

**Ex-Ante Evaluation (for Japanese ODA Loan)**

**1. Name of the Project**

Country:	The Republic of Guatemala
Project:	ZONAPAZ Road Improvement Project (II)
Loan Agreement:	November 6, 2012
Loan amount:	9,939 million yen
Borrower:	The Republic of Guatemala

**2. Background and Necessity of the Project**

**(1) Current State and Issues of the Road Sector in Guatemala**

The percentage of paved roads in the entire country still remains at 46% due to the influence of 36 years of civil war that finally ended in 1996; in particular, the percentage in ZONAPAZ (“peace zone”) which was especially affected by the civil war as it served as the foothold of anti-government forces, is only 37%. Many unpaved roads in the region make vehicular traffic difficult or even impossible in rainy season because most of ZONAPAZ is a mountainous area that receives a large amount of precipitation, and even in the dry season the average speed in traffic is limited to about 20km per hour. Such difficulties are limiting the access of local population to the neighboring markets for delivering agricultural products, employment opportunities, and healthcare/educational facilities, making the poverty rate of the region (approx. 68%) much higher than the national average (approx. 54%).

This situation is particularly prominent in departments of Quiche and Alta Verapaz located in northern central area in ZONAPAZ, where the percentages of paved road are much lower than the national average (36% and 31% respectively) and poverty rates are much higher than regional average (72% and 78% respectively). These two departments have the largest population in the region, but their locations situated far away from the border road leading to Mexico (major distribution route for Guatemala), has been a major disadvantage for the development of paved roads networks.

Currently, the Guatemalan government is constructing the two major paved arterial highways—National Route 7 and Franja Transversal del Norte (FTN)—that stretch east to west in these departments in order to improve these situations. And now, it intends to construct principal access roads to these two main east-west arterial highways from neighboring areas, thereby reducing transportation costs, facilitating access to employment opportunities, neighboring markets and healthcare/educational facilities, and reduce poverty in the region.

**(2) Development Policies for the Road Sector in Guatemala and the Priority of the Project**

The “Reformulación y Actualización del Plan de Desarrollo Vial, Periodo 2008-2017” formulated in 2007 by the Guatemalan government points out that the northern central region in ZONAPAZ (where the poverty rate is especially high) suffers high transportation costs incurred by long-distance detouring due to poor road conditions and a lack of alternate roads,

which is one of the major factors of cause a delay in regional development giving high priority to the road construction in this region. Moreover, the Perez government inaugurated in January 2012 targets “Productive and social infrastructure for development” as a major policy in its political campaign pledge “Agenda del Cambio 2012-2016”, stressing the importance of road construction from the standpoint of regional development and the upgrading of productive infrastructure to realize a competitive country.

### **(3) Japan and JICA’s Policy and Operations in the Road Sector**

Japan positions the road sector as the major aid sector regarding the “correction of the disparity between the regions” in the Country Assistance Program for the Republic of Guatemala. This project is positioned as the “Program for the Poverty Reduction in the Northern Area” for addressing the “correction of the disparity between the regions.” The past achievements of ODA Loan projects in the highway and transportation fields are “Rural Road Improvement Project (GT-P4)” in 1999 (5,781 million yen), and “ZONAPAZ Road Improvement Project (GT-P5)” in 2005 (7,357 million yen). Recent technical cooperation includes the short-term dispatch of experts in “road design” (FY2007), experts in “road policy” (FY2009-2010), and the experts in “road/bridge planning” (FY2010-2011).

### **(4) Other Donors’ Activity**

Banco Centroamericano de Integración Económica (BCIE) is now funding the paving of the FTN Road that crosses northern Alta Verapaz department along the northern border with Mexico in Huehuetenango department (loan amount: approx. 200 million dollars), and Kreditanstalt für Wiederaufbau (KfW) is funding the paving of National Route 5 that connects Cobán (the capital of Alta Verapaz department) and FTN (loan amount: approx. 3 million dollars).

### **(5) Necessity of the Project**

The project helps reduce poverty by improving the access to neighboring markets, employment opportunities, and social services in ZONAPAZ through road construction and matches the development issues and plans of the Guatemalan government, as well as the aid policies of Japan and JICA. Therefore, it is highly necessary and appropriate for JICA to support the project.

## **3. Project Description**

### **(1) Project Objective**

To enhance transportation capacity and improve the access to economic/social services by constructing the roads in ZONAPAZ, thereby contributing to improve living standard, vitalize regional economy and correct regional disparity.

### **(2) Project site/Target Area**

Quiche and Alta Verapaz departments

**(3) Project Components**

- 1) Improvement of the roads/bridges between Playa Grande and Chicaman (approx. 141 km) in Quiche department, and between Pajal and Cahabon (approx. 40 km) in Alta Verapaz department
- 2) Consulting service (detailed design, bidding assistance, construction supervision)

**(4) Estimated Project Cost (Loan Amount)**

14,042 million yen (loan amount: 9,939 million yen)

**(5) Schedule (period of cooperation)**

It is scheduled to be carried out between November 2012 and November 2017 (61 months in total). The project will be completed when facilities start operation (November 2017).

