

## **Measuring Results of the El Salvador Productive Development Project**

### **Original: December 2014; Updated: May 2015<sup>1</sup>**

#### **Abstract**

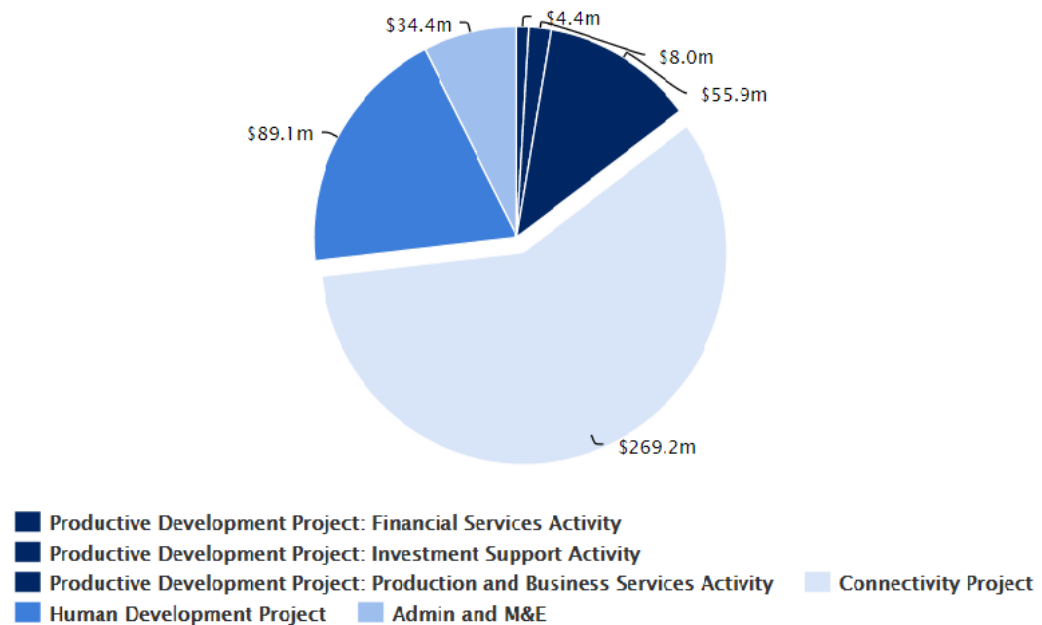
The \$68 million Productive Development Project represented 15% of the El Salvador Compact and consisted of three activities designed to transition producers to higher-profit activities, generate new investment, expand markets and sales, and create new jobs: i) Production and Business Services, (ii) Investment Support, and (iii) Financial Services. The independent interim impact evaluation on the Production and Business Services (PBS) Activity, covering the 2009-2010 phase of implementation, found varied results for the three value chains examined: impacts on employment for program participants, but no impacts on productive income in handicrafts; impacts on adoption, but no impacts on farm income in horticulture; and impacts on adoption and on 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. The final data collection rounds for dairy and horticulture were cancelled due to lack of power and changes in program implementation; therefore, the final evaluation of the dairy and horticulture sectors relied upon administrative data, which indicated that PBS assistance surpassed performance targets for increased production, employment, and sales. Even so, 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 PBS assistance package from 2008 to 2012. As for the Investment Support Activity, although it fell short of its original lending targets, interim results, covering the implementation period from 2007 to 2011, show that interviewed credit recipients appear to have experienced higher levels of investment, employment, production and sales than non-credit recipients. However, the comparisons of recipients and non-recipients merely suggest the potential positive effect of the credit on these key outcomes, as there is not a valid comparison group nor a sufficient sample size to attribute differences to the activity. Final evaluation results for the Investment Support Activity, as well as for the Financial Services Activity, are forthcoming in 2016.

#### **In Context**

The MCC compact with El Salvador was a five-year investment (2006-2012) of \$460.9 million in three projects: connectivity, human development and productive development. The Compact's goal was to advance economic growth and poverty reduction in the Northern Zone of El Salvador. The Productive Development Project of \$68 million included three project activities implemented concurrently in the Northern Zone: (i) production and business services, (ii) investment support and (iii) financial services. The subject of the evaluations summarized here are the \$56 million Production and Businesses Services Activity and the \$8 million Investment Support Activity. These two activities are equivalent to 94% of the overall Productive Development Project investment and 14% of the total compact. The Financial Services Activity final evaluation is forthcoming.

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<sup>1</sup> This Summary of Findings has been updated to include final impact evaluation results for the handicrafts value chain.



