Closed Compact Report: El Salvador Compact

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Millennium Challenge Corporation
United States of America

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Introduction

In November 2006, the Millennium Challenge Corporation (MCC) and the Government of El Salvador signed a five-year, $461 million compact to reduce poverty by investing in the underdeveloped Northern Zone of the country. The compact invested in education, public services, agricultural production, rural business development, and transportation infrastructure through three projects.

- The **Human Development Project** promoted increased physical and social infrastructure in the Northern Zone through investments in both education and vital community infrastructure.
- The **Connectivity Project** helped to physically unify El Salvador's Northern Zone with the rest of the country by improving road systems, enabling new economic opportunities for rural households, lowering transportation costs, and decreasing travel times to markets.
- The **Productive Development Project** sought to increase the incomes of Northern Zone residents by providing technical assistance, training, and financial support to alleviate constraints to high-quality production, increased productivity and access to investment capital.

Under the compact, MCC and the Government of El Salvador rehabilitated or constructed more than 223 km of road (roughly equivalent to the distance between Washington, DC and Philadelphia), three large bridges and 20 smaller bridges. An estimated 35,412 families now have electricity in their homes thanks to the installation of new power lines and solar power systems, and over 7,600 households are now connected to potable water. The compact also built a new technical community college; improved course offerings, curricula, and teacher training; expanded and rehabilitated 20 high schools; and assisted an estimated 17,500 farmers and craftsmen through the provision of training, seeds, equipment, and technical assistance.

This report provides a summary of the tangible outputs of the compact program, documents changes in compact activities, and provides information on performance against targets in the monitoring plan and on the results of completed independent evaluations. Additional evaluations of compact activities will be completed in 2018 and 2019 and this report will be updated once these evaluations are final.

Country Context

El Salvador entered into a peace accord in 1992 that ended a decade of civil conflict. Human capital formation lagged and public investment was deferred during the war, contributing to a high incidence of poverty in the country (approximately 66 percent). The Northern Zone fared the worst; its mountainous territory served as a primary staging ground for the conflict, increasing violence and instability in the area and causing an exodus of large numbers of residents. Despite the significant national economic growth that followed the peace accord, progress stagnated and the poverty rate in the Northern Zone climbed significantly higher than the national average.

Overcoming these obstacles and unifying the Northern Zone with the rest of the country became a national priority. A comprehensive development program was needed to enable the region's people to fully participate in El Salvador's growth, the benefits of regional integration, and the economic opportunities brought about by free trade agreements. The five-year MCC compact provided a historic opportunity to fulfill these goals and revive El Salvador's economic development.

MCC and the Government of El Salvador signed the compact in November 2006. It focused on the Northern Zone of the country, a region that includes half of El Salvador's poorest municipalities and has substantial unrealized potential for sustainable development. The Northern Zone is also an important source of water, energy, biodiversity, and environmental resources for the country and the region.

The compact was implemented by FOMILENIO, an institution established by the Government of El Salvador as a requirement of the compact. [1] The Government of El Salvador and MCC expect over 706,000 people to benefit over 20 years from this investment.

- Original Amount at Compact Signing:
  $460,940,000
- Amount spent:
  $449,566,761

- Signed:
  November 29, 2006
- Entry Into Force:
  September 20, 2007
- Closed:
  September 20, 2012

Estimated benefits correspond to $446,354,417 of compact funds, where cost-benefit analysis was conducted.

- 706,335Estimated beneficiaries over 20 years

  MCC considers beneficiaries of projects to be those individuals who realize improved standards of living, primarily through higher incomes, as a result of economic gains generated by MCC-funded projects.

- $276,837,800Estimated net benefits over 20 years

  (2008 USD) “Estimated Net Benefits” is the sum of all projected net benefits accruing over the life of the project, typically 20 years, evaluated at a 10% discount rate. Estimates are reported in millions of U.S. dollars in the year that the ERR analysis was completed.

- Compact Agreement
- M&E Plan
- M&E Plan

Connectivity Project

- $233,560,000Original Compact Project Amount
- $270,051,380Total Disbursed

Estimated Benefits

Estimated benefits correspond to $270 million of project funds, where cost-benefit analysis was conducted.

Estimated Benefits for the Connectivity Project

Time	Estimated Economic Rate of Return (ERR) over 20 years	Estimated beneficiaries over 20 years	Estimated net benefits over 20 years
At the time of signing	23.9 percent	600,000	N/A
Updated (if relevant)	15.9 percent	533,677	N/A
At compact closure	21.6 percent	533,677	$192,759,102

Economic rates of return (ERRs) dropped during the update as MCC used a new methodology for calculating benefits, switching from the original measurement of land prices to the new measurement of travel time and vehicle savings for road users. The closeout ERR increased due to re-scoping of the funding to the transnational highway and cancellation of the Network of Connecting Roads Activity. A second independent evaluation of the project will determine the post-compact ERR using HDM-4 analysis [2] with results expected in 2019.

Project Description

The isolation of El Salvador's Northern Zone proved to be an impediment to its development, contributing to widespread poverty that affected more than half of the region's families at the time of compact signing. The Connectivity Project sought to physically link El Salvador's Northern Zone with the rest of the country, enabling new economic opportunities for rural households, lower transportation costs, and decreased travel times to markets. The project included two activities:

- **The Northern Transnational Highway Activity:** This activity aimed to provide contiguous and reliable access to communities in the Northern Zone and main transport corridors to enable the Northern Zone to participate more fully in the national and regional economy. It included designing and constructing approximately 50 km of secondary roads, upgrading approximately 160 km of roads to secondary road standards, and rehabilitating approximately 80 km of roads to secondary road standards.

