to be sustainable in the medium-term. In this manner, the proposed pilot project is based on the following principles and experiences from earlier Bank projects in the region, which is described in greater detail in the subsequent paragraphs:

- *Balancing poverty alleviation and the promotion of economic opportunity with improving rural access.* One of the main principles of a poverty alleviation strategy lies in the recognition that sustainable solutions rest on encouraging income generation opportunities. In this manner, the ME strategy is strongly oriented toward poverty reduction. However, ME should not be viewed as a welfare program, but as a cost-effective way of carrying out road maintenance activities to ensure that the benefits from improved access do not disappear over time. The fragile dynamics of local development require close monitoring of benefit distribution effects. No matter how deeply rooted in the community, support for MEs decline over time, if communities perceive that they are not benefiting from the ME program. This underscores the importance of complementary local development initiatives and the development of an exit strategy that provides opportunities to other members of the

community once the ME (or its associates) have developed enough capacity to continue on their own without direct project support. Based on international experience, ME programs have tended to serve as catalysts for local development initiatives, create temporary employment, and provided complementary income generation opportunities.

- *Financial and operational requirements of MEs.* From an economic efficiency perspective, it is desirable that MEs conform to the legal and regulatory framework governing the financial position of small enterprises in the country. This includes the following operational requirements: (i) designation of managerial staff to designate expenditure use, including the allocation of salaries; (ii) paying taxes; (iii) preparing financial statements and having this information audited by an independent accountant; (iv) ensuring that a suitable contractual mechanisms exists for verifying proper completion of works as well as ME payment; (v) establishing a fixed time schedule to ensure that the timely completion of project works; and (vi) adequate selection process for associates (e.g. proximity to worksites, previous construction experience, inclusion of heads of households, and personal interviews); and (vii) the provision of continuous training. These elements are also vital for building capacity to ensure that the MEs develop an “entrepreneurial culture” in order to become sustainable entities over time. These requirements have been incorporated in the ME program financed under the project.
- *Establishing ownership over project activities.* The success and sustainability is predicated on the level of ownership that MEs and its associates are given during the implementation of road maintenance works. Working directly with communities in establishing MEs, effective coordination with government institutions and the MEs, and adequate dissemination public information regarding project activities and potential benefits are critical mechanisms for establishing and sustaining ownership. The value of community participation has been well documented as critical element for inducing positive social change. Participation workshops, which have been incorporated under this project, are powerful way to mobilize public involvement and create ownership. Once the MEs have been established and have demonstrated an adequate implementation record, a coordination mechanism among MEs, such as an association of MEs, is useful for voicing common problem and developing system-wide solutions.
- *Use of appropriate technologies.* Once the ME has demonstrated initial results, there is pressure from a variety of sources to use more expensive technologies, such as chemical treatments and the purchase of heavy equipment. As a result, MEs should focus on using labor-intensive technologies, which is cost-effective and consistent with having a significant poverty alleviation impact. Although more expensive technologies should not be precluded once an ME has grown large enough to require wider economies of scale, it is important that ME are not pushed into using these technologies until ready.
- *Financing of MEs and the development of a sustainable financing mechanism.* ME are contracted out through performance-based contracts and paid on a monthly basis, subject to meeting the quality standards stipulated in the contract. Based on international experiences, salaries account for 89 percent of expenditures and profit margins average 14 percent. To support the ME program, it is necessary to develop a sustainable financing mechanism with adequate resources to finance ME activities over the medium-term. During implementation, there are plans to development an agreement with COVIAL to link the ME pilot project with the National Road Fund, especially in the financing of road maintenance activities at the Departmental level. A possible source of funds could be through the 1 Quetzal/gallon gas tax that is already in place.

Additional Annex 13: Pilot Project on Trails, Paths and Footbridges GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT

Background

The Rural and Main Roads Project, Loan 4260-GU has been improving the rural road system of 12 municipalities in the Altiplano Marquense, located in the northern portion of the Department of San Marcos, which is one of the poorest areas in Guatemala. According to the findings of a recently carried out Partial Impact Analysis, this project, implemented by the Association of local municipalities ADIMAM, is having a positive impact on the reduction of poverty in the area. However communities that can be reached only by non-motorized means of transport (NMTs) have not participated fully of the benefits reaped by other communities directly connected to the rural road network.

Driven by the scarcity of agricultural land and by the perils of the long lasting civil war, many families have settled in isolated locations, where the deep ravines and steep slopes of the regions rugged topography impede the construction even of basic tracks for motorized transport. These scattered settlements have evolved into communities depending exclusively on paths and trails to connect them to the closest village or rural road, to access basic social services, and to move their products to markets. Transportation of essential staples and goods along these narrow and steep trails can only be carried out by walking (head- or shoulder-carrying), or by using pack animals. These inefficient and time consuming transport means heavily curtail the possibilities for economic development of the affected communities and condemn them to remain the poorest and most vulnerable sector of the rural population. Accessibility and mobility of these communities is further impaired by the poor conditions of the trails and paths, exacerbated by the absence of bridges to cross rapid flowing mountain rivers, leading often to total isolation over extended periods during the rainy season. According to the above-mentioned Partial Impact Analysis, the improvement of the prevailing conditions of these trails and paths is an anxious desire of all communities involved.

Conditions similar to these prevail in most mountainous regions of southern Guatemala and affect a great number of communities, many of them indigenous communities, representing a total population of about 400,000. Living conditions in these communities are particularly harsh on women and children, who are burdened extensively with load-carrying duties and suffer directly extreme hardships derived from difficult connections to health centers and schools.

This Pilot Project would start to address this critical national problem by: (i) identifying its extent within ADIMAM's 12 municipalities, the types of conditions and difficulties prevailing in the existing infrastructure of trails and paths, the most adequate cost effective solutions, and the willingness of the affected communities to participate in their execution; (ii) organizing joint efforts by INFOM, ADIMAM and the involved communities to plan and carry out corrective works and actions; (iii) executing jointly the necessary works and actions; and (iv) establishing the possibilities of executing similar programs in other regions of the country.

Objectives

The specific objectives of the Pilot Project are: (i) identification of the extent of the trails and paths system presently serving isolated communities in ADIMAM's area and development of a methodology to improve their standards and serviceability; (ii) promotion of the beneficiaries' participation in the various phases of subproject generation, design, implementation and maintenance; and (iii) promotion of the application of this system to other regions in Guatemala.

In addition to these specific objectives, the pilot project would address the following socio-economic objectives: (i) mitigation of extreme rural poverty by improving accessibility and mobility of the most dispossessed rural population sectors; (ii) diminishing prohibitive transport costs along existing trails and paths; and (iii) promotion of communities' involvement in the search for solutions to their own problems.

Project Scope

The pilot project would comprise execution of small works along, or at critical spots of, selected trails and paths, and construction of required small bridges along these routes. Typical works requested along the trails and paths are: (i) widening of narrow pathways to a minimum 1 m width; (ii) transversal and longitudinal drainage where needed; (iii) removal of slides and protection of side slopes; (iv) graveling of the road surface in stretches subject to flooding; (v) stone pavement along steep stretches subject to erosion; (vi) stone or wooden steps along extremely steep stretches; and (vii) other, including widening of trails up to 2.5 m, only where justified by special conditions.

Footbridge construction may include rehabilitation of existing footbridges in poor conditions and would comprise the following types of footbridges not wider than 2m: (a) stepping-stone bridges; (b) Irish crossings; (c) masonry arch bridges; (d) lumber bridges; (e) suspension bridges for wider or deeper ravines; and (f) other types suitable to be built with local materials and community labor.

This Pilot Project would also consolidate, particularly in its earliest stages, the participatory approach used during project preparation to identify the extent of the trails and paths system in the ADIMAM's region and assess the interventions or works needed for its improvement. For this purpose INFOM, with the support of technical personnel and of the experimented social workers of its Social Management Department, should organize participatory workshops especially designed to secure that community participation is undertaken in a systematic and organized manner. These workshops should offer an opportunity to: (i) provide local communities with necessary information about the project and their role in the project; (ii) assess transportation needs of these isolated communities, (iii) confirm with the beneficiaries the priority of the proposed interventions; (iv) validate the design of these interventions to include possible local solutions; and (v) mobilize community support for the implementation of the proposed works, for the future maintenance of the improved trails and paths and the footbridges, and in the prevention of damages to natural resources.

Present Status of Preparation

Due to unsuccessful prior attempts of INFOM to get from each ADIMAM municipality information of their respective needs for rehabilitation of trails and paths and construction of footbridges, to be evaluated and later discussed April 12, 2002 at a joint meeting, the mission and INFOM prepared in the first week of April an exploratory questionnaire to prompt immediate action by the municipalities. They were requested to submit this information at the April 12 meeting. Although the information submitted was incomplete and was presented unevenly by each municipality, its subsequent analysis showed a potential demand for rehabilitation of 71 trails and paths (total length about 290 km), used by an average of 190 people a day, and for construction of 119 footbridges. Of the 185 applications submitted, 16 were rejected because it could be detected that they corresponded to rural roads and not to trails. The cost estimates submitted by the municipalities permitted to infer a total cost estimate of approximately US\$1,200,000 equivalent for the small works requested in the 169 accepted applications.

Based on this experience, INFOM and the mission prepared a second, more detailed, questionnaire form, and detailed guidelines to insure adequate response. At a second meeting April 22, 2002, INFOM and the mission discussed with the municipalities the shortcomings of the first inquest, confirmed the

municipalities keen interest in this proposed program and agreed on a timetable for the preparation and submission of the replies. It was also agreed that a group of INFOM's social workers would assist the municipalities in this endeavor and would conduct inquiries at the user and community levels. Two ladies of INFOM's Social Management Department visited the area April 29 to May 4, 2002, assisted ten municipalities in the completion of the forms and interviewed at random members from 15 communities. These interviews ratified the information submitted by the respective municipalities and confirmed the keen interest of the communities in the improvement of their connecting trails, as well as their willingness to participate in the execution and later maintenance of the required works and in the protection of natural resources.

By May 7, 2002, INFOM was able to start processing the new information received only from 10 Municipalities; the other two promised to submit their information a few days later. Although this time the quantity, quality and accuracy of the information received increased substantially compared to the first inquiry, there were still some gaps and/or inconsistencies in the information sent by some municipalities. After rejection of 10 applications corresponding to rural roads, 130 valid applications remained in the running.

The information of the two remaining municipalities arrived May 14, 2002, comprising 6 applications from Sibinal and 70 from San Miguel Ixtahuacán, bringing the total to 206 applications. Although the number of applications presented by San Miguel exceeded by far the numbers submitted by other municipalities, the data presented by San Miguel appeared consistent and there was no reason to reject any of the applications submitted by this municipality.

The subsequent analysis of the data presented by the 12 municipalities showed the following demand:

- Total length of trails or paths for which works have been requested, 620 km;
- Average length of trails or paths for which works have been requested, 3km;
- Rehabilitation of 68 trails with a total length of about, 175 km;
- Construction of 171 footbridges (requested information on type or length of each bridge was too incomplete or inconsistent to allow due processing);
- Average use of trails and footbridges, 209 people a day;
- Average directly benefited population, 963;
- Average cost of trail rehabilitation, US\$10,378; and
- Average cost of bridge construction, US\$7,777.

Interesting additional information could be processed, or was added this time. The following list summarizes this additional information showing for each item in brackets the number of municipalities that submitted usable information:

- Total number of people per day who use these trails (12 M), 39,461.
- Total population directly benefited by the requested works (8 M), 143,454.
- Main reasons for use of trails and footbridges (12 M.): access to agricultural activities, 15.8%; access to schools, 15.4%; access to health centers, 12.8%; gathering or transporting lumber, 12.5%; commercial, 12.3%; family matters, 11.1%; religious activities, 9.5%; contact with authorities, 7.8%; and others, 2.8%.

- Average days of traffic interruptions per year (9M.), 126 days.
- Types of trail rehabilitation works requested (9 M.): stone surfacing 18,8%; gravel surfacing, 16,8%; transversal drainage, 15%; widening 12,3%; longitudinal drainage 11,5%; others, 10,3%; steps, 8%; and slide removal, 7,3%.
- Existence of alternative roads (7 M.), from 206 applications only 57 indicated existence of alternative roads with an average length of 4.5 km and indicating average time saving by using the trail of 61 minutes per trip.
- All applications confirmed the willingness of the involved communities to participate in the execution of works, contributing with labor, with local materials, or both.
- All applications but three confirmed the willingness of the involved communities to participate in the protection of trees or other natural resources endangered by the greater accessibility resulting from the proposed improvements.

The above information shows clearly that in the ADIMAM territory there is a substantial demand for rehabilitation of trails and paths, with a total cost estimate of about US\$706,000 equivalent; and for construction of footbridges, some located on the trail to be rehabilitated, but most of them on other trails, with a total cost estimate of about of about US\$ 1,330,000 equivalent. This total estimated cost of about US\$2 million equivalent doubles the funds provided for this purpose in the proposed project, therefore it would be possible to implement under the project only half of the works requested.