**(6) Project Implementation Structure**

- 1) Borrower: The Republic of Guatemala
- 2) Executing Agency: Ministerio de Comunicaciones, Infraestructura y Vivienda (Dirección General de Caminos (DGC) of the Ministry is in charge of the project.)
- 3) Operation and Maintenance System: Unidad Ejecutora de Conservación Vial (COVIAL)

**(7) Environmental and Social Considerations/Poverty Reduction/Social Development**

- 1) Environmental and social considerations

① Category: B

② Reason for categorization

The project is not considered to be a large-scale road sector project, nor, has none of the sensitive characteristics under the “JBIC Guidelines for Confirmation of Environmental and Social Considerations” (April 2002). The project is not likely to have a significant adverse impact on the environment. Accordingly, the project is judged to fall under category B.

③ Environmental Permit

Ministerio de Ambiente y Recursos Naturales approved the report on Environmental Impact Assessment (EIA) regarding this Project in November 2010 for the section in Quiche department, and in May 2011 for the section in Alta Verapaz department.

④ Anti-Pollution Measures

Construction companies shall implement measures against air pollution, noise, and hydraulics under supervision of the project implementation organization. After the

start of operation, environmental criteria regarding noise are to be satisfied by speed limits and other measures.

⑤ Natural Environment

The project target area does not include a national park or its vicinity that is susceptible to the impact on environment. Any negative impact on the natural environment is thus considered to be minimum.

⑤ Social Environment

The project will not cause involuntary resettlement. However, it does require the land acquisition of 178ha of construction site. The land acquisition shall be implemented in accordance with the domestic procedures of Guatemala. Although indigenous populations live along the road, the impact on indigenous culture/tradition is considered to be minimum.

⑦ Other/Monitoring

In this Project, environmental monitoring will be conducted by the project implementation organization.

2) Promotion of Poverty Reduction

The project will contribute to poverty reduction by improving the standard of living and regional economy vitalization.

3) Promotion of Social Development (gender perspective, measures for infectious diseases including HIV/AIDS, participatory development, consideration for persons with disabilities, etc.)

None in particular

**(8) Collaboration with Other Donors**

None in particular

**(9) Other Important Issues**

None in particular

<b>4. Targeted Outcomes</b>
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**(1) Quantitative Effects**

1) Performance Indicators (Operation and )Effect Indicator)

Indicator		Baseline (Actual value in 2009)	Target (2019) [2 years after project completion]
Annual Averaged Daily Traffic (units/day)	Section in Quiche	106-422	265-929
	Section in Alta Verapaz	214-374	431-690
Travel Time (minutes)	Section in Quiche	480 (via detour)	240
	Section in Alta Verapaz	134	85
Averaged peed (km/h)	Section in Quiche	18	35
	Section in Alta Verapaz	18	28
Access to hospital (minutes)	Asencion Copon, Ixcán city	480	200
	El Paraiso, Uspantan city	620	170
	Panamán, Chicaman city	240	100
	Cahabon, Cahabon city	240	195

## 2) Internal Rates of Return

Based on the following prerequisite, the Economic Internal Rate of Return (EIRR) of this Project will be 12.3% between Playa Grande - Chicaman in Quiche department and 25.2% between Pajal - Lanquin - Cahabon and in Alta Verapaz department. As the project will not generate revenue from tolls, the Financial Internal Rate of Return (FIRR) has not been calculated.

### EIRR

Cost: Project cost (excluding taxes), operating and maintenance costs

Benefits: Reduction of vehicular traffic expenses, reduction of time required for transportation

Project life: 20 years

## (2) Qualitative Effects

Improvement of the standard of living for local citizens and poverty reduction, regional economy vitalization, and stabilized peace

## 5. External Factors and Risk Control

Unanticipated natural disasters such as heavy rains that exceed expectations

## 6. Results of Evaluations and Lessons Learned from Past Projects

Evaluations of previously implemented similar projects in the road sector pointed out to consider slope protection and future soil erosion in construction undertaken in mountainous areas. Therefore, this Project is to include such disaster prevention work as slope protection which sufficient measures have not been taken in road construction in Guatemala. As the evaluations also pointed out that procurement and other procedures must be accelerated in case the rainy season significantly affects the construction period, this Project has set its construction period in consideration of the deteriorated rate of construction progress due to

the rainy season from May to November and has speeded up procurement procedures. Since the executing agency has experienced two other ODA Loan projects, its experience will be utilized in procurement and other procedures, thus JICA will provide further indirect support by providing training opportunities and close supervision of the project.

## **7. Plan for Future Evaluation**

### **(1) Indicators to Be Used**

- 1) Annual Averaged Daily Traffic (units/day)
- 2) Travel Time (minutes)
- 3) Averaged Speed (km/h)
- 4) Access to hospital (minutes)
- 5) Economic Internal Rate of Return (EIRR)

### **(2) Timing**

Two years after project completion