- **The Network of Connecting Roads Activity:** This activity was designed to connect vast rural areas of the Northern Zone with the Northern Transnational Highway and the existing paved road network by upgrading approximately 240 km of connecting roads to modified tertiary road standards.

All roads were subjected to rigorous studies and evaluations for potential environmental impacts. These studies led to specific environmental management plans that included conservation and environmental mitigation. Resettlement activities centered on the acquisition of land and fixed property along the right-of-way, with a successful program involving approximately 2,500 cases of land acquisition conducted to international best practices. FOMILENIO also established a number of best practices of its own as part of this program, including monitoring vulnerable properties adjacent to the right-of-way and creating incentives for rehousing or construction upgrades for families living in unsafe adobe dwellings. MCC and FOMILENIO also provided training on environmental assessment and resettlement for government agencies and contractors.

The Connectivity Project experienced early difficulties due to delays and quality deficiencies on the feasibility study funded by the Government of El Salvador, environmental impact assessment, and initial designs contract. FOMILENIO employed innovative strategies to recover from these delays (e.g., using a design-build contract modality) and reduced costs far below those estimated in the feasibility study. A significant re-scoping nevertheless became necessary. The Network of Connecting Roads Activity was cancelled in March 2009, and its funding was transferred to the Northern Transnational Highway Activity. The Government of El Salvador then agreed to allocate resources from loans with international banks to build some segments of the connecting roads that were considered a priority (more details on the re-scoping of the project are available in the Compact Changes section below).

The Connectivity Project achieved its key targets despite the change in scope. More than 222 km of roads, three large bridges, and 20 smaller bridges were rehabilitated or constructed in northern El Salvador to help improve connectivity with the rest of the country. This east-west road stretches from nearly the Guatemalan border in the west to the Honduran border in the east, and the improvements are anticipated to halve travel time from 12 hours to 6 hours.

Evaluation Findings

Connectivity Project

The impact evaluation of the Connectivity Project was designed to measure changes in transportation costs and households' ability to extend their labor activities and diversify income sources.

The evaluation found that the Northern Transnational Highway modestly reduced travel time to households' nearest market as well as the travel time to various services, and lowered the cost of accessing both the market and services. Yet, there were no significant changes detected in agricultural sales, harvests, incomes or expenditures. There were delays in the construction of the Northern Transnational Highway, therefore, the evaluation captures short-run effects (one to two years) and effects on agricultural sales or income may take longer to materialize. MCC plans to conduct a second independent evaluation to analyze aspects of the road not covered in the first evaluation: (i) determine the post-compact ERR using HDM-4 analysis, (ii) assess the road maintenance regime, (iii) analyze the composition of road users, and (iv) assess the transportation market structure. Information from this second evaluation, which is focused on road users, will be used to determine whether MCC should undertake additional household data collection and analysis to evaluate longer-term household outcomes.

Status of the Evaluation

Component	**Status**
Baseline Report	Completed in 2010
Final Report	Completed in 2017
Second Evaluation	Final report expected in 2019

Key performance indicators and outputs at compact end date

Key performance indicators and outputs at compact end date

Activity/Outcome	**Key Performance Indicator**	**Baseline**	**End of Compact Target**	**Quarter 1 through Quarter 20 Actuals (as of Dec 2012)**	**Percent Compact Target Satisfied (as of Dec 2012)**
Northern Transnational Highway Activity	Annual average daily traffic on the Northern Transnational Highway • This indicator is expected to be measured through data collected for the second evaluation in 2018.	270	962	Pending	Pending
	Kilometers of roads completed	0	195.6	223.32	114%
	Travel time from Guatemala to Honduras	11.72	5.7	Pending	Pending

Activity/Outcome	Key Performance Indicator	Baseline	End of Compact Target	Quarter 1 through Quarter 20 Actuals (as of Dec 2012)	Percent Compact Target Satisfied (as of Dec 2012)
	through the Northern Zone (hours and minutes) • This indicator is expected to be measured through data collected for the second evaluation in 2018.				

Data necessary to update indicator performance will be provided through the second Connectivity Project evaluation, expected to be collected in 2018 for a final report in 2019.

Human Development Project

- $95,070,000Original Compact Project Amount
- $84,210,865Total Disbursed

Estimated Benefits

Estimated Benefits for Activities and Sub-Activities

Activity and Sub-Activity		Time	Estimated Economic Rate of Return (ERR) over 20 years	Estimated beneficiaries over 20 years	Estimated net benefits over 20 years
Community Development Activity	Community Infrastructure Sub-Activity	At the time of signing	10.4 percent	92,923	$156,923
		Updated July 2010 following mid-term review	15.2 percent	92,923	$2,011,000
		At compact closure	11.3 percent	92,923	$530,000
	Rural Electrification Sub-Activity	At the time of signing	23.6 percent	207,270	$23,228,000
		Updated July 2010 following mid-term review	18.4 percent	104,031	$13,724,650
		At compact closure	19.4 percent	160,770	$15,720,700
	Water and Sanitation Sub-Activity	At the time of signing	13.8 percent	140,000	$3,738,810
		Updated July 2010 following mid-term review	5.7 percent	173,132	$-4,477,480 Any project with an ERR below 10 percent will result in