The selection and prioritization of the requests received were carried out by INFOM after the preparation mission, partially at headquarters with support of its local representative, and partially through extended field trips undertaken by three social experts and three engineers. The studies performed at headquarters, the field investigations and the subsequent discussions with municipal authorities and involved communities allowed to: (i) eliminate those requests that could not be satisfactorily identified, or corresponded to roads and not to trails, and those for suspension footbridges exceeding 50 meters length; (ii) review the justification of the remaining sub-projects; (iii) inspect representative sites of the remaining sub-projects; (iv) estimate work quantities; and (v) prepare reliable unit costs and cost estimates of the remaining sub-projects.

A comprehensive study was submitted January 10, 2003, which is summarized in one table showing that --- requests have been accepted, which include --- sub-projects for rehabilitation of trails, amounting to about US\$349,000 equivalent, and --- subprojects for construction of footbridges, amounting to about US\$450,000 equivalent (--- requests included trails and footbridges sub-projects). This number of identified sub-projects is sufficient to initiate implementation of this pilot project. However, INFOM should prepare the first year package of works for about US\$250,000 before September 30, 2003. Based on the experience of the implementation of this first year package, additional sub-projects could be identified for execution during the fourth year aiming at compliance with the US\$1.0 million target for this pilot project.

Action Plan for further Preparation

To perform the required analysis, INFOM should form two working groups, one by road experts and the other by social workers, with the assignment to carry out the following tasks:

- Estimation of unit costs of all work items foreseen, including different types of footbridges
- Primary prioritization of the applications received, by assigning higher priority to requested sub-projects not having an alternative road and/or to those showing the longest annual traffic

interruptions

- Preparation of a listing of non government organizations (NGOs) that could participate in different stages of project preparation and implementation, or could contribute with their prior experience in these matters
- Field inspection of the works requested in each priority application to appraise characteristics and quantities of work items required
- Based on the above, review the assigned prioritization
- INFOM's group of social workers, should organize interviews or participatory workshops with the involved communities especially designed to: (a) provide them with necessary information about the project and their role in the project; (b) assess transportation needs of these isolated communities; (c) confirm with the beneficiaries the priority of the proposed interventions; (d) validate the design of these interventions to include possible local solutions; and (e) mobilize community support for the implementation of the proposed works, for the future maintenance of the improved trails and paths and footbridges, and for the prevention of damages to natural resources.
- The findings of the social group should be coordinated with those of the technical group to carry out jointly a social-economic analysis and define the final prioritization of the sub-projects, including definition of those to be implemented during the first year.
- Prepare proposals for the incorporation of interested NGOs in the preparation, financing and implementation of the project.

The above activities should be completed during the first year of project implementation to allow for timely selection of the works to be executed, preparation of their design, and execution of their construction.

**Additional Annex 14: Labor-Based Municipal Roads Pilot
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT**

Objectives

The objective of this Pilot project is to make optimum use of the resources available in the economy and in the project region where many people are underemployed and natural construction materials are often found in the proximity of the works site. This objective can be achieved by using labor-based equipment supported methods to rehabilitate and improve municipal roads efficiently and to the required standards (the term labor-based equipment supported means labor supported by machines rather than machines supported by labor)

Presently, construction practices are strongly biased toward the use of equipment-based methods, largely because of technology transference from more industrialized countries, resulting in a labor contribution of about 10 to 15% of the total construction cost. This Pilot project seeks to increase the use of labor to about 30 % of the construction cost, and reduce the bias toward equipment-based construction methods by reintroducing more intermediate technologies in Guatemala. The proposed approach includes the identification of those work items, which are more suited to the use of labor and the adoption of design solutions more suitable for this method of construction.

Suitability of labor-based construction

Labor-based technologies suit well the project rural environment:

- There are many poor people, most of whom are underemployed. In the HUISTA and MAMSOHUE project areas for example, 31% and 50% of the population is extremely poor (i.e. per capita income is less than \$255 per annum). In the HUISTA region, 78% of the population is poor and in the MAMSOHUE area, 85% of the population is poor;
- The unskilled labor salary is about \$3.80 which compares favorable with the cut-off wage of \$4.0 per day estimated by ILO for cost effectiveness of labor compared with equipment in works construction;
- The size of the roads sections to be improved is small, most targeted road sections will have lengths of two to ten kilometers, their location is remote and disperse and many of them have sources of natural materials near by;
- There is interest at the municipal and central levels of government to generate more employment in rural areas;
- Labor-based works adapt better to the payment capacity of the municipalities, which receive their budget allocations every two months; and
- There is experience with labor-intensive programs in Guatemala.

In addition, the increased use of labor instead of equipment would contribute to improve the trade deficit by reducing the need to import equipment.

In order to confirm the suitability of the labor-based method, a real case was evaluated. Construction, by equipment-based methods, of a 1.55 km road located in the project area was contracted with a local firm. Because of the rocky site conditions, it was decided to modify the design and adapt it to a labor-based method. Table 1 shows a comparison of the price, as submitted by the contractor, for an equipment-based construction and the estimated cost of the works as built by labor-based methods. In this case, the use of

labor-based construction increased the labor portion of the cost from 15 to 43 % and the total cost of the was 18 % cheaper than if done by equipment-based methods. A closer analysis of the contractor's proposal showed that the number of hours envisaged for some of the equipment units, to accomplish the proposed works, were unrealistically high. Even so, this case shows that labor-based methods are a cost-effective alternative to equipment-based methods in the project area.

Table 14.1: Price Comparison of Equipment-based and Labor-based Construction Methods in the Project Area*

Resource	Equipment-based method ‘000 Quetzals (% of total)	Labor-based method ‘000 Quetzals (% of total)
Equipment	227.7 (51)	59.0 (16)
Labor	65.0 (15)	163.5 (43)
Materials	153.8 (34)	156.8 (41)
TOTAL	466.5 (100)	379.3 (100)

* For a road of length 1 55 km

Description

The Pilot project will provide for the selection of one or two road sections to be rehabilitated or improved, using labor-based construction methods, in each of the regions of MAMSOHUE and HUISTA project regions. Road sections will be selected from the roads in the first package. If the procurement and implementation of the labor-based road sections are successful, more labor-based roads will be included in the remaining procurement packages.

Selection Criteria

Selection of road sections will take into consideration the choice of design standards and selection of materials that support the use of labor-based methods. Small, geographically dispersed, technically simple road improvements are usually better served, both for construction and for maintenance operations, by methods drawing upon locally available labor. The choice of a broken stone (empedrado), instead of graded stone for road surfacing, dictates the use of labor-based method, and the use of masonry or brick may be an acceptable alternative to reinforced concrete or pre-cast pipes. Therefore the selection criteria for selecting the road sections should consider:

- Road sections of short lengths, say less than 8 km;
- The absolute maximum longitudinal grade limit should not exceed 15 %;
- The proximity of suitable road materials such as stone; and
- The willingness of laborers to work in road construction. This will be gauged by discussions with community leaders and simple surveys.

Labor-based Work Items

The construction contract will contain a range of items, some of which are more suited to the use of equipment and others that are more suited to the use of labor. A review of the work items in the bill of quantities (BOQ) used in the San Marcos project shows that some materials are more easily applied through labor-based methods, if some modifications are made to design and construction methods. The net effect will be to have a more balanced technology in road works. Some of the BOQ work items recommended for labor-based implementation include:

- Hand-laid stone pavement (empedrados);

- Cobblestones paving (adoquinados);
- Masonry stone work;
- Earth trapezoidal ditches; and
- Stone/masonry culverts.

Implementation of labor-based methods will rely in the experience of various labor-intensive methods in Guatemala, particularly the USAID-DGC program (1978-1996) that developed technical material suited for labor-based construction. The Table 14.2 presents production data used in the USAID-DGC program

Table 14.2: Labor Production

Item	Metric Units	Daily production by person
Structural Excavation in dry material		
○ Soft	CM	1.99
○ Medium	CM	1.40
○ Hard	CM	1.06
○ Rock	CM	0.65
Culvert built on site		
○ Using cast	CM	0.30
○ Using string	CM	0.84
Masonry		
○ Cast stone work	CM	0.30
○ Using string	CM	0.84
○ Boxes	CM	0.37
Laying a 30" concrete pipe	LM	1.00
Laying a 36" concrete pipe	LM	0.50
Concrete ditch	SM	2.00
Laying stone surfacing	SM	2.00

LM: Linear Meter; SM: Square Meter; CM: Cubic Meter

Execution and Monitoring

Labor-based works will be implemented through contracts procured following shopping procedures for which at least three proposals will be requested, preferably from established firms with some experience on labor-based construction. The selected contractor will be free to either hire labor directly for undertaking labor-based activities or subcontracting the labor-based portion of the works to local ad-hoc labor groups. Contract conditions will take into consideration the longer time period required by some labor-based activities such as stone surfacing, and will include clauses related to insurance, basic health and labor standards on the work site. In addition the conditions of contract will also include standard Bank clauses related to fraud and corruption.

Monitoring of labor-based contracts will be carried out by technical units of the municipal associations or by the consulting firm contracted for the supervision of the works. The initial labor-based contracts will be closely monitored to draw lessons for replication in future procurement packages. Data will be obtained to facilitate cost comparisons between labor-based and equipment-based activities in the project area. This will be achieved by monitoring resource inputs for labor, implements, vehicles and construction plant in the labor-based contracts. On completion of each contract, the quantity of work performed would be measured so that the input/output analysis would be based on actual quantities. The data will be analyzed to show the cost for each labor-based activity. These costs will be further compared with the rates for equipment-based contracts in the same package.

Additional Annex 15: Analysis of the Financial Capacity of the Municipalities GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT

Background

The following analysis covers 21 municipalities, incorporated into two municipal associations, located in the department of Huehuetenango in Northwest Guatemala. These Associations are: MAMSOHUE (*Mancomunidad de Municipalidades del Sur Occidente de Huehuetenango*) with 13 members; and HUISTA (*Mancomunidad de la Región Huista de Huehuetenango*) with 8 members.

Objectives

The three objectives of this analysis are: (i) assessing the financial capacity of the Municipal Associations to absorb the costs of rehabilitation and maintenance that will result from participating in the project; (ii) determining the length of roads that MAMSOHUE and HUISTA can rehabilitate and maintain given their available resources; and (iii) closely examining municipalities with fiscal deficits and determining if these problems are caused by low levels of revenue or high levels of expenditure, or a combination of both. The analysis will then make some suggestions to resolve these problems.

Objective 1: Financial Capacity of the Associations to Acquire New Commitments. In order to adequately assess the financial capacity of the Municipal Associations, it was necessary to use executed budgetary data. Given that the 2001 and 2002 municipal budgets are still projected, the analysis is based on available executed budgetary data for 1999 and 2000.

In Guatemala, the main source of municipal revenues for financing public investment are fiscal transfers from the central government. These include a share of the Value Added Tax (IVA) and taxes on motor vehicles. Municipal own revenues usually finance recurrent (administrative and operational) expenditures. The main sources of municipal own revenues are local taxes, fees and user charges. Local taxes include property taxes (*Bienes Inmuebles*), excise taxes and in some cases, a vehicle tax.

For the municipalities in MAMSOHUE Association: The 1999 fiscal accounts indicate that eight out of the 13 municipalities (or 62 percent) had a deficit in the overall fiscal balance (see table 15.1). These deficits ranged from 138,932 Quetzals (about US\$17,766 dollars)¹ in the municipality of La Libertad, to over 2 million Quetzals (about US\$256,000) in the municipality of Cuilco. In 2000 the situation changed and only two municipalities closed the year with deficits in their overall balance: La Libertad (116,583 Quetzales) and San Juan Atitán (583,615 Quetzales).

When comparing the performance for both years of the analysis, the financial situation of MAMSOHUE improved significantly in 2000. The results show that the magnitude of the overall surplus of the association fluctuated between 1.6 million Quetzales (US\$205,000) in 1999 and 10.3 million Quetzales (US\$1.3m)². Despite the general improvement in the Association's finances, one municipality (La Libertad) displayed a budgetary deficit in both years. This result suggests that La Libertad needs to carry out a fiscal structural adjustment before it can fully participate in the new project.

Table 15.1:

1999 MAMSOHUE FISCAL ACCOUNTS (In Quetzales)				
Municipality	Total Income	Budgetary Adjustment	Total Expenditure	Overall Balance
SAN PEDRO NECTA	3,352,033	449,713	3,555,474	246,271
LA LIBERTAD	4,148,863	309,858	4,597,653	-138,932
SANTIAGO CHIMALtenango	1,996,617	266,576	2,232,210	30,983
MALACATANCITO	2,220,924	57,899	2,478,812	-199,989
SAN SEBASTIÁN	4,116,590	134,834	5,023,409	-771,985
SAN JUAN ATITAN	4,163,646	1,239,923	3,642,153	1,761,416
SANTA BARBARA	2,959,136	846,763	3,216,158	589,742
SAN RAFAEL PETZAL	2,592,911	905,542	4,693,762	-1,195,309
COLOTENANGO ¹	3,593,999	1,497,860	N/A	5,091,859
SAN GASPAR IXCHIL	1,671,766	722,534	3,860,497	-1,466,198
SAN IDEFONSO IXTAHUACAN	3,173,471	110,634	5,042,480	-1,758,375
CUILCO	4,165,287	516,231	6,726,464	-2,044,946
TECTITAN	3,370,557	342,721	2,279,581	1,433,697

1/ There is no data available for expenditures.

