

# Internal Ex-Post Evaluation for Grant Aid Project

conducted by JICA Nicaragua Office: March 2015

Country Name	Project for Capacity Strengthening of Road and Highway Maintenance in the Republic of Nicaragua
Republic of Nicaragua	

## I. Project Outline

Background	Roads are the major important means of transport for passengers and freight in the Republic of Nicaragua. However, road construction and improvement were not enough and road extension (per capita and per area) remained at a low level compared with other Central American countries. The pavement ratio of highways was about 10% in 2009. Especially, the bad conditions of roads in the rural poverty areas hindered social and economic development.				
Objectives of the Project	To promote road improvement in the rural areas where road conditions are poor, by procuring necessary equipment for road construction.				
Outputs of the Project	<ol style="list-style-type: none"> <li>1. Project Site: Nicaragua (whole of country)</li> <li>2. Japanese side: Procurement of a range of equipment for road improvement: Stabilizers, motor graders, vibrating rollers, hand guide rollers, tire rollers, asphalt tanker, asphalt distributors, etc.</li> <li>3. Nicaraguan side: Duty exemption for the procured equipment, operation and maintenance of the procured equipment, etc.</li> </ol>				
Ex-Ante Evaluation	2009	E/N Date	28 July 2009	Completion Date	25 June 2010
Project Cost	E/N Grant Limit: 655 million yen, Actual Grant Amount: 558 million yen				
Implementing Agency	Corporation of Regional Enterprises of Construction (COERCO), Ministry of Transport and Infrastructure (MTI)				
Contracted Agencies	Ingerosec Corporation, Marubeni Corporation				

## II. Result of the Evaluation

### 1 Relevance

This project has been highly consistent with Nicaragua's development policy at the time of both ex-ante and ex-post evaluation. Improvement of rural roads and infrastructure is specified as one of the priority issues in the "National Plan for Human Development (2009-2011, 2012-2016)" and also in the "National Plan of Transport (2001-2010, 2013-2033)". The project has also been highly consistent with development needs for road improvement for transportation of agricultural products and people's access to public services. Also, this project was consistent with Japan's ODA policy at the time of ex-ante evaluation, which supported the transport sector as one of the priorities in Nicaragua so that economic infrastructure development could promote investment, increase productivity and expand export, as cited in the Country Assistance Program to Nicaragua (2002).

Therefore, relevance of this project is high.

### 2 Effectiveness/Impact

All of the procured equipment has been utilized until the time of ex-post evaluation, and this project has largely achieved its objective of "promoting road improvement in the rural areas where road conditions are poor." As shown in the following table, a total of 4,893km of roads were improved from 2010 to 2013. It is much greater than the target of 2,865km set by the Road Maintenance Plan because the emergency repair work during the rainy season was more than expected and COERCO accommodated those increased needs. However, the data was not available to confirm the length of road improved exclusively with the equipment procured by the project. Based on the MTI's estimation that 30 % of the total improvement has been conducted by the procured equipment, it can be assumed that 1,468km (30% of 4,893km) of roads were improved by the procured equipment. This length achieved the target (502km) set at the planning stage.