Activity and Sub-Activity		Time	Estimated Economic Rate of Return (ERR) over 20 years	Estimated beneficiaries over 20 years	Estimated net benefits over 20 years
					negative net benefits—this is one reason why MCC now uses a 10 percent "hurdle" rate for project ERRs when making investment decisions—a different hurdle rate was in place at the time this compact was developed.
		At compact closure	3.6 percent	33,516	$-5,869,102
Education and Training Activity	Formal Technical Education Sub-Activity	At the time of signing	6.5 percent	7,831	$-3,572,710
		Updated July 2010 following mid-term review	11.5 percent	16,445	$4,041,443
		At compact closure	11.5 percent	25,052	$4,264,050
	Non-Formal Skills Development Sub-Activity	At the time of signing	35.9 percent	20,065	$7,818,000
		Updated July 2010 following mid-term review	18.3 percent	12,965	$2,488,120
		At compact closure	12.1 percent	23,267	$1,148,738

Project Description

At the time of compact signing, significant numbers of El Salvador's poor lacked basic public services required for human development. This problem was particularly acute in the Northern Zone, where an estimated 25 percent of the population (roughly 225,000 people) was not connected to water systems, over 20 percent (nearly 200,000 people) lacked improved sanitation services such as latrines, and 28 percent (over 235,000 individuals) lacked electricity. Poor community infrastructure (e.g., impassable local roads) forced many of the rural poor to forgo opportunities to seek education, health care, or employment. Human development was also hampered by gaps in and constraints to education and training. In 2007, the average Northern Zone student attended school for approximately four years—two years less than their peers in the rest of the country. Less than one in ten children completed high school, and the quality of that education was poor. Many young people chose to emigrate to other countries or major urban centers, where their lack of skills often trapped them in poverty.

The Human Development Project was designed to address these critical issues by increasing the human and physical capital of residents so they could take advantage of employment and business opportunities. The project increased physical and social infrastructure in the Northern Zone through investments in education and vital community infrastructure. The Human Development Project contained two activities:

- **Community Development Activity:** This activity was designed to increase access to basic public services and infrastructure for the poor in the Northern Zone through three types of investments.

  The Water and Sanitation Sub-Activity sought to increase access to water systems and improved sanitation services for thousands of the poorest inhabitants of the Northern Zone in order to reduce the incidence of disease and the time and cost of seeking or purchasing water. This included funding potable water and sanitation systems (e.g., household latrines), capacity building in the communities so the systems would be maintained, and community education to ensure households were aware of appropriate health and sanitation practices.

  The Rural Electrification Sub-Activity was designed to extend electricity to at least 97 percent of households in the Northern Zone that were not connected to electricity distribution networks to save beneficiaries money and increase household productivity. The sub-activity included extending 1,500 km of new distribution lines, connecting over 20,000 households to the grid. MCC funding covered 85 percent of the projected investment amount in electrification, with contributions from the Government of El Salvador and executing entities comprising the balance. The sub-activity also installed approximately 950 solar power systems.

  The Community Infrastructure Sub-Activity aimed to connect isolated communities and villages in the Northern Zone and address a lack of access to local infrastructure such as market, healthcare, and education facilities. This included the rehabilitation and construction of community infrastructure as well as technical assistance to communities on infrastructure operations and maintenance.

- **Education and Training Activity:** The Education and Training Activity sought to increase education and skill levels of the poor in the Northern Zone by expanding the quality of and access to vocational and technical education and training. This activity included three sub-activities.

  The Technical Assistance Sub-Activity was designed to improve the capacity of institutions and organizations involved in policy, planning, and administration of education and training in the Northern Zone. The compact funded technical assistance to support government institutions by conducting a diagnostic analysis of vocational education and non-formal training programs in the region, identifying measures to ensure sustainability of compact investments in the sector, and supporting the Education and Training Advisory Committee, which was formed by the compact and provided oversight and recommendations on investments.

  In addition to investments in technical assistance, the Education and Training Activity also included the Formal Technical Education Sub-Activity aimed at strengthening technical and vocational education institutions in the Northern Zone. This included the construction of the Chalatenango Technical College, a post-secondary institution, and strengthening approximately 20 middle technical schools in key municipalities with links to other activities funded under the compact. This sub-activity also established a competitive scholarship program to reach poor youth in the region.

  The Non-Formal Skills Development Sub-Activity worked to complement the Formal Technical Education Sub-Activity by expanding access to non-formal education and training to the poor, women, at-risk youth and others who were unlikely to attend formal programs. This included support to short-term pre-employment training.

At the end of the compact, the Human Development Project funded construction of a new technical community college; improved curricula, course offerings, and teacher training; expanded and rehabilitated 20 high schools; improved approximately 39 km of rural roads; and constructed 20 small br idges. The rehabilitation of the high schools alone is expected to benefit more than 9,700 students each year. An estimated 12,000 people (60 percent of whom are women) received vocational training in areas such as electricity installation and bread-making. At compact close, an estimated 35,412 households had electricity in their homes thanks to the installation of new power lines and solar power systems. The project also funded the drilling of more than 20 deep wells, the installation of approximately 6,500 micro water meters, and almost 170 miles of pipes—equivalent to the length of El Salvador—that connected 7,634 households to potable water.

Evaluation Findings

Community Development Activity

Rural Electrification Sub-Activity

The impact evaluation for the Rural Electrification Sub-Activity was designed to determine the impacts of electrification on the cost of energy, energy consumption, time allocation, and household income.