2000 MAMSOHUE FISCAL ACCOUNTS (In Quetzales)				
Municipality	Total Income	Budgetary Adjustment	Total Expenditure	Overall Balance
SAN PEDRO NECTA	4,717,379	389,824	4,717,379	389,824
LA LIBERTAD	4,614,939	611,747	5,343,270	-116,583
SANTIAGO CHIMALtenango	2,944,388	652,839	2,853,731	743,496
MALACATANCITO	3,734,613	346,901	3,403,572	677,941
SAN SEBASTIÁN	4,098,356	90,970	3,080,653	1,108,673
SAN JUAN ATITAN	4,965,121	165,982	5,714,718	-583,615
SANTA BARBARA	4,131,688	121,090	4,088,569	164,208
SAN RAFAEL PETZAL	4,231,392	1,605,042	2,620,732	3,215,702
COLOTENANGO	4,099,325	327,270	3,660,038	766,557
SAN GASPAR IXCHIL	4,615,294	561,564	3,039,005	2,137,854
SAN IDEFONSO IXTAHUACAN	4,221,185	319,163	4,057,553	482,795
CUILCO	6,323,026	0	5,070,674	1,252,352
TECTITAN	4,075,675	220,121	4,209,351	86,445

Source INFOM and Bank staff estimates.

For the municipalities in HUISTA: The overall fiscal position of this Association is more favorable than the one of MAMSOHUE. The 1999 results show that only three out of the eight municipalities (or

38 percent) finished the year with a deficit in the overall fiscal balance (see table 15.2). The deficits ranged from 346,077 Quetzales (about US\$44,255) in the case of the municipality of San Miguel to over 1.7 million Quetzales (about US\$220,000) in the case of the municipality of La Democracia. In the year 2000, with the exception of La Democracia (whose deficit grew by over 100 percent), the municipalities experienced surpluses in their overall fiscal balance.

Table 15.2:

1999 Huista FISCAL ACCOUNTS (In Quetzales)				
Municipality	Total Income	Budgetary Adjustment	Total Expenditure	Overall Balance
NENTON	2,237,351	0	3,562,276	-1,324,925
LA DEMOCRACIA	1,843,583	298,596	3,865,704	-1,723,526
JACALTENANGO	4,196,116	1,402,540	3,931,860	1,666,795
SAN MIGUEL ACATAN	2,685,961	970,696	4,002,735	-346,077
TODOS SANTOS				
CUCHUMATAN	4,817,478	543,862	4,525,528	835,813
CONCEPCION	2,789,019	1,167,143	1,777,127	2,179,034
SAN ANTONIO HUISTA	1,996,688	1,581,535	2,215,410	1,362,813
SANTA ANA HUISTA	2,013,930	1,581,535	2,013,930	1,581,535

1/ based on projected data

2000 Huista FISCAL ACCOUNTS

(In Quetzales)

Municipality	Total Income	Budgetary Adjustment	Total Expenditure	Overall Balance
NENTON	4,452,634	349,395	3,907,584	894,445
LA DEMOCRACIA	5,460,544	859,151	10,175,967	-3,856,273
JACALTENANGO	7,173,802	2,983,271	6,350,455	3,806,618
SAN MIGUEL ACATAN	4,412,281	14,844	3,995,437	431,688
TODOS SANTOS				
CUCHUMATAN	7,055,756	1,241,212	6,831,064	1,465,903
CONCEPCIÓN	4,887,109	564,684	4,039,262	1,412,531
SAN ANTONIO HUISTA	4,249,344	333,698	3,577,029	1,006,014
SANTA ANA HUISTA	4,342,459	276,114	4,469,355	149,218

Source: INFOM and Bank staff estimates

Analyzing the results from both years we can conclude, as was the case with MAMSOHUE, the overall fiscal position of HUISTA improved in 2000. The magnitude of the overall surplus of the association fluctuated between 4.2 million Quetzales (about US\$537,000) in 1999 and 5.3 million Quetzales (US\$686,000) in 2000. Nevertheless, one municipality, La Democracia, incurred continuous deficits in both years. This deficit indicates the need for structural adjustment in the public finances of La Democracia before it can participate in the new Project.

Several factors can explain the results described above. First, the less favorable results in 1999 when compared to 2000, should be understood in the context of the 1999 municipal elections in Guatemala. It

is generally the case during elections that government revenue tends to fall while expenditures rise. This tendency, known as the “Electoral Cycle” effect, promotes inefficiencies and generates large deficits that take time to overcome. It is also to be noted that as newly elected mayors took office in 2000, they were subject to a learning curve. This initial lack of administrative experience probably contributed to lower expenditures in that year. Second, in most cases, the municipalities finance part of their overall deficits by delaying payments to suppliers and contractors, thereby temporarily financing the municipalities’ fiscal deficits. Usually these debts are paid off in the following fiscal year as new resources become available. However, a situation of chronic fiscal deficits can be harmful to the municipalities’ ability to develop their strategies in the medium and long term. A third factor that explains the above results is frequent delays on the part of the Central Government in executing complete constitutional transfers to municipalities. The payments owed to the municipalities are then transferred during the first quarter of the following fiscal year. These delayed transfers, that appear in the above tables 1 and 2 as “budgetary adjustments,” help municipalities to finance most of their overall fiscal deficits.

Objective 2: Determining the size of the road network that Municipal Associations can rehabilitate and maintain, given available resources. The optimal size of the road network can, in principle, be defined in two ways: (i) based on the *demand*, determined by the needs of the municipalities; and (ii) based on the *supply*, determined by the number of kilometers that a municipality could rehabilitate and maintain, given available resources. It is the second method of defining the optimal size of the rural road network that is the focus of this section of the analysis. In order to determine the optimal length of the road network for the two new Associations (MAMSOHUE and HUISTA), the analysis will calculate the expenditures using the costs of rehabilitation experienced in ADIMAM and the costs of maintenance suggested by the project’s road engineers. On the revenue side, a base case scenario was developed to determine the Associations’ available resources for the project, which will be detailed below.

Expenditures

It is projected that during the four year duration of the San Marcos pilot project (Loan 4260-GU), nearly 400 kilometers of rural roads will be rehabilitated. To date, 189 kilometers have been rehabilitated at a total cost of approximately 22 million Quetzales. Accordingly, the average cost per kilometer rehabilitated was 116,853 Quetzales, of which the Bank’s loan financed 85 percent (99,325 Quetzales) and the ADIMAM financed the remaining 15 percent (17,528 Quetzales). In addition to the rehabilitation costs, each of the twelve municipalities in ADIMAM is required to make a fixed yearly contribution of 75,000 Quetzales. This contribution is used to finance ADIMAM’s technical roads unit (UTAV) and the regional road fund (FVR) (See Table 15.3).

Table 15.3:

RURAL ROADS PILOT PROJECT IN SAN MARCOS		
ADIMAM		
CONCEPT	Length (in Kilometers)	Cost (in Quetzales)
Pilot Project (Loan 4260-GU)	approx.400 Km.	47 million
Executed (to date)	189 Km.	22 million
Average Rehabilitation Cost Per Km.:		
Total Cost for San Marcos (Bank Loan plus Municipalities)	1 Km.	116,853
World Bank Loan (85%)	1 Km.	99,325
ADIMAM’s co-financing (15%)	1 Km.	17,528

Source: INFOM, UTAV and Bank staff estimates.

The average cost per kilometer rehabilitated in the Huehuetenango Associations (MAMSOHUE and HUISTA) is expected to be 20 percent higher than that in ADIMAM. The reasons for higher cost are the difficult topography of the region and the larger area of these municipalities. These two factors increase infrastructure costs, and costs of transporting equipment and materials. Consequently, the average cost of rehabilitating one kilometer in the Huehuetenango Associations is expected to be 140,224 Quetzales, of which the Bank's loan would finance 75 percent. The Huehuetenango Associations (MAMSOHUE and HUISTA) will finance the remaining 25 percent. This higher proportion of project co-financing that will be provided by the Huehuetenango Associations, when compared to ADIMAM's 15 percent, is justified by the superior financial position of the municipalities in Huehuetenango. As is case with ADIMAM, all 21 municipalities in Huehuetenango will be expected to make a fixed yearly contributions of about 75,000 Quetzales.

The network of rural roads that will be rehabilitated must be maintained in order to ensure the sustainability of the initial investment. These roads need two types of maintenance: (i) routine maintenance, that will be applied every year and consists of basic upkeep of the roads; and (ii) periodic maintenance, which will be applied in recurrent cycles of five years to the total length of the Association's rehabilitated road network. Periodic maintenance requires more intensive upkeep of the roads. The costs associated with both types of maintenance will be the sole responsibility of the municipal associations. The average cost of routine maintenance is about 6,400 Quetzales (US\$800)³ per kilometer, while the average cost of the periodic maintenance is about 42,067 Quetzales (US \$5,258 dollars) per kilometer.

Revenues

On the revenue side, the analysis considers a base case scenario to determine the amount of resources that the two Huehuetenango Associations can afford to spend on rehabilitating (for the four year duration of the project) and long-term maintenance of their rural road network. This scenario is based on the following assumptions: (i) Municipalities will allocate 50 percent of the resources annually designated for the transport sector (about 30 percent of total investment) to rehabilitation and maintenance; and (ii) municipalities will additionally allocate 15 percent of their overall fiscal balance to road rehabilitation and maintenance. Under this scenario, the municipalities in the two Associations could count on resources of approximately seven million Quetzales (US\$875,000) that they can spend yearly on road rehabilitation and maintenance.

Table 15.4:
RURAL ROADS PROJECT IN HUHUELENANGO
-- MAMSOHUE and Huista --

CONCEPT	MAMSOHUE	HUISTA
Resources available for rehabilitation and Maintenance	7,061,725	7,173,348
Fixed annual contribution (75,000 Quetzales) per municipality	975,000	600,000
Net Resources (after the fixed annual contribution)	6,086,725	6,573,348
Average Rehabilitation Cost Per Km.:		
Total Cost for Huehuetenango (Bank Loan plus Municipalities)	140,224	140,224
World Bank Loan (80%)	112,179	112,179
MAMSOHUE and Huista co-financing (20%)	28,045	28,045
Average Maintenance Cost Per Km.:		
Routine maintenance	6,400	6,400
Periodic maintenance	42,067	42,067

Source: INFOM, UTAV and Bank staff estimates.

In order to determine the optimal size of the road network, it is essential to determine the Associations aggregate financial commitments resulting from rehabilitation and maintenance of the roads. The larger the number of kilometers rehabilitated, the greater the financial commitment to maintenance. Given the assumptions developed in this section, we can conclude that MAMSOHUE could afford to rehabilitate a cumulative total of 450 kilometers over the four year project span. By the same measure, HUISTA could afford to rehabilitate a cumulative total of 486 kilometers.

Table 15.5:

Size of Network (Km.) that Could be Rehabilitated and Maintained MAMSOHUE									
Number of Kilometers	Duration of Project				Maintenance cycle				
	1 year	2 year	3 year	4 year	5 year	6 year	7 year	8 year	9 year
Rehabilitated	112	112	112	112	0	0	0	0	0
Accumulated	112	225	337	450	0	0	0	0	0
Routine Maintenance	0	112	225	337	360	360	360	360	360
Periodic Maintenance	0	0	0	0	90	90	90	90	90

Size of Network (Km.) that Could be Rehabilitated and Maintained Huista									
Number of Kilometers	Duration of Project				Maintenance cycle				
	1 year	2 year	3 year	4 year	5 year	6 year	7 year	8 year	9 year
Rehabilitated	121	121	121	121	0	0	0	0	0
Accumulated	121	243	364	486	0	0	0	0	0
Routine Maintenance	0	121	243	364	389	389	389	389	389
Periodic Maintenance	0	0	0	0	97	97	97	97	97

Source: Bank staff estimates

Objective 3: Examining the causes of Fiscal Deficits. The analysis suggests that the financial resources available to the Associations in Huehuetenango (MAMSOHUE and Huista) for the new project are more than adequate to cover the estimated costs. However, some of the municipalities in these Associations face some financial problems. This section of the analysis will examine the income and expenditure structure of these municipalities to determine the source of their financial difficulties. A comparison of per capita (budgetary) income and expenditures of municipalities with budgetary problems and the averages of the Associations was used to identify the areas of fiscal imbalance.

These results show that for MAMSOHUE the financial problems are better explained by the structure of expenditures than by the income structure (see table 6). For example, the municipality of San Juan Atitán finished the year 2000 with an overall fiscal deficit of 583,615 Quetzales. When comparing San Juan Atitán's budgetary *income* per capita with the average budgetary income per capita of all municipalities in MAMSOHUE, there is no significant difference. However, when comparing the budgetary *expenditure* per capita, San Juan Atitán at 347 Quetzales is about one-third (37%) higher than the average budgetary expenditure per capita of the MAMSOHUE at 253 Quetzales.