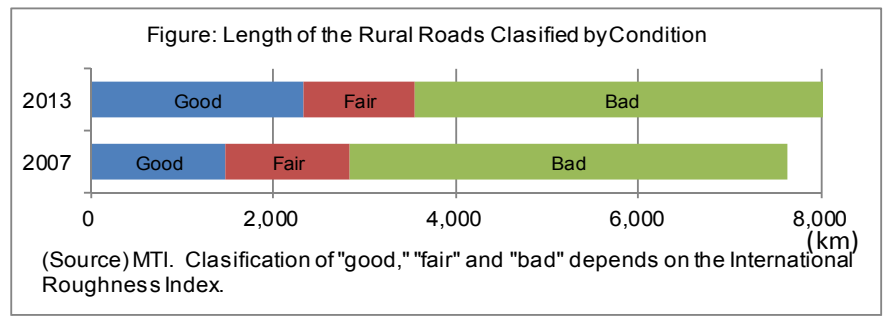
### Quantitative Effects

Indicator		Year 2009 (before the project)	Year 2010	Year 2011 (target year)	Year 2012	Year 2013	Total 2010-2013
Length of roads improved by COERCO (km)	Target of the Road Maintenance Plan (Note1)	n.a.	896.51	445.38	657.14	866.60	2,865.63
	Target (by the equipment procured by the project)	0	30.00	130.15	178.74	163.42	502.31
	Actual of the Road Maintenance Plan	n.a.	1,234.98	1,233.28	1,157.28	1,267.96	4,893.50
	Actual (by the equipment procured by the project.)	0	n.a.	n.a.	n.a.	n.a.	n.a.

(Note1) The Road Maintenance Plan provides the target length of the road to be improved by COERCO. It includes the road improved by the equipment procured under the project and the roads improved by the other equipment.

(Source) MTI.

As shown in the figure, the length of paved and unpaved rural roads in “good” condition increased. In 2007 (before the project) rural roads in “good” condition were 1,487km (19% of the total), and it increased to 2,327km (28%) in 2013. Also, among the total rural roads, the length of paved roads has increased in 61% (1,922.22 km in 2007 to 3,104.46km in 2013). Besides the above quantitative effects, the questionnaire survey with COERCO revealed that road improvement work has become more efficient with the procured equipment. The surface of roads which can be paved per day has increased by more than 400% (1,200m<sup>2</sup> per day in 2009 to 4,900m<sup>2</sup> per day in 2013).



As for impacts, the following positive impacts have been observed as expected at the time of ex-ante evaluation. First, time and cost of transport have decreased in the improved roads. According to the residents living along the improved roads<sup>1</sup>, transport time, fuel consumption, and fare of bus and taxi have decreased. However, some residents pointed out that the risk of traffic accident seems to be arising due to the increased speed. Secondly, transport damages of agricultural products such as cattle, milk and coffee have been reduced. Among the interviewed farmers, some have saved post-harvest loss (beans and corns) or have got an easier access to the market to sell surplus products (eggs) in the rainy season due to improved road conditions and others have mitigated transport loss of egg thanks to decreased damaged roads. Thirdly, people have had an easier and safer access to public services, due to decrease of the impassable roads for vehicles. For example, time to the closest health center decreased, which benefited pregnant women and people who live in the area where vehicles had not reach. Another example is that students can go to school safe, without being stuck in the mud in the rainy season.

No other major negative impact has been observed, besides the above-mentioned possible risk of traffic accidents mentioned. There have been no negative impacts on the natural environment either of land acquisition and resettlement.

Therefore, effectiveness/impact of this project is high.

### 3 Efficiency

The outputs of the project were produced as planned, and both the project cost and time were within the plan (ratio against the plan: 85% and 86%, respectively). Therefore, efficiency of this project is high.

### 4 Sustainability

The operation and maintenance (O&M) of the procured equipment by the project have been carried out by COERCO and its four affiliated companies, which have conducted road improvement work commissioned by MTI. The implementation structure is sustained in the way which was considered desirable at the time of ex-ante evaluation, with a sufficient number of technical staff being allocated in all of the four companies. The responsibilities and roles are clearly demarcated among MTI, COERCO and four affiliated companies.

The implementing agencies have no problem in the technical aspect. Ninety-five (95) % of the staff, including those who received technical training at the delivery of equipment under the project (48 operators and 4 workshop chiefs), remain working at the companies, and those who joined the companies after the project have training opportunities if necessary. Besides, regular technical training is conducted by COERCO, and manuals for operation and maintenance are kept by the chief of each workshop and accessible when needed.