The evaluation results showed that households that received a subsidy to cover a portion of the costs of connecting were more likely to get a formal connection to the grid and that connected households used electricity instead of kerosene for lighting. As a result of reduced kerosene use, indoor air pollution and the incidence of acute respiratory infection among children under six declined by 37-44 percent. In addition, children in connected households were more likely to participate in education activities, such as studying at home, spending time at school, and going to and from school. Adults were more likely to engage in self-employment and in non-agricultural activities. In particular, women in connected households were more likely to operate a home business. Finally, the evaluation found an increase of 8.8 percent in annual household income (the equivalent of $111) for connected households

Status of the evaluation

Component	Status
Baseline Report	Completed in June 2011
Final Report	Completed in October 2017

Solar Panel Component

A performance evaluation of the solar panel component of the Rural Electrification Sub-Activity assessed the use and sustainability of household solar panels six to eight years after they had been installed. The evaluation interviewed 80 participants (out of 1,950 total participants) and those individuals reported the following:

- 78 percent of the solar panels were still in use.
- Participants used less kerosene, wood, and candles.
- All but one of the interviewed participants saved money on energy since they began using their solar panel systems.
- Participants believed that the solar panel systems allowed them to have more time for activities primarily related to leisure, housework, and education.
- Women spent the additional time on housework (e.g. cooking and cleaning), while men used the additional time for leisure activities.
- Nearly half of the participants believed that school age children have more time to study at night.
- Almost 90 percent of participants interviewed reported that air quality in their homes had improved greatly since they began using the solar panel systems; however, effects on health outcomes could not be determined.
- Finally, due to the limited electricity capacity, very few households reported using the extra time for income generating activities.

Status of the evaluation

Component	Status
Final Report	Completed in October 2017

Water and Sanitation Sub-Activity

The impact evaluation of the Water and Sanitation Sub-Activity measured the benefits of MCC's intervention in the following categories: 1) coping costs and cash expenditures on water 2) health 3) education 4) household welfare, and 5) gender and social inclusion.

Positive effects were found on the ownership and use of improved water and sanitation services, as well as on the reliability of service. The time households spent gathering water decreased by 3 hours per week and the time spent doing laundry outside the home for those households who did laundry outside the home decreased by three hours per week, primarily benefiting women and girls. Consistent with the ERR estimates at the end of the compact, no effects were detected on water consumption, diarrhea incidence, or school enrollment and attendance – which was not surprising because water consumption and school enrollment were high in the baseline, and diarrhea incidence in the Northern Zone had substantially decreased prior to program implementation. There was no evidence of increased time spent on income-earning activities such as wage labor or a household business. A small increase in household expenditure was found, but no effect on household income was detected.

Through this evaluation, MCC learned that providing private water connections for households can be effective at freeing up time for household members, but additional interventions may be necessary to turn that time into income generating time for the household. In addition, if impacts do not occur as expected, evaluations should be designed to answer the question "why not?" Unfortunately, the design of this evaluation did not ask evaluators to examine reasons why impacts did not occur as expected.

Status of the evaluation

Component	Status
Baseline Report	Completed in February 2012
Final Report	Completed in August 2016

Community Infrastructure Sub-Activity

The evaluation for the Community Infrastructure Sub-Activity has been placed on hold because learning potential is limited. MCC is currently assessing the potential costs and benefits of conducting an independent performance evaluation for this sub-activity.

Status of the evaluation

Component	Status
Final Report	On hold

Education and Training Activity

Formal Technical Education Sub-Activity

The Formal Technical Education Sub-Activity evaluation assessed the effects of MCC's investments in secondary and post-secondary school improvements and scholarships in the Northern Zone. Specifically, the evaluation examined 1) program design and implementation, 2) the characteristics of program participants, 3) the impact on students' education and labor market outcomes, 4) impacts and results by key subgroups, including boys/girls, 5) explanations for impact findings, and 6) the sustainability of MCC's investments.

While strengthening 20 secondary schools and providing scholarships to technical secondary school students increased enrollment, especially among boys, it showed no impact on income one year after students were scheduled to complete general or technical degrees. This was due in part to increased enrollment in post-secondary education, so students had less time for income generating activities. As for the construction and offerings of the Chalatenango Technical College, employment rates one year after graduation fell below the compact target of 70 percent. This was partially due to students' further engagement in post-secondary studies, but also likely due to low labor market demand in the region.

Status of the evaluation

Component	**Status**
Baseline Report	Completed Middle School Admin Data in March 2010 and Survey Data in March 2011
Interim Report	Completed in May 2013
Final Report	Completed in October 2016

Non-Formal Skills Development Sub-Activity

The performance evaluation of the Non-Formal Skills Development Sub-Activity examined its effects on employment rates and personal income by comparing outcomes for enrolled participants before the start of the program with outcomes for the same individuals approximately one year after the end of the program. While this methodology cannot fully attribute differences to MCC's training program because factors outside of the program – including broader economic developments during the study period – could have also affected outcomes, the analysis offered insights into how participants' labor market outcomes and income changed after completing the non-formal skills course.

Evaluations showed higher employment rates for participants after the training. When all survey rounds with income data were pooled in 2015, total net annual income increased by $298 on average after completing the non-formal skills course. This was slightly higher than anticipated in the 2012 closeout ERR, leading to an increase in the post-compact ERR from 12.1% to 13.2%. However, it is likely that this estimate is biased upward due to the limitations of the survey instrument used in early survey rounds. The post-compact ERR was conducted by MCC using data from the evaluator.