Table 15.6:

MUNICIPAL FINANCIAL STRENGTHENING	
Necessary Adjustments to the Expenditure Structure*	
-- MAMSOHUE --	
1. Average per capita expenditure of all Municipalities in MAMSOHUE	253 Quetzales
Per capita budgetary expenditure of sample municipality: San Juan Atitán	347 Quetzales
Required structural adjustments: San Juan Atitán	37 Percent

*In 2000.

In the case of HUISTA, the fiscal difficulties are better explained by the structure of income than by the expenditure structure (see table 7). For example, the municipality of La Democracia finished the year 2000 with an overall fiscal deficit of about 3.9 million Quetzales. In this case, there is no significant difference between the budgetary *expenditures* per capita of La Democracia when compared with the average budgetary expenditures per capita of all municipalities in HUISTA. However, when comparing the budgetary *income* per capita, La Democracia at 121 Quetzales is about 43% below the average income per capita of the Huista at 212 Quetzales.

Table 15.7:

MUNICIPAL FINANCIAL STRENGTHENING	
Necessary Adjustments to the Income Structure*	
-- Huista --	
1. Average per capita income of all Municipalities in Huista	212 Quetzales
Per capita expenditure of sample municipality: La Democracia	121 Quetzales
Required structural adjustments: La Democracia	43 Percent

*In 2000

From the results described in this section, it is clear that the municipalities of San Juan Atitán and La Democracia will have to undertake a structural adjustment plan, due to weaknesses of their expenditure and income structures respectively. It is worth noting that San Juan Atitán not only has a deficit problem, but, in addition, did not allocate resources to the transportation sector in 2000. A more detailed financial analysis of these municipalities will allow identification of the specific areas requiring greater attention. Accordingly, an agreement would then need to be reached with the municipal authorities to define a relatively short-term program of fiscal and financial adjustment to ensure their successful participation in the project.

INFOM is the institution that is best suited to contribute to the design, instrumentation, and supervision of this type of municipal program of fiscal and financial structural adjustment. A program of technical assistance would have to concentrate not only on fortifying municipal income, but also reducing fiscal expenditure in general and investment expenditure in particular. However, to guarantee the full success of the project, INFOM has agreed to offer financial assistance (in the form of bridge-loans in exchange of agreeing to a budgetary restructuring) to those municipalities that could potentially have difficulties making their expected monetary contributions to the project. By agreeing to do this, INFOM recognizes the importance of the project's impact in improving the living conditions of the people living in the befitted areas.

Conclusions and Recommendations

The 2000 results suggest that the great majority of the municipalities (86%) will not have difficulty absorbing the project expenses of rehabilitation and maintenance. Nevertheless, some municipalities (14%) have had difficulty balancing their budgets in 2000 and closed the year with a net total deficit in their financial operations. The deficits have been due, in most cases, to exogenous factors rather than to municipal financial handling. However, in a smaller number of municipalities, the deficit situation of local governments is due to internal financial management deficiencies on the part of the municipalities.

The municipalities of association MAMSOHUE will require closer monitoring than those of HUISTA, which have shown better financial results, with the exception of La Democracia whose problems can generally be attributed to low income levels. However in the case of La Democracia, it is important to remember that this analysis uses figures from two years ago so that fiscally La Democracia may or may not be experiencing fiscal problems of this magnitude. To redress this issue, a more detailed municipality analysis will be subsequently undertaken. Nonetheless the municipality's mayor is committed to a budgetary restructuring of his own initiative to ensure counterpart funds to participate in the project and has accepted the 'declaration' of the first package which contains road segments in the municipality.

¹Calculated at a 1999 exchange rate of Q7.82 per \$1.

²Calculated at a 2000 exchange rate of Q7.73 per \$1. in 2000

³Calculated at a 2001 exchange rate of Q8.0 per \$1.

Additional Annex 16: Social Assessment GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT

Taking into account that the majority of the population in the area of influence of the project is of Mayan descent, a Social Analysis and Assessment was carried out to obtain a detailed analysis of the regional characteristics of the project area¹. The preparation of this study encouraged community participation in the selection of roads to be rehabilitated under the project and facilitated the identification of project impacts. Based on this assessment, a Social Management Plan was prepared with the goal of maximizing the positive impacts of the project and to mitigate potentially adverse effects. This annex summarizes the results found in the Social Impact Assessment.

Objectives and Methodology

The main objectives of the Social Impact Assessment were the following:

- Prepare a socioeconomic and cultural diagnostic of the MAMSOHUE and HUISTA regions;
- Consult with local community leaders and residents regarding the road sector improvements that will form part of the optimal core road network;
- Assess the benefits and the potential adverse impacts of the project; and
- Design a Social Management Plan.

The information found in the social impact assessment was based on field visits, surveys among local groups at municipal government areas and villages, personal interviews with municipal officials, representatives from civil society groups, community leaders and residents, and an extensive review of secondary source materials. In all, 394 residents were surveyed and 66 focus groups were conducted, representing more than 10 per cent of the small towns of the region and 1 percent of the total population. Table 1 summarizes the regional characteristics, the coverage of the social impact assessment, and the expected project beneficiaries of the first package of project works.

Table 1: Regional Characteristics and Project Beneficiaries in the Huista and Mamsohue Regions

Regional Characteristics		Mayan population	Coverage of the Social Impact Assessment	Project beneficiaries for the first works package
Mamsohue Region	<ul style="list-style-type: none"> ● 285,439 inhabitants ● 511 population centers ● 13 municipalities ● 143 villages ● 317 caseríos and ● 26 cantons ● 11 parajes and 1 	<ul style="list-style-type: none"> ● 199,222 (or 69.8 percent) 	<ul style="list-style-type: none"> ● 238 residents ● 42 focus groups ● 13 community leaders ● 75 population centres in 4 months 	<ul style="list-style-type: none"> ● 64,127 beneficiaries (22.5 percent) ● 44 population centers (23 villages and 21 caseríos)
Huista Region	<ul style="list-style-type: none"> ● 211,106 inhabitants ● 362 population centers: ● 8 municipalities ● 123 villages ● 205 caseríos ● 24 cantons ● 1 plantation and 1 	<ul style="list-style-type: none"> ● 156,383 (or 74.1 percent) 	<ul style="list-style-type: none"> ● 156 residents ● 24 focus groups ● 8 community leaders ● 54 population centers in 4 months 	<ul style="list-style-type: none"> ● 50,070 beneficiaries (23.7 percent) ● 45 population centers (24 villages and 21 caseríos)
Total	<ul style="list-style-type: none"> ● 873 population centers ● 495,545 inhabitants 	<ul style="list-style-type: none"> ● 355,605 (or 71.8 percent) 	<ul style="list-style-type: none"> ● 394 residents ● 66 focus groups ● 21 community leaders ● 129 population centers 	<ul style="list-style-type: none"> ● 114,194 beneficiaries ● 89 population centers

Source: FUNCEDE, 2002

Socioeconomic and Cultural Assessment

The project areas of influence within Huehuetenango include the MAMSOHUE and HUISTA regions. The MAMSOHUE region is located in the southern part of Huehuetenango and has an area of 2,086 km². Mamsohue includes the municipalities of Malacatancito, Santa Bárbara, San Sebastián Huehuetenango, San Juan Atitán, San Rafael Petzal, Colotenango, San Gaspar Ixchil, San Idelfonso Ixtahuacán, Cuilico, Tectitán, San Pedro Necta, Santigo Chimaltenango, and La Libertad. The HUISTA region has a total area of 2,024 Km², which includes the municipalities of Nentón, Santa Ana Huista, San Antonio Huista, Jacaltenango, Concepción Huista, La Democracia, San Miguel Acatán, and Todos Santos Cuchumatán.

According to the most recent census undertaken in 2002 by the National Statistical Institute (*Instituto Nacional de Estadística, INE*), the total population of the Huehuetenango Department is 932,865 or roughly 7.8 of the total population of Guatemala. The MAMSOHUE and HUISTA regions account for more than half of the total Departmental population. Roughly 70 percent of the population in the project area is of Mayan descent are primarily involved in subsistence agricultural production. The system of local government is largely community-based. In the MAMSOHUE area, the Mayan population speaks Mam or Tektiteko and about 20 percent of the population are unfamiliar with Spanish. The distribution of Mayan communities in HUISTA is relatively mixed. Some communities have an Mayan population of 90 percent, while in other communities, which are located near the main road linking Guatemala with Mexico, this rate is closer to 20 percent. The Mayan population speak a variety of languages, including Mam, Akateko, Kanjobal, Jakalteko, and Poptí, with a number of residents able to speak more than 1 language. The overall rate of non-Spanish speakers in HUISTA is unavailable.

Table 2: Physical, Demographic and Social Characteristics of the Huista and Mamsohue Regions

	Mamsohue	Huista
Physical Characteristics	Steep and rolling hills, humid and subtropical	Mostly mountainous, with wooded and low mountainous farming areas and, humid and temperate sub-tropical areas
Population	285,439 total inhabitants	211,106 total inhabitants
Density	137 inhabitants/km ²	104 inhabitants/km ²
Population growth rate	2.95% per year	2.50% per year
Rural/urban distribution	86% rural, 14% urban	82.5% rural, 17.5% urban
Main economic activities	Subsistence farming, handcrafts at small scale	Agriculture, livestock farming
Agricultural production	Beans, corn	Apricots, beans, cardamom, chili peppers, citrus, cocoa coffee, corn, garden produce, pears, tomatoes wheat
Percent under 20 years	62.7%	60%
Average life expectancy	N/A	68 years
Infant mortality rate	N/A	3.41 per 1000
Poverty rate	92.4% are under the poverty rate, 63.5% are in extreme poverty	91.8% are under the poverty rate; 50.5% live in extreme poverty
Literacy rate	42.7%	78.4%
Elementary school education	69%, with 8.4% desertion rate	71.3%
Average distance to education and health care services	2 km education 8 km health care	N/A
Access to infrastructure services	Electricity, 59% Potable water, 46%	Electricity, 54% Potable water, 33.2%
Expected project beneficiaries	23 villages, 21 country houses. An estimated 64,127 beneficiaries (23 percent of the total population)	24 villages, 21 country houses, and 4 farms. An estimated 50,070 beneficiaries (24 percent of the total population)

Source. FUNCEDE, Social Diagnostic, 2002

Most of the population does not have access to potable water, sewerage services, and telecommunication infrastructure. Access to health care services is also extremely poor, with very few health care facilities that are spread out through the Department. Most health care facilities have a shortage of qualified medical staff and equipment. Although most of the urban areas have an elementary school, there are very few secondary schools in the area. Access to educational services is also very low, as students have an average walk of 2 km in the MAMSOHUE region. Moreover, the poor condition of the unpaved road network strongly limits to health and educational facilities, especially during the rainy season when the roads become largely impassible. The high level of poverty in the region is also related to the poor quality of the native soil, the erratic pattern of rain, and the difficult topography that reduces access to markets and social services.

Social Organization

Communities in both regions are relatively well organized, with an average of 4 associative entities in the larger population centers. In communities with large Mayan populations, two types of community organizations have been identified. These include: (a) formal organizations that have been created and recognized by the Government and are governed by the underlying legal and regulatory framework in the country; and (ii) traditional organizations, which typically are not legally recognized but have significant legitimacy within their respective communities.

In the municipalities and population centers with large Mayan populations, decision-making and conflict resolution is typically based on achieving a general consensus. Most population centers have permanent *Pro-mejoramiento* Committees that conducts assemblies, where community level decisions are reached regarding specific issues. Disputes are resolved using the following mechanisms: (a) community assemblies, (b) municipal mayors; and c) municipal boards.

Infrastructure and Social Services Needs Reported by Residents of HUISTA and MAMSOHUE

Roughly 180 infrastructure subprojects were presented and discussed with residents in the HUISTA region. Based on the surveys and interviews data, residents placed the highest priority on improving the provision of potable to drinking water (32%), improving the road network (22%), and the implementing minor irrigation sub-projects (18%). Similar results were achieved in MAMSOHUE, where out of 298 subprojects priority was given to improving roads (35%), health centers (24%) and improving access to potable drinking water (21%). In both mancomunidades, 87% of the respondents believed that significant improvements to the area roads would be highly beneficiary to the community.

Current road transport conditions

Existing road conditions in the MAMSOHUE and HUISTA regions is extremely poor, as roads are barely passable using all-terrain vehicles during the summer and completely impassable during winter rainy seasons. Moreover, the existing system for inter-urban transport is extremely weak, as most of the buses go along the main road through the Departmental capital and the Mesilla. At present, more than 60 percent of the population in both regions uses pick-up trucks that have a maximum capacity of 20 people.

Table 3: Accessibility and Transport Infrastructure for Selected Departments, Guatemala, 2000.

