

# Nicaragua - Transportation

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# Overview

## Identification

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**COUNTRY**

Nicaragua

**EVALUATION TITLE**

Transportation

**EVALUATION TYPE**

Independent Impact Evaluation

**ID NUMBER**

DDI-MCC-NIC-IND-TRANS-2014-v1

## Version

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**VERSION DESCRIPTION**

Anonymized dataset for public distribution

## Overview

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**ABSTRACT**

The evaluation examines impacts of the Transportation Project in three ways. First, we calculate economic rates of return associated with reduced user costs for each rehabilitated road - and for the project in aggregate - making use of the before and after measures of road use, detailed data on project implementation and costs, and models that project changes in usage, costs, and benefits over time.

We also examine changes in the availability and cost of common consumption goods that can be attributed to the transportation project. This component of the analysis relies on a survey of retail establishments that targets goods in the Cansta Basica or basic basket that is used in Nicaragua to track consumer prices. Data was collected both before and after construction in communities both on and away from rehabilitated roads. The survey design therefore facilitates measurement of changes in price and availability of goods relative to a relevant comparison group.

The evaluation also examines changes in household consumption using a similar pre- and post- rehabilitation data collection methodology. The consumption measures for this component of the evaluation are derived from responses to household surveys implemented for the Rural Business Development (RBD) portion of the Nicaragua compact. While the bulk of the respondents to this survey are outside the zone of influence of the road rehabilitation, we identify more than one-hundred households within the zone of influence of the rehabilitated roads. It is important to recognize that the data for this component of the report was collected for a different purpose and respondents are not a representative sample of households in the treatment and control areas. Thus these results are intended to be suggestive and provide some insight on the robustness of results from the survey of retail establishments. These surveys do not provide unbiased estimates of the transportation project on the affected population.

**EVALUATION METHODOLOGY**

Independent Ex-Post ERR and Modified RED Model

**UNITS OF ANALYSIS**

Retail establishments

**KIND OF DATA**

Sample survey data [ssd]

**KEYWORDS**

Transportation, Nicaragua, Retail establishments, Enterprise survey

## Coverage

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### GEOGRAPHIC COVERAGE

Departments of Leon and Chinandega

### UNIVERSE

Departments of Leon and Chinandega

## Producers and Sponsors

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### PRIMARY INVESTIGATOR(S)

Name	Affiliation
Jonathan E. Alevy, Ph.D	

### FUNDING

Name	Abbreviation	Role
Millennium Challenge Corporation	MCC	

## Metadata Production

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### METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Millennium Challenge Corporation	MCC		Metadata Producer

### DATE OF METADATA PRODUCTION

2014-10-14

### DDI DOCUMENT VERSION

Version 1.0 (October 2014)

### DDI DOCUMENT ID

DDI-MCC-NIC-IND-TRANS-2014-v1

## MCC Compact and Program

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### COMPACT OR THRESHOLD

Nicaragua

### PROGRAM

The Millennium Challenge Corporation (MCC) signed a five-year, \$175 million compact with the Government of Nicaragua in July of 2005. The compact included three projects, a Property Regularization Project, a Rural Business Development Project and a Transportation Project (MCC 2009). The goals of the compact were to reduce transportation costs and improve rural communities' access to markets, to increase wages and profits from farming and related enterprises in the region and to strengthen property rights with the aim of increasing investment, productivity, and wealth. The project was implemented by the Millenium Challenge Account - Nicaragua (MCA-N), and this document provides preliminary evidence on the economic impact of the transportation component of the compact, which ultimately consisted of significant upgrades to three roads; one secondary trunk road and two secondary roads, totaling 68 kilometers in length. The total cost of the transportation project, including administration, monitoring, and evaluation was \$65.7 million (2011). Project construction activities took place in the northwest of the country in the Departments of Leon and Chinandega. The secondary roads in the project are S1 and S9. S1 is located in the north of Chinandega linking Somotillo and Cinco Pinos. S9 connects the urban center of León to the oceanfront communities of PoneLOYA and Las Peñitas. The secondary trunk road VG connects Villanueva to the Honduran border at El Guasaule, providing a potentially important link to trade partners across the border. Figure 1 in the main text maps the project area.

### MCC SECTOR

Transport (Trans)

**PROGRAM LOGIC**

For road construction and improvement projects, benefits to users associated with reduced travel time, fuel use, and wear on equipment figure most prominently. However, the argument for the importance of rural road development has not always been a narrow one that focused solely on transportation costs. Muhamad argued for the importance of outcomes that included increased access to education and health care as well as social and cultural benefits associated with increased interaction with urban centers.

# Sampling

## Study Population

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Departments of Leon and Chinandega

## Weighting

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Annual average daily traffic (AADT) for the road was calculated as the weighted average based on the length of both segments

# Questionnaires

## Overview

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Establishment surveys in thirty communities were conducted to collect data on price and availability of a basket of consumer goods to shed light on whether the rehabilitated roads provide significant nonuser benefits. The establishment survey contains information on fifty-three items that comprise the Canasta Basica - or basic basket - from which the Central Bank constructs its cost of living index. The fifty-three items in the Canasta Basica are segregated into eight categories that include food items, household costs, and clothing.

## Data Collection

### Data Collection Dates

Start	End	Cycle
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### Data Collection Notes

The evaluation process is data intensive and data from a wide variety of sources are used to evaluate the Transportation Project. Data collected specifically for the project include traffic counts and origin and destination surveys that allow the tracking of travel costs and estimation of benefits. Administrative data from official sources that includes wages, and fuel costs and use is also a critical input in the ERR calculation. Establishment surveys in thirty communities were conducted to collect data on price and availability of a basket of consumer goods to shed light on whether the rehabilitated roads provide significant nonuser benefits.

### Questionnaires

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### Data Collectors

Name	Abbreviation	Affiliation
FIDEG		

## Data Processing

No content available

## Data Appraisal

No content available