Status of the evaluation

Component	Status
Interim Report	Completed in May 2014
Final Report	Completed in June 2015

Key performance indicators and outputs at compact end date

Key performance indicators and outputs at compact end date

Activity and Sub-Activity/Outcome		Key Performance Indicator	Baseline	End of Compact Target	Quarter 1 through Quarter 20 Actuals (as of Dec 2012)	Percent Compact Target Satisfied (as of Dec 2012)
Community Development Activity	Community Infrastructure Sub-Activity	Population benefiting from strategic infrastructure	0	80,437	81,699	102%
	Rural Electrification Sub-Activity	Households benefiting with a connection to the electricity network • Note that this indicator measures households and MCC's beneficiary estimates include all people living within a household.	0	24,426	35,412	145%
		Households benefiting with the installation of isolated solar systems	0	1,950	1,950	100%
		Kilometers of new lines of electrical distribution construction under	0	1,415	1,523	108%

Activity and Sub-Activity/Outcome		Key Performance Indicator	Baseline	End of Compact Target	Quarter 1 through Quarter 20 Actuals (as of Dec 2012)	Percent Compact Target Satisfied (as of Dec 2012)
		contract (contracts signed)				
	Water and Sanitation Sub-Activity	Households with access to improved sanitation	0	1,967	7,169	364%
		Households with access to improved water supply	0	6,935	7,634	110%
		Persons trained in hygiene and sanitary best practices	0	1,967	2,406	122%
Education and Training Activity		Educational facilities constructed/rehabilitated and/or equipped through MCC-supported activities	0	22	22	100%
		Instructors trained or certified through MCC-supported activities	0	500	566	113%
		New scholarships granted to students of middle technical education (female)	0	1,464	1,842	126%
		New scholarships granted to students of technological education (female)	0	359	424	118%
		Non-formal tranined students that complete the training	0	6,888	11,345	165%
		Students participating in MCC-supported education activities	0	26,927	30,672	114%

The Formal Education Sub-Activity cost-benefit analysis, which was completed nine months after the compact closed, showed benefits deriving from an assumed increase in income per student, based on the average income difference in the region for those with and without the education level achieved. These increased incomes were not seen in the impact evaluation, which was completed four years after the compact ended.

The reduction in the ERR for the Non-Formal Education Sub-Activity at the mid-term review resulted primarily from costs per beneficiary being higher than anticipated. At closeout, the ERR was further reduced because preliminary survey data of beneficiaries showed the estimated impact on income per beneficiary was lower than originally expected.

The reduced ERR for the Water and Sanitation Sub-Activity at the end of the compact is largely attributed to a lower impact on disease incidence than expected in the original model, which assumed a zero incidence rate for households with piped water. The evaluation found no evidence of a reduction in the diarrhea rate among children under five.

Productive Development Project

- $87,470,000Original Compact Project Amount
- $66,571,244Total Disbursed

Estimated Benefits

Estimated benefits correspond to $62.7 million of project funds, where cost-benefit analysis was conducted.

Estimated Benefits for Activities

Activity	Time	Estimated Economic Rate of Return (ERR) over 20 years	Estimated beneficiaries over 20 years	Estimated net benefits over 20 years
Financial Services Activity	At the time of signing	No ERR done	N/A	N/A
Investment Support Activity	At the time of signing	No ERR done	N/A	N/A
	At compact closure	15.3 percent	Not done	$2,378,831
Production and Business Services Activity	At the time of signing	12.6 percent	Not done	$88,309,168
	At compact closure	26.0 percent	61,729	$38,126,800

The Investment Support Activity had no ERR at signing because it was a loan program – the projects it would support were not yet selected, as the projects that qualified for loans were identified during the implementation phase. However, each individual loan recipient was required to have an internal rate of return that exceeded 12 percent. The closeout ERR was calculated using evidence provided by loan recipients on employment generated due to expanded business as a result of access to investments through loans.

Project Description

Approximately 40 percent of the population in the Northern Zone was engaged in low-productivity activities at the start of the compact, including the production of traditional crops such as maize, beans, and forage. Limited technical and business knowledge and limited access to financial resources slowed regional economic growth. Only two percent of loans in El Salvador had been extended to inhabitants of the Northern Zone, of which only four percent were extended to the agriculture sector.

The Productive Development Project sought to increase the incomes of Northern Zone residents by providing technical assistance, training, and financial support to alleviate constraints to high-quality production, increased productivity and access to investment capital. The project intended to help the region jump-start investment, particularly in activities that would benefit the poor and disadvantaged (with a special focus on women and youth). Banking institutions in the Northern Zone were also strengthened by the project, which included three activities:

- The **Financial Services Activity:** The Financial Services Activity sought to increase lending, access to credit, and other financial services to improve the risk profile of micro-, small- and medium-sized producers and rural entrepreneurs in the Northern Zone. The activity supported two guarantee programs – one, called Progara Norte, that facilitated access to credit for farmers and reduced credit risk for the participating financial institutions, and another, called SGR, that provided bank or commercial loan guarantees for micro-, small- and medium-sized enterprises. Another component of the activity funded a crop insurance program, which was terminated during a mid-term review due to lack of uptake. Finally, the Financial Services Activity provided technical assistance to banks and other financial institutions in the Northern Zone to expand rural finance and improve credit analysis, introduce new technologies into service delivery, and develop specialized products that increase beneficiary access to financial services such as leasing, savings, and specialized agricultural credit products.
- The **Investment Support Activity:** The goal of the Investment Support Activity was to make investment capital available to poor individuals and organizations that benefit poor inhabitants of the Northern Zone, who, due to insufficient collateral and lack of liquid assets, were not able to finance their investments. This activity supported the administration and funding of an investment support program, called FIDENORTE, providing investment capital for the development of competitively selected business proposals.
- The **Production and Business Services Activity:** This activity aimed to help poor farmers, organizations and micro-, small-, and medium-sized enterprises that benefit poor inhabitants of the Northern Zone successfully transition to higher-profit activities. This transition was expected to generate new investment, expand markets and sales, and create new jobs to support sustainable economic growth and poverty reduction. It provided technical assistance to poor farmers to shift to high-value agricultural production and forestry strategies, and provided pre-investment studies and technical assistance to develop and implement business plans for Northern Zone residents. There were three sub-activities: investment planning, assistance to small farm enterprises, and business development services.Through the Investment Planning Sub-Activity, assessments of high-return investments, primarily in the agriculture, tourism and handicraft sectors, were completed and used to guide business plan development and technical assistance. The Assistance to Small Farm Enterprises Sub-Activity included delivery of on-farm technical assistance and small in-kind grants to farmers with the objective of shifting poor farmers to higher-value crops and animal products. The Business Development Services Sub-Activity undertook outreach and technical assistance and training to support the development of efficient, sustainable commercial activities in agribusiness, tourism, handicrafts, and other niche markets. Assistance was also provided to other enterprises to develop valuable market linkages and networks.

  MCC and FOMILENIO modified the design of the Production and Business Services Activity during the compact. Phase I of assistance focused on technical assistance with productive activities—particularly milk production in the dairy chain, vegetable production in the horticulture chain, and wood- and clay-based handicraft production in the handicraft chain. After the mid-term review of the compact, the activity was modified in response to lessons learned during Phase I—namely, that increased and more diversified production was not sufficient to guarantee higher sales and income among participating producers. As such, Phase II of assistance featured more explicit marketing and business development components, including the establishment of two new producer-owned enterprises in the horticulture and dairy chains, and the strengthening of three pre-existing producer-owned enterprises in the handicraft and dairy chains.

These three activities were designed to work together – a portion of the Production and Business Services Activity participants would have access to business planning services, investment capital or guaranteed loans through the Investment Support Activity or the Financial Services Activity. The capital and loans would help producers transition to high-value crops and finance new production technologies such as greenhouses and irrigation systems.

At the end of the compact, the Productive Development Project assisted approximately 17,500 producers through the provision of training, seeds, equipment, and technical assistance. The project also supported work to improve almost 23,500 hectares of land on which producers planted short-season vegetables and fruits and improved pasture lands. The Investment Support Activity provided 30 loans to small- and medium-sized businesses in the Northern Zone to develop new investments or expand existing investments in the agriculture, tourism and handicraft value chains. These loans totaled $4.6 million, about 20 percent of which went to women-owned businesses.

Evaluation Findings

Investment Support and Financial Services Activities

The performance evaluation of the Investment Support and Financial Services Activities used available administrative data to analyze the characteristics of FIDENORTE loans, applicants and borrowers, and uses of FIDENORTE credit and technical assistance; the level of investment, employment and income after receiving FIDENORTE credit; effects of FIDENORTE at the organizational and systemic level; and the financial sustainability of the Financial Services Activity's guarantee funds.

Although the Investment Support Activity fell short of its original lending targets, interviews suggest credit recipients experienced higher levels of investment, employment, production and sales than non-credit recipients.

Under the Financial Services Activity, the two guarantee programs together surpassed program targets for the number of guarantees provided and the value of guarantees. Most recipients were microenterprises and defaults for both programs were around three percent. According to implementing staff, these programs expanded their services to clientele that likely could not have found credit elsewhere. Technical assistance to financial institutions appeared to have mixed results and lacked clear performance metrics. Cultural issues and the complexity of insurance policies are believed to be the main reasons behind the lack of uptake and resulting termination of the crop insurance program.

Status of the Evaluation

Component	Status
Interim Report	Completed in March 2012
Final Report	Completed in December 2015

Production and Business Services Activity

Results from the evaluations of the Production and Business Services Activity are mixed and inconclusive. The independent interim impact evaluation of the activity, covering the 2009-2010 phase of implementation, found varied results for the three value chains examined: positive impacts on employment for program participants, but no impacts on productive income in handicrafts; positive impacts on adoption of improved techniques, but no impacts on farm income in horticulture; and positive impacts on adoption of improved techniques and farm income in dairy. Additional follow-up on the handicrafts sector showed that by the end of 2012, the increase in employment detected in the 2009-2010 phase of implementation had disappeared; no impacts were detected on net handicraft income, net annual household income, or household consumption; and negative impacts were detected on salaried income compared to the artisans that did not receive assistance. Analysis showed that artisans who received assistance from the program were likely to continue producing and selling handicrafts afterward, while those who did not benefit from the program were more likely to transition out of handicraft production. It is likely that artisans that did not receive assistance were earning more income from other work outside the handicraft sector, accounting for the negative impacts on salaried income for those who continued to produce and sell handicrafts.