	San Marcos	Huehuetenango	Quiche	Baja Verapaz	Alta Verapaz	Rest of the country	Average over targeted departments*
No. of Sampling Units	24	65	26	18	44	301	
No. of Households Sampled	233	617	246	197	465	3086	
% HHs without passable roads	16	21	19	13	20	11	19
% HHs without public transport	63	68	48	42	73	48	63
% HHs experiencing road closures	14	24	38	24	38	28	31
Time taken to get water, min	15	14	14	8	14	13	13
Distance traveled to get water , km.	0.4	0.3	0.3	0.2	0.5	0.2	0.3
Time taken to get wood , min.	79	74	82	83	59	58	72
Distance traveled to get wood, km.	1.4	1.6	1.7	2.2	1.8	1.2	1.7
Time taken to reach a health care facility, min)	49	51	29	88	48	47	51
Time taken to reach work, min.	29	48	31	44	37	46	42
Distance traveled to reach market, km	8	10	7	3	9	8	9
Time to reach market, min.	72	66	61	29	72	41	62

Source World Bank calculations using ENCOVI 2000, Instituto Nacional de Estadística, Guatemala

Notes: Time and distance are measured in minutes and are one way. Time taken to reach a care health facility is calculated for individuals who visit a health facility. A health facility can include public hospital, hospital or clinic of the IGSS, a private hospital, a health center, a health post, a community center, a private clinic or a private consultation, a private pharmacy or a state pharmacy. It excludes the amount of time needed to take care of individuals at their own home or at other homes

Consultative Process

The project has placed a strong emphasis in incorporating the views of local community members and municipal associations in developing the “core” network of roads and in determining the roads to be rehabilitated and maintained under the project. In conjunction with INFOM and DGC, the Bank has worked closely with the *mancomunidades* (coordinating entities that represent two or more neighboring municipalities) in HUISTA and MAMSOHUE regarding the selection and the implementation of project activities within their respective jurisdictions. Several meetings were conducted with the mayors of the two Mancomunidades to: (i) analyze and discuss the characteristics and the scope of the project; (ii) identify and select the core network of roads to be maintained; (iii) disseminate the Bank’s safeguard policies; and (iv) analyze the results of the environmental impact assessment and the mitigation measures.

The consultation process with communities were carried out from March to July 2002 through surveys, focus groups, and interviews with representatives from civil societies, NGOs, community leaders, and area residents to better assess the specific investment needs of the communities in the project area. A broad consensus was reached regarding the overall need to improve transport access, and the labor-intensive technologies in road works.

The roads proposed by the local authorities and the communities were evaluated on technical grounds by DGC and consultants. Road works to be carried out were evaluated and ranked according to local preferences using the formula established in the Index for Road Selection (*Índice de Selección Vial, ISV* - See Annex 4). The final results of the process form the “optimal road network” which will be implemented in four separate packages over the next four years. Roughly 148 of the 156 road works (96.1 percent) selected and prioritized by local residents are included in the project. Road rehabilitation works not included generally had sufficient financing from other sources. The first package of works, planned for 2003, involve a total of 39 rural road segments, which were built primarily using community resources. These roads are accessible with all-terrain vehicles and only during summer months. From a

social perspective, the area of influence includes local residents who live or work within 3 km from the central axis of the road segment covered under the project. Table 2 summarizes the 4 road packages that will make up the “optimal road network” by location, number of road segments, and length.

Table 4: Rural Roads Comprising the Optimal Road Network

Optimal Road Network	Number of road segments		Length (km)	
	Mamsohue	Huista	Mamsohue	Huista
1 st package of works	20	19	126.5	145.5
2 nd package of works	18	23	133.4	122.0
3 rd package of works	20	15	90.5	72.7
4 th package of works	20	13	86.2	56.6
Total	78	70	436.6	396.8

Source: DGC-INFOM-Consultants, August 2002

Social Impact Assessment and Expected Project Benefits

The Social Impact Assessment was based on a diagnostic of socio-economic and cultural characteristics of the area of influence of the project. By and large, the project is expected to have an extremely positive impact on the region. The project is expected to improve rural access, increase mobility, and reduce transport costs. Road rehabilitation, maintenance, and improvement works will guarantee all-year passage and encourage the extension of public and private transport services. The project is also expected to have the following benefits for residents living in the project area; (i) improvements to the rural road network to improve access and social services, such as health and education; (ii) rehabilitation of the secondary and department road network to provide better connections between rural and trunk roads; (iii) increased employment opportunities in rural areas; (iv) institutional strengthening program to improve the management of rural roads; and (v) improved social cohesion. The project will also support the development and provision of road safety courses for school instructors, who will disseminate this information to their students.

According to the population surveyed, the expected advantages from improving selected roads includes:

- Decreased level of isolation during winter months;
- Increased production, which is presently limited by transport bottlenecks;
- Decreased transport costs and reduced travel times;
- Fostering of private investment in the region;
- Lower costs of supplies for agricultural production and general merchandise;
- Improved availability of bus service;
- Improved links with hospitals and health centers;
- Reduced number of absentee teachers and pupils;
- Facilitate the attendance of secondary education in the larger towns;
- Improved telephone communications and other public services; and
- Increased tourist promotion.

None of the proposed works involve the development of new roads nor the widening of existing roads. As a result, none of the planned road works are expected to result in the population resettlements.

Potential adverse impacts identified include: (i) higher accident rates; (ii) possible damage to private property during works construction; and (iii) possible damage to local religious sites. Suitable mitigation measures have been delineated under the Social Management Plan.

Social Management Plan

The Social Management Plan seeks to ensure the positive impacts of the project are achieved as well as prevent and mitigate potentially adverse impacts. A Social Management Plan, which will be implemented by INFOM and the *mancomunidades*, consists of three main programs: (i) dissemination and social awareness; (ii) respect for local religious sites; and (iii) a road safety program.

1. Dissemination and social awareness

- a. **Dissemination of the Social Management and Environmental Management Plans.** Through seminars, INFOM will disseminate to the *mancomunidades* the characteristics, the progress achieved, and the social and environmental mitigation measures. The *man-comunidades* will then pass on this information to the community assemblies.
- b. **Dissemination of the Progress Achieved in Project Implementation.** The participation of community leaders of the *mancomunidades* is essential for the success of this project. Community leaders are expected to promote and disseminate the objectives and the expected benefits of the project to local community assemblies.
- c. **Prevent and limit damage.** Civil works contracts will include clauses that guarantee that contractors are held responsible for any damages and financial losses caused during works implementation. Defined enforcement mechanisms and procedures will be circulated to communities so that local residents are aware of these safeguards as well as the relevant enforcement procedures, if necessary.

2. Protection of local religious sites

- a. **Sensitivity training to workers.** Training seminars will be conducted and general guidelines will be issued to contractor employees to ensure that the norms governing the protection of the environment and local religious sites are upheld.
 - b. **Protection of religious sites.** Roughly 3 sites were found near planned road works that of religious significance to the local population in the region. The tender documents for civil works contracts for these projects will outline the procedures for protecting these sites. Strict monitoring and oversight as well as effective enforcement will be carried out throughout implementation to ensure compliance. Contractors will be assessed severe penalties in the event of non-compliance. In addition, a road education program will be developed to limit accidents in the areas near protected sites.
3. **Road Safety.** In coordination with local authorities, there will be annual seminars on road safety during two consecutive years. These seminars will be designed primarily for school teachers and will focus on road safety in road crossings and intersections and how to teach road safety to their students using practical examples.

Institutional Arrangements

INFOM will disseminate subproject characteristics, current subproject status, and mitigation measures to minimize potentially negative social and environmental impacts through workshops and community assemblies. INFOM will also develop and public awareness campaigns. These activities will be coordinated with the *mancomunidades*. INFOM will assign qualified technical personnel to monitor and oversee the implementation of the Social Management Action Plan. Table 5 outlines the components, costs, sources of financing, and evaluation indicators of the Social Management Plan.

Table 5: Components, Cost, and Evaluation Indicators for the Social Management Plan

Component of the Social Management Plan	Implementing Agencies	Cost and Sources of Financing	Evaluation Indicator	
1. Dissemination and social awareness		INFOM: US\$4,000 Mancomunicades: US\$3,000		
1.1 Dissemination of the Social Management Plan	INFOM and the Mancomunidades	•	•	Number of meetings Number of participants
1.2 Dissemination to the Mancomunicades	INFOM and the Mancomunidades	•	•	Number of meetings Number of participants
1.3 Preventing potential negative impacts	Contractors, Mancomunidades coordinated by INFOM	•	•	Number of complaints presented Response time between claim and response
2. Protection of local religious sites		INFOM: US\$3,000		
2.1 Sensitivity training to workers	INFOM and the Mancomunidades	•	(i)	Number of workshops
2.2 Protection of local religious sites	Contractors, Mancomunidades coordinated by INFOM	•	(ii) (iii)	Number of sites preserved Numbers complaints made regarding the management of sacred sites
3. Road Safety				
3.1 Road safety education	INFOM and the Mancomunidades	INFOM. US\$4,000	•	Number of road safety seminars Total number of accidents Accident rate

Estimated Budget

The estimated project to implement the Social Management Plan is approximately US \$14,000 for each package of road works or US\$56,000 during the entire project implementation period.

¹. The Social Assessment was carried out by the Centro-American Foundation for Development (*Fundación Centroamericana para el Desarrollo* –FUNCEDE)

**Additional Annex 17: Environmental Assessment
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT**

The Second Rural and Main Roads Program (RMRP) builds upon the model established under the San Marcos Rural Roads Pilot Project (SMRRPP). Based on this experience, this project has incorporated new elements that will improve environmental supervision and performance. These elements include: (i) a more upstream analysis of environmental issues; and (ii) the introduction of environmental issues in defining a national level Rural Road Strategy to improve long term environmental sustainability of the project.

A checklist of environmental and social issues relating to rural roads, which includes all the Bank's Safeguard Policies, has been developed for the project. Based on this checklist, a comprehensive analysis was carried out for the first package of works proposed under Phase 1 of the project—the HUISTA and MAMSOHUE Associations in the Department of Huehuetenango. A sample of 5 main roads and 19 rural roads subprojects (out of 39 subprojects) that will be started in year one of project implementation were selected for this review. In this manner, 24 of 44 subprojects (55 percent of the total) contained in the first year package were visited and screened for potential environmental effects.

Project activities

Most of the potential environmental impact will be located directly along the rights-of-way of the roads rehabilitated under the project. The potential environmental impact as a result of the project may be caused by a combination of the following factors:

a. Pre construction activities:

- Building and operating camps;
- Moving machinery and equipment during construction;
- Designating areas for borrowed materials banks;
- Designating waste areas for the material generated during slopes cutting;
- Construction of access roads to burrow pits and quarries, if necessary;
- Clearing of vegetation; and
- Transportation of fuels and lubricants to work sites.

b. Construction activities:

- Constructing burrow pits and quarries;
- Hauling away waste and other construction materials;
- Verifying earthworks where a road is going to be widened or modified;
- Building terraces at slopes and filling where the road is going to be widened or modified;
- Carrying materials to waste deposit areas;
- Digging 30 centimeters to eliminate waste materials (e.g. organic soil, vegetative residues, etc.)

- Reconditioning the base with stones, as needed;
- Placing surface material (a double surface treatment/paving for main roads and ballast for rural roads);
- Drainage works (e.g. ditches, vaults, culverts, etc.) This project does not includes bridge works;
- Placing of road signs; and
- Worksite activities (e.g. administration, storage, warehouse, and equipment workshops, etc..)

c. Restoration activities:

- Mending, leveling, compacting, and reforesting areas used as borrow pits or material banks.
- Leveling, compacting, and reforesting waste disposal areas; and
- Clearing rights of way at the end of the works.

Environmental impacts

The project entails the rehabilitation and improvement of existing rural and main roads. Based on this design, it is not anticipated that the project will have any significant environmental impacts that could jeopardize the natural environment in its area of influence. Accordingly, the project has been classified as a "Category B" project purposes. In addition, the civil works projects planned under the project will not require carrying out major changes in road characteristics, such as road widening or changing the alignment. Therefore, involuntary resettlement of population is also not expected.

In the past, inadequate design and poor construction techniques have resulted in serious environment degradation, including erosion, sediment loads, and encroachment. The proposed project will improve existing environmental conditions by introducing improved road design and construction techniques, and promoting environmental and social sustainability in the rural roads sector. The main conclusions reached regarding an extensive analysis of the first-year works include:

- In general, it is unlikely that the sub-projects proposed by RMRP will jeopardize the natural or social environment, as these projects focus exclusively on rehabilitation works.
- Civil works sub-projects will take place along existing roads, which have relatively optimal construction characteristics and precludes the widening of existing roads. Similarly, there are no changes foreseen in the road alignment. In addition, no supplementary works are planned that could affect the direct area of influence area of the proposed subprojects.
- The deforestation of zones alongside the road is expected to be extremely limited. Consequently, reforestation activities along the roads financed under the project are expected to be minimal. Reforestation will be only necessary in the recovery of borrow pits and disposal sites.
- Not only does the project possess minor environmental risks, but will also support the improvement of existing environmental conditions. The project will provide resources to encourage the recovery of degraded areas, e.g. the improvement of eroded zones, slope stabilization, etc., which were caused during the original construction.