With regard to the financial aspect, the implementing agencies have some problems from the following reasons. First, some affiliated companies have a slight deficit balance because the execution of works for emergent repair was not entirely reimbursed by MTI; Since the law does not allow MIT to allocate a specific budget for the affiliated companies to cover emergent repair, some affiliated companies had to compensate the cost for emergent repair by their limited budget, and as a result they were likely to delay the implementation of emergent repair.. And they had loan payment for the past projects. Secondly, for the future plan of updating the equipment, COERCO has saved approximately 10% of total budget for replacement fund, which is still insufficient, because the fund is sometimes used to cover emergency reparation works in the rainy season.

So as to the current status of O&M of the equipment, there is no problem. Daily check-up including records of working hours and fuel consumption is conducted at the construction site. One affiliated company (EICMEP) holds quarterly meetings with the attendance of both administrative and technical staff to share the current status of O&M. As a result, all of the procured equipment has been utilized without any problem till now. Since the companies perform preventive maintenance, there have not been major problems with the restock of spare parts. For unexpected damages, COERCO needed to wait 30-180 days until the spare parts were delivered, because some were out of stock in distributors in the country.

The project has some problems in financial aspects; however no problem has been observed in structural and technical aspects and the current status of operation and maintenance. Therefore, sustainability of this project effect is fair.

### 5 Summary of the Evaluation

This project has largely achieved its objective, “promotion of road improvement in the rural areas,” as the roads have been improved more than planned in the target area and the equipment procured by the project has been fully utilized. Besides, several positive impacts have been observed, such as decreased transport time, decreased fuel consumption, reduced damages of agricultural products during transportation, easier and safer access to public services especially in the rainy

<sup>1</sup> Based on the interview survey with 7 residents in “Project Santa Rita Km 49 Masachapa Road” (ECONS-3) on April 2<sup>nd</sup> 2014; 7 residents interviewed at “Project Regadio – Empalme La Sirena” (EMCOSE) on April 8<sup>th</sup> 2014; 13 people interviewed at “Project Nueva Guinea - Naciones Unidas” (EICMEP) on April 22<sup>nd</sup> 2014 and 7 people interviewed at “Project Matagalpa – San Ramón” (ENIC) in April 09<sup>th</sup> 2014.

seasons, etc. Therefore, effectiveness/impact of this project is high.

As for sustainability, the implementing and operating agencies have no problem for the institutional and technical sustainability, with sufficient technical staff being allocated in number and techniques. Preventive maintenance is performed, and all of the procured equipment have been utilized without any problem till now. However, there are a few minor concerns in terms of the slight deficit balance in the expenditure and the future replacement plan.

In light of the above, this project is evaluated to be highly satisfactory.

### III. Recommendations & Lessons Learned

Recommendations to implementing agency:

- Some affiliated companies have a slight deficit balance. It is recommended that MTI secure the necessary budget so that these companies could avoid the suspension of repair works and the reduction of replacement fund already established.
- Decreased transport time means increased speed of automobiles. Some residents living near the improved roads showed concerns for the increased speed and possible traffic accidents in the future. In case traffic accidents occur frequently, MTI would need to take measures such as putting traffic signs.
- It takes 30-180 days to get some spare parts from local agents (distributors of SAKAI) in Nicaragua. It is recommended to COERCO to coordinate with these local agents so that local agents could manage the inventory and COERCO could purchase necessary spare parts quickly when needed.
- One affiliated company (EICMEP) holds quarterly meetings with the attendance of both administrative and technical staff to share the current status of O&M, and these regular meetings should be conducted also at other three companies. This would help not only promote awareness raising regarding O&M but also develop a replacement plan of the equipment.

Lessons learned for JICA:

- As some spare parts were out of stock in the local distributor, it had to import from the third country and COERCO had to wait for two months. During the waiting period, road improvement work was suspended. For smooth O&M of the procured equipment, it is required for the client/the consultant to confirm the after-sale service system of the supplier carefully when the Purchase Contract is concluded between the client and the supplier.



(Road improvement with the procured equipment)



(Improved road after damages in the rainy season)