The final evaluation of the dairy and horticulture sectors relied on administrative data collected by the implementer instead of a household survey due to changes in program implementation. The changes included modified eligibility criteria for participants and a shift in the focus of the project from production to marketing. While the administrative data indicated that the activity's assistance surpassed performance targets for increased production, employment, and sales, because administrative data do not take into account what would have happened without the project, and the interim impact findings are not generalizable, it is impossible to make a definitive conclusion regarding the impact of the full assistance package from 2008 to 2012.

Status of the evaluation

Component	Status
Baseline Report (Impact)	Completed in June 2010
Interim Report (Impact)	Completed in August 2012
Final Report (Performance)	Completed in May 2013

Component	Status
Final Report (Impact Handicrafts)	Completed in June 2014

Key performance indicators and outputs at compact end date

Key performance indicators and outputs at compact end date

Activity/Outcome	Key Performance Indicator	Baseline	End of Compact Target	Quarter 1 through Quarter 20 Actuals (as of Dec 2012)	Percent Compact Target Satisfied (as of Dec 2012)
All Activities	Employment created • Employment was measured as the number of full-time equivalent jobs created by various components of the project.	0	11,000	15,247	139%
	Investment in productive chains by selected beneficiaries	0	$65,500,000	$63,219,218	97%
Financial Services Activity	Guarantees granted	0	5,109	5,540	108%
	Value of loans guaranteed	0	$9,680,000	$12,573,984	130%
Investment Support Activity	Amount of Investment Support Fund (FIDENORTE) approved	0	$8,500,000	$7,505,299	88%
	Loans granted by the Investment Support Fund (FIDENORTE)	0	35	44	126%
Production and Business Services	Beneficiaries of technical assistance and training	0	13,500	17,467	129%

Activity/Outcome	Key Performance Indicator	Baseline	End of Compact Target	Quarter 1 through Quarter 20 Actuals (as of Dec 2012)	Percent Compact Target Satisfied (as of Dec 2012)
Activity	Hectares under production with MCC support	0	15,000	23,475	157%

The closeout ERR for the Production and Business Services Activity was based on a different methodology than the original ERR, which used a weighted average of potential uses of agricultural land to estimate the economic impact of the activity. The closeout ERR used interim evaluation data from 2010-2011 to determine benefits, which was largely driven by a dramatic impact for participants in the dairy training component. The results from the final performance evaluation are more inconclusive than the closeout ERR suggests due to changes in project implementation mid-project, which invalidated parts of the original impact evaluation design. Additionally, early effects identified by the interim evaluation for handicrafts disappeared in the follow-up study; however, there was no final impact evaluation of the dairy training, therefore, it is inconclusive as to whether benefits remained.

Compact Changes

- The Connectivity Project was restructured in March 2009 to concentrate the entire project budget on the Northern Transnational Highway while eliminating all compact funding for the Network of Connecting Roads Activity. The need to restructure was driven by significant escalation of costs not anticipated during the 2006 due diligence process. The main reasons for the cost escalation include: 1) significant increases in oil and construction material costs; and, 2) feasibility studies for the road project were not yet complete during due diligence and compact signing (left as a condition precedent prior to authorizing disbursements for road construction). The Government of El Salvador committed to funding the Network of Connecting Roads Activity, confirming financing totaling more than $134 million.
- In February 2010, FOMILENIO undertook a comprehensive mid-term review. Based on an assessment of performance and on updated projections of funding needs for various projects and activities, resources were reallocated among projects and activities to reach the maximum impact possible. The Human Development Project's budget was increased by $6.7 million to further expand the Rural Electrification Activity and initiate job placement programs for formal and non-formal program graduates as part of the Education and Training Activity. The Connectivity Project's $12.6 million increase helped cover contingency costs, finance the extension of the eastern-most segment of the Northern Transnational Highway, and finance environmental measures. The Productive Development Project was reduced by $15.6 million. Agricultural insurance, loan guarantees, financial intermediary technical assistance and the investment support fund (and associated administration costs) were eliminated or reduced as a response to the conclusion that (a) original compact objectives could be met or exceeded with a lower budget, and (b) no market demand materialized for the sub-activity. The M&E budget was also reduced by $3.6 million to correct an over-estimation of funding required for studies.
- When the Government of El Salvador and MCC prepared an updated strategy for building out the Northern Transnational Highway in September 2011, the Government of El Salvador identified three important quality improvements it wanted to pursue. Additionally, the team updated contingency requirements for the project based on trends in commodity prices and projections of potential claims and cost increases, and identified a projected shortfall in the budget for right-of-way clearance. The resulting $13.9 million increase in funding requirements for the Connectivity Project was reallocated from cost savings on the Human Development and Productive Development projects.