- Most of the roads visited lack quarries or material exploitation areas, which is why most of the environmental mitigation measures will likely involve reducing the impact caused by borrow pits and quarry exploitation. Because the project emphasizes financing low-cost works, it will be necessary to minimize the cost of hauling materials by encouraging contractors to find material sources close to road works that meet current standards. In this manner, contractor supervision is very important to ensure that the selected sites are close to the work sites to reduce potentially negative environmental impacts. It is also important to insist upon the use of good practices and sanctioned measures in the exploitation and subsequent restoration of project areas.
- To the extent possible, the project will promote community participation in carrying out reforestation works in order to expand income generation opportunities and increase ownership among the local population.

Environmental Management

Environmental supervision: An important strategy for ensuring environmental sustainability of the project is the development of adequate supervision mechanisms of civil works subprojects. One approach would be to require at least one environmental specialist in the terms of reference for environmental supervision firms.

Institutional strengthening: The project will also require that the environmental unit within the implementing agency has attracted qualified staff and has obtained the necessary equipment to satisfactorily carry out environmental supervision and monitoring activities. To this end, the project will finance the following activities: (i) strengthening of the environmental management capacity of sector institutions, especially the Environmental Unit within DGC (Dirección de Gestión Ambiental - DGA); and (ii) strengthening the environmental supervision of road construction activities.

Meeting national environmental standards: In carrying out project due diligence, the Bank will require evidence that each subproject meets the environmental norms and regulations established by the Environment and Natural Resources Ministry (ENRM). The ENRM has developed a checklist and related requirements for each subproject to ensure adequate environmental management during the project life cycle.

For road projects, the environmental authority requires the preparation of an Environmental Report (ER), which identifies and summarizes the potential environmental and social impact of each subproject. The next step would be the preparation of an Environmental Mitigation Plan (EMP), which delineates in greater detail the potential environmental impact of the project as well as the intended mitigation measures, including budget and timetable for implementing the EMP. ERs for the rural and main roads were developed with the technical support of the DGA, and were officially delivered to each one of the Huista and Mamsöhue Community's Mayors at a meeting chaired by INFOM. To initiate the environmental review process, the Mayors of these communities delivered the ERs for rural roads to the ENRM Delegation Representative in Huehuetenango. The ERs for main roads were delivered directly by DGC officials to the ENRM Delegation Representative. The environmental authority approved the first-year package presented by DGC and the municipalities (Of. No. 238-02/MARN-Htgo) in October 2002.

Presentation of the Environmental Evaluation to the Civil Society

To ensure the application of the Bank's Safeguard Policies related to O.P 17.50, a workshop with the participation of approximately 30 representatives from 18 different organizations (e.g. NGO, municipalities, universities, governmental institutions, etc). The purpose of the October 2002 workshop was to provide and disseminate information regarding the Bank's environmental and social policies and due diligence process. Several recommendations were received during the workshop, which have been incorporated in development of the project. These recommendations include the active participation and ownership of all project actors and the development of an adequate communication strategy. This is a critical and innovative feature of the project, which will translate into the improved development and implementation of the project objectives.

Environmental Mitigation Plan (EMP)

EMPs will delineate environmental mitigation measures, such as slope stabilization, the restoration of burrow pits and material deposit areas, contractor supervision, controlling earthwork management and existing erosion processes, and carrying out drainage works. Road and pedestrian safety and other issues will be taken into account during subproject design. The EMPs will ensure adequate environmental management throughout the subproject life cycle. These measures will be included in an *Environmental Manual for Road Design and Construction*, which was prepared by the DGA, and will form part of tender documents and contracts provided to bidders. The environmental manual will address the following issues:

Potential Impacts Along right-of-way	Mitigation Measures
<p>a. Generated residues and/or polluting agents.</p> <p>Atmospheric emissions: Emission can be caused by (i) the use of machinery and equipment, which release gases created as a result of fuel combustion; (ii) detonating material banks; and (iii) hauling materials. The latter two activities will generate dust particles, which may produce respiratory illness to workers or inhabitants in the direct area of influence</p> <p>Sewage discharges: Inadequate handling of excrement coming from worksites, which might contaminate the ground and nearby water sources</p> <p>Lubricants discharge: Equipment used during construction, e.g. tractors, dump trucks, water trucks, and compressors, etc., will require maintenance. The inappropriate disposal of lubricants might contaminate superficial or underground water sources.</p>	<p>The equipment used must be in perfect working condition, and must have filters to reduce emissions. During the transport of materials, the filters should be covered with canvasses to avoid the dispersion of fine particles to neighboring areas. Another important measure will be treating the road under construction with adequate humidity contents to limit the amount of dust dispersed. It is very important for all field staff to use masks to avoid respiratory infections.</p> <p>The project will require the installation of latrines or septic tanks at project worksites at a ratio of one for every ten workers. These facilities will be placed as far as possible from riverbeds or water sources to avoid having contact with the water table.</p> <p>Harnessing tanks will be built for treating lubricants at the project worksites. Later on, these residues will be collected and deposited inside metal barrels, which will be taken to recycling areas.</p>
<p>b. Archeological Sites: There may be archeological treasures uncovered in the project's area of influence, which includes indigenous communities and areas with significant cultural and historical interest</p>	<p>Prior to commencing project works, it will be necessary to survey the area of influence and gather detailed information to determine the presence of archeological sites or places with high levels of cultural importance. This assessment will be carried out in conjunction with the Anthropology and History Institute (IDAEH).</p>
<p>Solid Waste:</p> <p>c During the construction and implementation, there may be solid waste residues caused by the removal of the rolling coat, machinery filters, used supplies, used spare wheels, oil containers and waste produced by the field workers</p>	<p>Regarding the removal of the rolling coat, it is necessary to determine if recycling is an option in order to reuse the materials removed. This will reduce the size of quarry and a waste area may not be needed. Spare materials left at the worksite will be collected and taken to recycling sites and/or re-used industrially. In any case, project will monitor the construction site to ensure that solid waste is not left at clandestine or municipal waste areas.</p>
<p>d. Noise and Vibrations: Noise can be generated by construction machinery during the preparation of work sites, the detonation of material banks, and road rehabilitation works. Noise can affect workers and inhabitants from neighboring communities.</p>	<p>Construction equipment should be in good condition to minimize sound waves and noise emissions. Workers should use special protective equipment. Implementation of road works are expected to take place only during the day.</p>
<p>e. Visual Impact: A poor choice of the work areas, inadequate banks, or the lack of waste can negatively alter the landscape. Project activities will also involve removing vegetation alongside the roads and placing rolling coats</p>	<p>The camp should be located where visual fields will not be affected, or where there are vegetable curtains can ease the visual impact. In many places, the landscape where the works will be carried out have natural and scenic value. It will be necessary, therefore, to monitor that the landscape resembles original conditions, including the reforesting of native species.</p> <p>The location of material banks will be a determining factor. Due to the road's topographic conditions, poor location choice will affect the landscape. Therefore, the project will ensure that there will be a reforestation of native species, immediately after finishing extraction works.</p> <p>The mitigation measures for waste areas are also very specific. First, it will be necessary to select an adequate location, since the topography makes material placement difficult. Placing material along the sides of the road or on farming areas should be avoided, as well as at or near water sources. If necessary, contention structures will be built to avoid materials from sliding.</p> <p>Removing vegetation should be limited to the 9.5 m required for the road improvement. Recovery activities should be implemented at the affected areas by seeding with native species.</p>
<p>f. Protected Areas: Based on a review of registers and maps of protected areas, there are not any known protected areas along the road section</p>	<p>No mitigation measures will be needed, since there aren't any protected areas close to the subprojects</p>

Environmental budget:

The environmental budget includes the cost of: (i) environmental mitigation measures that is included as part of the subprojects cost, and (ii) institutional strengthening for Environmental Unit within DGC. The estimated cost of carrying out environmental mitigation measures for rural roads is US\$ 456.181, which represents 2.8% of the total cost of these works. For main roads, the cost of undertaking mitigation measures is US\$ 720.450, which represents 4.3% of the total cost of these roads. The institutional strengthening of the DGC is estimated at US\$ 50,000, which will be used primarily for project monitoring and supervision activities. In this context, the total estimated budget for the project for environmental activities is US\$ 1,306.631, representing 4.0% of the total amount of the subprojects.

Environmental strategy for the rural road sector in Guatemala

As part of ongoing project preparation, a Strategy for the Rural Road and Transport Sector has been prepared for Guatemala. This strategy includes long term environmental and social sustainability issues and is based on: (i) defining an environmental and social policy for rural roads in Guatemala to minimize encroachment of natural habitats and targeting the rural poor; (ii) improving road design and construction practices through the development of an environmental manual for design and construction and improved supervision; (iii) the promotion of community participation in the definition of sector priorities; (iv) ensuring long term maintenance of rehabilitated roads through community enterprises; and (v) strengthening environmental management of key sector actors.

Additional actions to undertake

With the objective of ensuring environmental and social sustainability of the project, the following environmental requirements have been established, which should be included in the loan agreement.

- During the Mid-Term Review, provide evidence that the DGA has been strengthened; and
- Prepare Monthly Progress Reports regarding the progress achieved regarding the development of EMPs for rural and main roads financed by the project.

**Additional Annex 18:General Framework for Resettlements
GUATEMALA: SECOND RURAL AND MAIN ROADS PROJECT**

**Plan Gerencial para el Manejo de Reasentamientos
(Octubre de 1997)**

Documento elaborado por la Dirección General de Caminos

1. Presentación

El presente documento ha sido elaborado con el objeto de presentar los lineamientos generales para el manejo de reasentamientos, dentro del marco de ejecución de los distintos proyectos viales a cargo de la Dirección General de Caminos, específicamente aquellos que requieran la planeación y el manejo de reasentamientos, generados por desplazamientos involuntarios de población causados por el impacto que genere la ejecución de cualquier proyecto vial.

2. Introducción

En el marco de la ejecución del Plan de Inversiones 1997-2000 de la Dirección General de Caminos, se ha contemplado la rehabilitación, mejoramiento y modernización de la red vial del país con el propósito principal de reducir los costos generales de transporte, proporcionar comodidad y satisfacción en el transporte de productos y personas, así como mejorar la calidad de vida de la población y promover la productividad y competitividad de los diferentes productos a nivel nacional e internacional.

En este contexto, se ha considerado la creación de una Unida de Trabajo Social, dentro de la Asesoría Jurídica de la Dirección General de Caminos, con el objeto de que dicha Unidad coadyuve a la realización de las actividades de planificación, gestión y ejecución de los proyectos viales, mediante el desarrollo de una investigación de la situación socioeconómica de los habitantes que residen en los alrededores del derecho de vía de la red vial nacional y su posible afectación por el impacto generado por la ejecución de cada proyecto vial en particular.

3. Justificación / Antecedentes

Las condiciones socioeconómicas de la mayoría de los habitantes en el área rural son precarias y su desarrollo económico es limitado, lo cual ha generado la existencia de invasiones al derecho de vía y la respectiva habilitación de viviendas, negocios populares y otro tipo de construcciones, que a través del tiempo han pasado a ser parte del área urbana.

La anterior situación ha obligado a que en el momento de planificar y gestionar la ampliación y mejoramiento de la red vial se tengan que formular diferentes planes de reasentamiento, que incluyan entre otros, un plan de actividades necesarias para propiciar las condiciones favorables de vida a la población afectada por la ejecución del proyecto.

No obstante, para cada caso en particular es necesario realizar una investigación socioeconómica de cada núcleo familiar en donde se estará realizando el proyecto y determinar el impacto particular que será provocado, así como las medidas de mitigación del impacto o su posible compensación, con el fin de que en el momento en que se inicien los trabajos de construcción de la obra civil, la población afectada ya deberá estar reubicada o reasentada en otro lugar, mejorando su antigua calidad de vida o por lo menos que no se afecte su libre locomoción, fuentes de trabajo, salud, educación, vivienda, etc. Asimismo, las compensaciones e indemnizaciones debidas a los afectados deberán haber sido entregadas a manera de

facilitar el resarcimiento por pérdidas materiales y/o económicas causadas.

Esta investigación socioeconómica, así como la formulación del plan de reasentamientos a ejecutar, requieren de lineamientos particulares que satisfagan los requerimientos de las diferentes instituciones financieras que financiarían parcialmente la ejecución de los proyectos.

4. Plan Gerencial para el Manejo de Reasentamientos

Este Plan Gerencial pretende normar las actividades de la Dirección General de Caminos relacionadas con la administración de los diferentes planes de reasentamiento formulados en virtud de la ejecución de proyectos viales, manteniendo coherencia con las directrices generales que el Banco Mundial tiene para los reasentamientos involuntarios consignados en la directriz operacional 4.30 y en consideración a los lineamientos generales siguientes:

4.1 Lineamientos Generales para la Formulación de un Plan de Reasentamientos

Estos lineamientos persiguen proporcionar un procedimiento a seguir cuando, por causa de la ejecución de un proyecto vial (rehabilitación, modernización u ampliación), en todos o alguno de sus componentes, se afecte a un grupo de población y se requiera de la realización de diferentes estudios de campo que comprendan la participación de especialistas de las ciencias sociales, con el propósito de identificar con precisión los impactos a ser generados en la población afectada y formular las medidas de mitigación necesarias o compensaciones/remuneraciones requeridas para mantenerse o elevar el nivel de vida de dicha población y asegurar que las personas desplazadas o afectadas por la construcción o desarrollo de algún proyecto, restablezcan sus condiciones de vida previa al desplazamiento, a través de programas de monitoreo social, diseñados para dicho fin.

Por lo anterior se deberá formular un plan de reasentamientos particular a cada proyecto, que procure evitar, mitigar y/o compensar los problemas ambientales (impactos) generados por el desplazamiento involuntario de la población restituyendo condiciones de vida (económicas, sociales y culturales) igualándolas y/o mejorándolas en la medida de lo posible, considerando que en aquellos casos en que la vivienda inicial de los destinatarios del reasentamiento no cumplan con las condiciones mínimas de seguridad, salud y saneamiento, el plan a formular deberá contemplar la provisión de las mismas.

Cada plan de reasentamientos formulado deberá responder a las características particulares de cada proyecto, de conformidad con las condiciones e impactos generados, sin importar las características propias de la población o comunidad afectada. Los costos relacionados con la formulación de estudios, análisis desarrollo y acompañamiento necesarios para la realización de reasentamientos deberán estar contemplados como parte del costo total del proyecto.

4.2 Principios Básicos

1. Previo a la implementación de un Proyecto vial, se deberá demostrar técnicamente que el proyecto seleccionado ha considerado todas las alternativas viables para evitar reasentamientos involuntarios y/o la minimización de los mismos en casos inevitables.
2. Ni el medio ambiente (degradado como consecuencia de una obra o proyecto que ejerce una carga determinada según a magnitud y la naturaleza de la actividad) ni la población, ni los desplazados directamente por dichos proyectos deben sufrir o pagar los costos de desarrollo.
3. Se debe buscar que las personas a ser reasentadas reciban los beneficios económicos del proyecto durante la ejecución del mismo y el período de monitoreo específico para cada plan de reasentamiento.

4. Los impactos asociados a los desplazamientos involuntarios y sus respectivas acciones de mitigación deberán quedar definidas. Los siguientes son impactos relacionados con desplazamientos involuntarios: alteración de la vida económica (perdida de ingreso, empleo aumentos en costos de vida debido al transporte, impuestos, etc), afectación de la vida familiar (incluida la particularidad de cada uno de sus miembros), desarticulación de las relaciones sociales u otros de orden cultural.
5. Merecerán especial consideración en los procesos de reasentamientos involuntario, aquellos grupos que por sus características propias sean considerados vulnerables. Para tal efecto se deben centrar los esfuerzos de reasentamiento en los siguientes grupos:
 - Comunidades de repatriados localizadas en la región de ZONAPAZ
 - Habitantes de asentamientos y/o localizados en zonas de riesgo en los espacios suburbanos
 - Familias que viven del producto de pequeños negocios
 - Pobladores suburbanos que dependen de la economía informal
 - Hogares humildes sin padre de familia
 - Pequeños campesinos con economía de subsistencia
 - Población en riesgo de marginalización
 - Población analfabeta, minorías étnicas y ancianos
 - En general, todos aquellos grupos de población en riesgo de empobrecimiento y de marginalización de la sociedad, que pueden verse afectados por los desafíos que ofrece el nuevo entorno de localización.
6. La población sujeto de desplazamiento debe ser actor fundamental en el proceso de la toma de decisiones relacionadas al reasentamiento, desde el diseño el Plan de Reasentamientos y durante toda la fase de ejecución del mismo (planificación, formulación ejecución y monitoreo del Plan), favoreciendo la participación de la población afectada en el proceso de toma de decisiones relacionadas con la evaluación de los impactos asociados al desplazamiento voluntario, quienes serán sujetos del proceso de reasentamiento, evaluación de las alternativas de reasentamiento, selección de sitios donde se habrá de ejecutar el reasentamiento, relaciones con la población anfitriona, etc.
7. Es importante indicar que para los casos en que las personas afectadas no sean consideradas vulnerables, en peligro de empobrecimiento o marginalización, las mismas tendrán la oportunidad de escoger indemnización en dinero, al valor de reposición de las viviendas o predios afectados. Los habitantes que poseen el título legal del predio que habitan, tendrán el derecho jurídico de vender su propiedad sin ser reasentados, si así lo eligieran. En dicho caso la vivienda o predio serán compensados a su valor de reposición.
8. Todas las anteriores discusiones deben ser discutidas con amplitud, transparencia y veracidad. De todo el proceso en su conjunto debe quedar documentación que sustente y certifique la participación, por lo que se espera que todos los afectados sean consultados y concertados de todos aquellos efectos o impactos que el reasentamiento mismo conlleva. La estrategia de comunicación deberá tener no sólo un manejo individual, sino también comunitario. En casos especiales se podrán llevar a cabo consultas amplias, como audiencias públicas.
9. La política de reasentamientos será aplicada a todos los afectados independientemente de la tenencia de un título legal que acredite la propiedad del bien. Para cada caso, se establecerá previamente a la ejecución del proyecto, un censo para delimitar quienes serán las personas y familias objeto de ser reasentadas o indemnizadas. Las organizaciones comunitarias pueden aportar información reciente

que verifique la legitimidad de los afectados, para evitar la presencia de personas no sujetas a ser beneficiarias.

10. Definir quienes tienen derecho al reasentamiento, principalmente aquellos que pierden su vivienda, tierra o ambos, acceso a recursos naturales, empleo, ingreso familiar, oportunidades económicas fundamentales para la supervivencia. En general donde hayan alteraciones que provoquen riesgo de empobrecimiento, quedarse sin tierra, sin trabajo, perdida del hogar, marginalización, aumento de la mortalidad infantil causada por el sitio de reubicación, desarticulación social, perdida de acceso a bienes comunes (ríos, mares etc). Todo lo anterior debe estar verificado por estudios de campo.

4.3 Monitoreo y Evaluación

Todo plan de reasentamiento contará con un plan de monitoreo, que contemple la realización de visitas periódicas al nuevo sitio ubicado, informes periódicos de desarrollo de la población, evaluación de las medidas implementadas, problemas encontrados y propuesta de solución a los mismos, formulando un plan de contingencia en el caso de que las medidas planteadas originalmente no hayan obtenido los objetivos propuestos.

4.4 Inventario Social

En virtud de que los planes de reasentamientos a formular tienen su base principal en la información de campo obtenida en estudios participativos, será recomendable detallar y valorar los impactos ambientales particularmente en su dimensión social, precisando los componentes demográficos, económicos, culturales y políticos de la población afectada y posteriormente desarrollar una base de datos (inventario social) que permita actualizar la información obtenida para su aplicación en futuros proyectos.

4.5 Marco Institucional y Jurídico

El marco legal aplicable a reasentamientos está establecido en el artículo 40 de la Constitución de la República y el Decreto 1000 del Congreso de la República de fecha 20 de Agosto de 1953. Para cada proyecto de obra civil a ejecutar, se deberá formular un plan de reasentamientos que dependerá de la magnitud del impacto generado. Será responsabilidad de la Dirección General de Caminos la formulación del mismo, a través del Programa de Gestión Ambiental y la Asesoría Jurídica de la institución, considerando la participación de profesionales de las distintas disciplinas y la consulta y concertación de la población afectada y de las entidades financieras relacionadas con el proyecto, con el fin de garantizar de la mejor forma posible la restitución de lo perdido y lograr beneficiar a la comunidad de las bondades del proyecto.

Este plan de reasentamientos será elevado a consideración de las instituciones financieras de proyecto y dependiendo del tipo de obra a ejecutar (rehabilitación, mantenimiento, mejoramiento o construcción), deberá ser aprobado por la Comisión Nacional del Medio Ambiente, conjuntamente con la Evaluación de Impacto Ambiental realizada para el proyecto en particular.

La ejecución del plan de reasentamientos formulado será responsabilidad de la Dirección General de Caminos y supervisada por el Programa de Gestión Ambiental de la Institución, a través de consultores con reconocida competencia profesional para este tipo de actividades, en coordinación con todas las partes involucradas. Además, el Programa de Gestión Ambiental velará por el completo cumplimiento de las medidas propuestas por parte del contratista responsable de la ejecución del plan de reasentamientos.

5. Objetivos Generales del Plan Gerencial de Reasentamientos

- Concienciar y sensibilizar a la población afectada del beneficio que proporcionará la

- ejecución del proyecto (nacional, local y particular) y el mejoramiento en el nivel de vida proporcionado por la reubicación de viviendas.
- Lograr la participación y aceptación total de la población afectada, así como de los pobladores del área de influencia del reasentamiento para determinar su futura reubicación.

6. Objetivos Específicos

- Formular una política de administración de asentamientos humanos, sostenibilidad ambiental y mejoramiento de la calidad de vida, en el marco de ejecución de proyectos viales, que comprenda un marco económico, social, cultural y político.
- Proporcionar una herramienta que permita la planificación de la distribución equitativa de los beneficios económicos, políticos, sociales y culturales generados por cada proyecto, así como el fortalecimiento de los individuos y comunidades (tanto en sus asentamientos tradicionales, como en aquellos de reciente poblamiento)
- Establecer las áreas específicas en donde se realizará el reasentamiento de los habitantes afectados, para mantener el equilibrio entre ecosistemas y poblados.
- Establecer metas accesibles sobre el número de familias que se atenderán en cada plan a ejecutar.
- Establecer planes de trabajo que tengan una cobertura mínima de estudios socioeconómicos y que puedan ser primordiales en seis meses de trabajo.

7. Organización

El desarrollo del trabajo de campo para la obtención de información de los estudios socioeconómicos y puesta en marcha de los planes de reasentamientos formulados, estará bajo la responsabilidad de un equipo multidisciplinario integrado por un Asesor Jurídico, una Trabajadora Social, un Ingeniero Agrónomo, un Ingeniero Civil, un Arquitecto, Tipógrafos y un Maestro de Caminos. El desarrollo de los planes deberá contemplar los elementos siguientes:

- Impacto generado
- Ubicación geográfica
- Inmersión en la comunidad
- Estudio socioeconómico
- Diagnóstico
- Planificación
- Valoración
- Ejecución
- Evaluación ex post

8. Proceso de Trabajo

El proceso de trabajo deberá contemplar las actividades siguientes:

EVALUACIÓN PRELIMINAR

- Inmersión comunal
- Diagnóstico operativo
- Plan general de actividades
- Estudios socioeconómicos
- Infraestructura básica
 - Calles (vialidad)
 - Drenajes
 - Administración
 - Electricidad
 - Agua
 - Recreación
 - Salud
- Elaboración y presentación de informes escritos

EVALUACIÓN

- Observación directa e individual
- Revisión de instrumentos elaborados

CONTENIDOS

- Organización administrativa de las comunidades
- Desarrollo comunal
- Aspectos demográficos de las poblaciones
- Características socioeconómica y culturales de las comunidades a afectar

AREAS DE INTERVENCION

Las comunidades a ser analizadas

9. Recursos

HUMANOS

- Autoridades superiores de la Dirección General de Caminos
- Autoridades comunales
- Asesor jurídico de la Dirección General de Caminos
- Profesional del trabajo Social
- Equipo multidisciplinario de la Dirección General de Caminos
- Comunitarios de los departamentos de Guatemala que serán reasentados en diferentes

sectores

FISICOS

- Oficina asesoría jurídica de la dirección General de Caminos
- Locales comunales e institucionales
- Viviendas de los comunitarios
- Vehículo para traslado y ejecución del trabajo de campo
- Papelería a utilizar

INSTITUCIONALES

- Municipalidades de las localidades
- Dirección General de Caminos

FINANCIEROS

El programa de reasentamiento deber valorarse económicoamente e incluirse dentro del costo total del proyecto. El estimativo de los costos que implicará el Plan de Reasentamiento para cada proyecto, deberá contemplarse en el monto total de dicho proyecto.

10. Calendarización

La calendarización se llevará a cabo de acuerdo a los requerimientos de cada Plan de Reasentamiento, contemplado en un cronograma o en calendarización específica de actividades, a efecto de contar con un orden lógico y sistematizado, previendo los posibles cambios de fechas que pudiesen darse para el desarrollo de las mismas.