Coordination and Partnerships

- FOMILENIO attracted private-sector financing in 2009 from Virginia-based power firm AES Corporation for construction and operation of electricity distribution networks under the Community Development Activity of the Human Development Project. The public-private partnership built 1,300 kilometers of power lines, as well as connections and extensions throughout the Northern Zone. MCC and the Government of El Salvador funded up to 85 percent of the electrification intervention, with AES El Salvador funding the remainder. This public-private partnership between FOMILENIO and AES helped to ensure continuity and sustainability of the investment after the electrification activity ended. The contract required AES to oversee all operations and ongoing maintenance of the transmission lines in accordance with local law and industry best practice.
- Three technical assistance grant agreements between the U.S. Trade and Development Agency and the Government of El Salvador, totaling over $1.3 million, were signed in 2008 that helped to improve highways; connect roads, electricity, water, and communications; and provide business support services.
- The U.S. Agency for International Development (USAID) signed a Global Development Alliance grant for $500,000 in alliance with Super Selectos, a national chain of grocery stores, to assist El Salvador Produce, a commercial cooperative society composed of 20 fruit and vegetable producer organizations established within the Productive Development Project. The USAID grant built the complete cold storage chain for the commercialization activities of El Salvador Produce.
- Using the compact as leverage, and with the support of MCC, the Government of El Salvador received a $48 million loan from the Central American Bank for Economic Integration in 2011 to rehabilitate a 42 km degraded and lower-standard segment of the Northern Transnational Highway, between Nueva Concepcion and Chalatenango.
- As part of compact closure, FOMILENIO planned for the dissolution of financial assets from the FIDENORTE loan, Progara Norte and SGR loan guarantee programs. FOMILENIO determined that the reflows from all three programs would be granted to two organizations that agreed to match the funds—FIAES, an environmental trust, and FGK, a foundation providing scholarships and leadership programs for low-income, high capacity youth in the Northern Zone.

Conditions Precedent

During the compact, in part as a result of MCC's work with the Government of El Salvador on sustainable road maintenance, the Salvadoran legislature passed two decrees that significantly increased road maintenance funding and improved prospects for sustainability of the road system through appropriate road maintenance. The first decree enables the transfer of traffic fines, license plates and other road user fees directly to the FOVIAL road maintenance fund, and a second decree enables the use of bonds to finance FOVIAL. As of the close of the compact, two additional reforms aimed at further strengthening FOVIAL's financial position were under consideration in the National Assembly. This is a prime example of MCC's positive impact in affecting policy changes necessary for sustainable economic growth in a partner country.

Key Conditions Precedent

Key Compact Component(s)	Major Condition Precedent or Policy Reform Required	Rating
	Compact Undertake Strategic Environmental Assessment (SEA) and Strengthen the National Environmental System (SINAMA)	Met on Time El Salvador used World Bank funding to complete the SEA, the first of its kind in Central America. Ministry of Environment and Natural Resources has recently begun new process designed to strengthen SINAMA.
	Compact Integrated action plan, for the strengthening of property rights and the modernization of the property registration and cadastral systems	Met Late
Connectivity Project	**Connectivity Project** Prior to MCC disbursement for construction or physical works in calendar year 2009 and each year thereafter, FOVIAL has included in its maintenance plan, and will have adequate funding to maintain, all roads constructed under the Connectivity Project, in each case in a manner	Met on Time

Key Compact Component(s)	Major Condition Precedent or Policy Reform Required	Rating
	acceptable to MCC.	
Human Development Project	**Human Development Project** Individuals with no primary school completion certificate can enroll in selected continuing education and selected professional certificate programs prior to formal technical education sub-activity disbursement	Met on Time

Lessons Learned

Fairly early on in the implementation of the compact, MCC and the Government of El Salvador had to redesign the Connectivity Project, eliminating all funding for the Network of Connecting Roads Activity. The change was necessary due to the inaccuracy of the cost estimates completed during the development and due diligence of the project (see above). Changes to cost estimates, which are often made years before contracts are signed, are a common problem for infrastructure projects. In the case of El Salvador, much of the variation can be attributed to changes in international oil prices, to which the costs of building roads with asphalt pavement are highly sensitive. In July 2006 when the project proposals for the compact were reviewed, the price of a barrel of oil was at $73. However, in July 2008, when the feasibility study was completed and the estimated costs were adjusted, a barrel of oil was selling for $144.

There is no way to completely eliminate the risk associated with cost estimation; however, MCC has learned from the El Salvador Connectivity Project and others that faced similar situations, and adapted to reduce the impact that cost increases can have on compact outcomes as much as possible. When possible, MCC projects are designed to be easily modified by dropping or adding components based on final costs without bringing the economic rate of return for a project below the threshold of 10 percent or changing project objectives. Additionally, when cost data is particularly unreliable or unavailable, MCC increases the contingencies for a project to allow for some cost escalation to occur while remaining within the budget envelope. If the contingencies are not needed, they can be reallocated to other compact projects or activities.

Another lesson learned from the El Salvador Compact is that linkages between activities will not happen on their own. The design of the Productive Development Project included three activities. In particular, it was envisioned that the Production and Business Services Activity and the Investment Support Activity would work together. Producers receiving technical assistance and training under the Production and Business Services Activity were to receive help developing business plans to access credit under the Investment Support Activity. By July 2011, at least 15 of the Production and Business Services Activity participants were approved for loans out of a total of 44 approved loans (34 percent); however, it was originally anticipated that the level of interaction between the two activities would be much greater. Incentives or requirements could have been included in implementer contracts to ensure that the two activities worked together. In addition, the targeted beneficiaries of each activity could have been aligned so there was more overlap. The minimum loan amount of $50,000 under the Investment Support Activity may have been the primary reason for the lack of integration between the Production and Business Services Activity, which generally served small, poor producers, and the Investment Support Activity, which generally served small- and medium-scale business owners.

Endnotes

1. Under the MCC country ownership model, MCC's counterparts are responsible for implementing compacts. Partner governments establish entities known as accountable entities (MCAs) to manage compact implementation. In El Salvador, the accountable entity was known as FOMILENIO and was created soon after compact signing.
2. The Highway Development and Maintenance (HDM-4) and Road Economic Decision (RED) models are MCC's standard tools to evaluate roads. Both models take into account vehicle operating cost savings and time savings as part of a decision making tool for road investments.

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