MAP SECTION

GUATEMALA

SECOND RURAL AND MAIN
ROADS REHABILITATION PROJECT
FOUR YEAR PROGRAM

1, 2, 3, 4 PHASE OF WORK

WORK PACKAGES

MAIN ROUTES

MAMSOHUE MUNICIPALITY ASSOCIATION

HUISTA MUNICIPALITY ASSOCIATION

PAVED ROADS

NON-PAVED ROADS

UNDER CONSTRUCTION, FONAPAZ/BCIE*

MAIN ROUTES

WORLD BANK ROADS

SELECTED TRACKS/TRAILS

* Fondo Nacional para la Paz/Banca Centroamericana de Integración Económica

MAMSOHUE MUNICIPALITY ASSOCIATION

HUISTA MUNICIPALITY ASSOCIATION

OTHER MUNICIPALITY ASSOCIATION

DEPARTMENT CAPITAL

MUNICIPALITY CAPITALS

MUNICIPALITY BOUNDARIES

DEPARTMENT BOUNDARIES

INTERNATIONAL BOUNDARIES



APRIL 2003

92°00'
the Map Design Unit of The World Bank
denominations and any other information shown
on the part of The World Bank Group, any
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series

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MEXICO

0 5 10 15 20 Kilometer

82°00'

1

91900'

90°30'

GUATEMALA
SECOND RURAL AND MAIN
ROADS REHABILITATION PROJECT
FOUR YEAR PROGRAM

- 1, 2, 3, 4 PHASE OF WORK

WORK PACKAGES

 -  MAIN ROUTES
 -  MAMSOHUE MUNICIPALITY ASSOCIATION
 -  HUISTA MUNICIPALITY ASSOCIATION

- PAVED ROADS
 - NON-PAVED ROADS
 - UNDER CONSTRUCTION, FONAPAZ/BCE*
 - MAIN ROUTES
 - WORLD BANK ROADS
 - SELECTED TRACKS/TRAILS
 - * Fondo Nacional para la Paz/Banco Centroamericano de Integración Económica
 - MAMSONUE MUNICIPALITY ASSOCIATION
 - HUISTA MUNICIPALITY ASSOCIATION
 - OTHER MUNICIPALITY ASSOCIATION
 - ◎ DEPARTMENT CAPITAL
 - MUNICIPALITY CAPITALS
 - MUNICIPALITY BOUNDARIES
 - DEPARTMENT BOUNDARIES
 - INTERNATIONAL BOUNDARIES

* Fondo Nacional para la Paz/Banco Centroamericano de Integración Económica

RURAL POVERTY IN GUATEMALA (MAY 21, 1998)

EXTREME
SEVERE
HIGH
MEDIUM
LOW
NO RURAL

Poverty classification is based on key social indicators (see Annex 10)

- (*) NATIONAL CAPITAL
- ~~ RIVERS
- MUNICIPALITY BOUNDARIES
- - DEPARTMENT BOUNDARIES
- - - INTERNATIONAL BOUNDARIES

Area of map at left

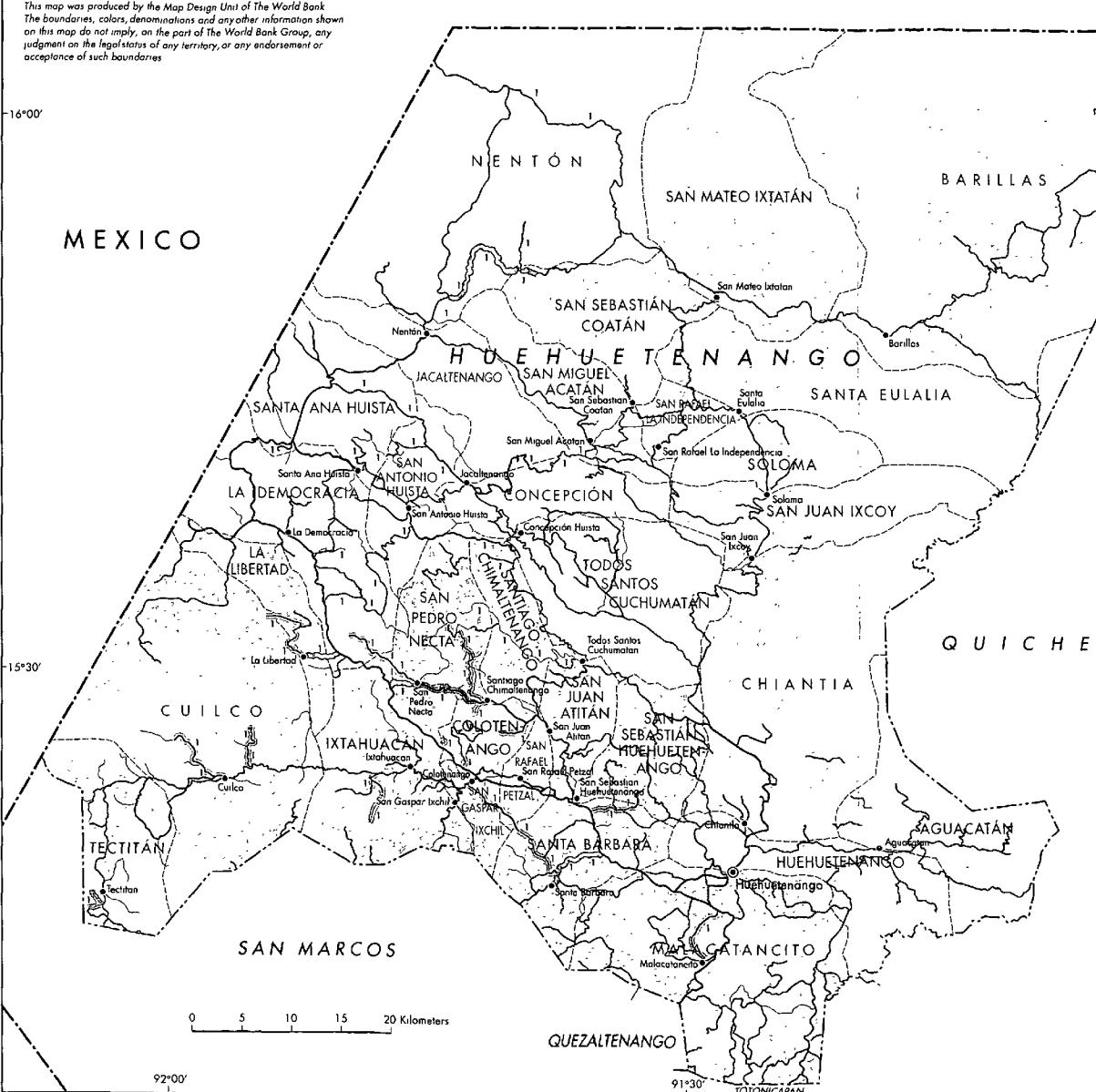
92° 90° 18°
92° 90° 18°
Mexico
Belize
Gulf of Honduras
Honduras
El Salvador
Pacific Ocean
92° 90° 14°
92° 90° 14°

PEÑÍN
Peten
Palenque
Izabal
de Izabal
Alta Verapaz
Baja Verapaz
Progreso
Zacapa
Chiquimula
Jalapa
Guatemala City
Sacatepéquez
Retalhuleu
Suchitepéquez
Escuintla
Santa Rosa
Jutiapa
0 50 100 Kilometers

APRIL 2003

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MEXICO



GUATEMALA SECOND RURAL AND MAIN ROADS REHABILITATION PROJECT FIRST YEAR PROGRAM

1 FIRST YEAR PROGRAM WORK PACKAGES

- MAIN ROUTES
- MAMSOHUE MUNICIPALITY ASSOCIATION
- HUISTA MUNICIPALITY ASSOCIATION

- PAVED ROADS
- NON-PAVED ROADS
- UNDER CONSTRUCTION, FONAPAZ/BCIE*
- MAIN ROUTES
- WORLD BANK ROADS
- SELECTED TRACKS/TRAILS

* Fondo Nacional para la Paz/Banco Centroamericano de Integración Económica

- MAMSOHUE MUNICIPALITY ASSOCIATION
- HUISTA MUNICIPALITY ASSOCIATION
- OTHER MUNICIPALITY ASSOCIATION
- (C) DEPARTMENT CAPITAL
- (•) MUNICIPALITY CAPITALS
- MUNICIPALITY BOUNDARIES
- DEPARTMENT BOUNDARIES
- INTERNATIONAL BOUNDARIES

Secondary/Departmental Road Section	Length (km)	Proposed Type of Works	Total Cost (US\$ M)
1 RD-5 Junction CA-4 km 3157 - La Libertad	5.6	Asphalt Paving	1.29
2 RD-11 Junction CA1 (km 274) - Sta Bárbara	8.0	Asphalt Paving	1.84
3 RD-8 Junction San Pedro Nejapa	5.8	Asphalt Paving	1.33
4 RD-10 San Pedro Nejapa - Santiago Chimaltenango	12.3	Asphalt Paving	2.83
5 RD-12 Junction RD-12 (Nentón) - Bill (border San Mateo Ixtatán community)	20.2	Rehabilitation with Selected Material	0.61
Secondary/Departmental Sub-Total:	51.9		7.90
Rural Road Section (MAMSOHUE)	Length (km)	Municipality	Cost (US\$ 000)
6 Junction RD-13, Caserío Tichoch, Aldea Tzunhutz - Caserío Cacic y Petatán	8.6	Concepción Huista	177.8
7 Jocaltenango - Lupina - Buxup	15.5	Jocaltenango	262.5
8 Jocaltenango - Xayomaj	2.6	Jocaltenango	49.6
9 Junction to Xayomaj - Ichelhueq [Yinchegues]	5.8	Jocaltenango	122.4
10 Ichelhueq [Yinchegues] - Poblado Coronado, junction RD-12	12.6	Jocaltenango	260.5
11 CA-1, Boquerón Piedra Pandita - Nueva Esperanza	18.0	La Democracia	370.2
12 Odza - Crossing Chichenchab	4.0	La Democracia	79.1
13 La Irridat (on RD-12) - Yalambobch (final section FTN)	15.3	Nentón	208.2
14 Crossing to Nentón RD-12 - Quetzal	3.5	Nentón	73.7
15 Finca Charqueqeq, junction to BfL - Subpasum, Conquistic	6.0	Nentón	130.7
16 San Antonio Huista - Ronche Viejo, (through bridge la Caballo)	7.0	San Antonio Huista	141.0
17 San Miguel Acatán - Rio Rosario	9.0	San Miguel Acatán	184.6
18 Rio Rosario - Santa Cruz Coyá	4.0	San Miguel Acatán	80.8
19 Santa Cruz Coyá - El Muñ	4.2	San Miguel Acatán	88.1
20 El Muñ - El Muñ Chiquito (Chichenchab)	1.0	San Miguel Acatán	21.0
21 RD-12 (close to Cuatro Caminos) - Agua Escondida	1.2	Santa Ana Huista	24.4
22 RD-13 Aldea Monoy - Caserío Buenos Aires / Buxup (Jocaltenango)	3.9	Santa Ana Huista	75.6
23 Todos Santos - Aldea Max (Muñ) - Caserío Choxamil	16.2	Todos Santos Cuchumatán	302.4
24 Caserío Choxamil - Caserío Tzubchil	7.1	Todos Santos Cuchumatán	135.3
HUISTA Rural Roads Sub-Total:	145.5		2,787.9
Rural Road Section (HUISTA)	Length (km)	Municipality	Cost (US\$ 000)
25 CA-1 - Ixal	2.9	Colotenango	61.1
26 CA-1 - Tejal	1.8	Colotenango	37.4
27 Xemal - La Barranca-Los Nororientes-CA-1	2.5	Colotenango	51.2
28 Iximel - San Francisco El Retiro	9.8	Culco	182.6
29 Los Chepetes - El Comal	11.0	Culco	210.9
30 La Libertad - Cenegal	10.0	La Libertad	211.8
31 Malacatancito - Aldea Tojajoy (CA-1)	7.3	Malacatancito	154.6
32 Caserío Tuluq - RN-7W	3.9	Sn Gaspar Ixchil	45.3
33 San Idelfonso Ichihuanán Aldea La Cumbre	6.6	Sn Idelfonso Ix	107.4
34 La Leguina - RN-7W	5.0	Sn Idelfonso Ix	76.7
35 Crossing Loguenito RN-VW - Caserío Chanchiquio	1.0	Sn Idelfonso Ix	18.4
36 Aldea Tzucuul - RD-8"	3.5	Sn Juan Atilan	57.5
37 San Pedro Nejapa - Jolimex	12.7	Sn Pedro Nejapa	269.3
38 San Rafael Petzel - Orotón - Xemal	3.0	Sn Rafael Petzel	62.5
39 La Cumbre (RD 13) - Tuluq	13.4	Sta Barbara	284.6
40 CA-1 - Mapá	6.0	Sta. Sebastián Hu	124.3
41 Caserío Chepon - RD-8a	2.7	Santiago Chimalt	55.2
42 Sanmiguel Chimaltenango - Caserío Rio Ocho	14.5	Tecpan	239.9
43 Cruce Tecpan - Tocaná - Sachumba	5.0	Tecpan	115.0
44 Cruce Tecpan - Tocaná - Teniquum	3.9	Tecpan	81.2
MAMSOHUE Rural Roads Sub-Total:	126.5		2,446.9
Rural Roads Sub-Total:	272.0		5,234.8

IMAGING

Report No.:
Type: PAD

25118 GU