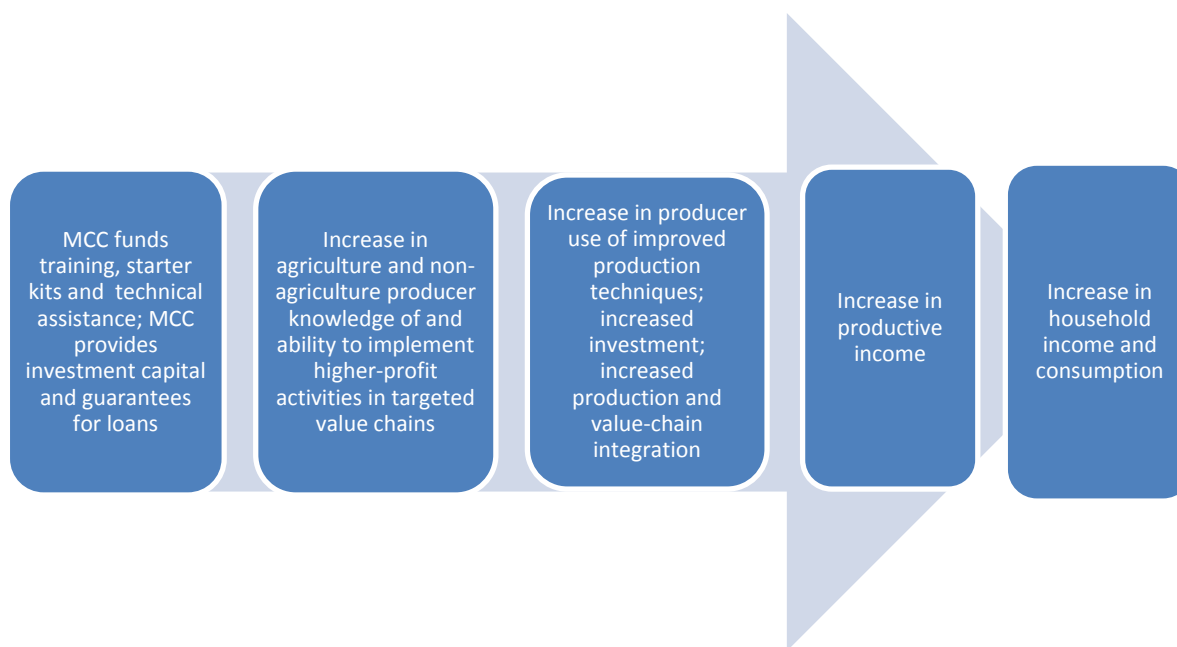
These figures are based on MCC obligations as of September 2012.

## Program Logic

The Productive Development Project was designed to transition producers to higher-profit activities, generate new investment, expand markets and sales, and create new jobs in ways that stimulate sustainable economic growth and poverty reduction. The Production and Business Services Activity included on-going technical assistance and training, in-kind donations (starter kits), demonstration plots, and technical and financial support for enterprises created and supported by the project in targeted value chains.<sup>2</sup> The Investment Support Activity provided investment capital to competitively selected applicants, who, due to insufficient collateral and lack of liquid assets, were not able to finance their investments for business activities located in and benefiting poor inhabitants of the Northern Zone. The Financial Services Activity provided guarantees to support increased lending activity by banks and non-bank financial institutions in the Northern Zone.

It was envisioned that the three activities would work together – a portion of Production and Business Services 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.

<sup>2</sup> The evaluations for the Production and Business Services Activity cover only the dairy, horticulture and handicrafts. These are three of the eight value chains targeted in the investment, and the majority of the investment.



There were several key assumptions underlying the program logic:

- Content and duration of training are sufficient to trigger behavior change.
- Starter kits/in-kind donations are sufficient to trigger sustained behavior change.
- Producers have necessary access to credit through existing structures supported by the Investment Support Activity or Financial Services Activity.
- Primary barrier(s) to adoption of improved techniques is lack of knowledge and/or funds for investment.
- Adoption of improved techniques leads to an increase in productivity.
- Increases in productivity lead to increases in productive income which, in turn, lead to an increase in overall household income.

It's important to note that over the course of the compact, the design of PBS was modified. The first phase (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, PBS 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, the second phase (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 handicrafts and dairy chains.

### Measuring Results

MCC uses multiple sources to measure results, including monitoring data during Compact implementation, and independent evaluations, which in many cases are continued Post Compact. Monitoring data is typically generated by the implementers, and specifically covers the 'treatment' group of farmers who received training under the Compact.

The table below includes the monitoring indicators that were tracked during implementation of the two activities. The Financial Services Activity indicators will be added when that evaluation is presented.

Indicators	Level	Actual Achieved	Target	Percent Complete
<b>Production and Business Services Activity</b>				
Farmers who have applied improved techniques	Outcome	11,520	7,000	165%
Enterprises that have applied improved techniques	Outcome	164	114	144%
Enterprises assisted	Output	272	292	93%
Farmers trained	Output	15,363	10,465	147%
Participants of technical assistance and training – non-agriculture	Output	2,104	3,035	69%
Hectares under production with support from the Productive Development Project	Output	25,399	15,000	169%
<b>Investment Support Activity</b>				
Loan Borrowers	Output	29	N/A	N/A
Loan Borrowers (female)	Output	5	N/A	N/A
Amount of Investment Support fund approved	Output	7,505,299	8,500,000	88.3%
Number of loans executed by the Investment Support Fund	Output	30	N/A	N/A
Number of loans approved by the Investment Support Fund	Output	44	35	125.7%

The average completion rate of output and outcome targets is 125% percent; and for 5 of the 8 indicators with targets, those targets were met or exceeded. It should be noted that these numbers are not always the same as the evaluation results because in addition to not taking the “without project scenario” into account as described below, the monitoring data comes from different data sources, data collection instruments, and samples of respondents.

Monitoring data is limited in that it cannot tell us what these farmers would have done in the absence of the MCC-funded training, credit, or technical assistance. For example, when implementers report that farmers have exceeded targets around adoption of new techniques, we do not know if these farmers adopted because of the training or would have adopted without the training. This is a key motivation for why MCC invests in **independent impact evaluations**, which estimate a counterfactual – what would have happened in the absence of the investment. For some activities, impact evaluations are not feasible or cost-effective and in those cases, MCC invests in **independent performance evaluations**. The evaluations for the Productive Development Project combine the use of impact evaluations and performance evaluations.

#### Summary of Productive Development Project Evaluations

Component	Evaluation Type	Methodology
Production and Business Services Activity	Impact (Interim) Performance (Final)	Interim Impact: Randomized Roll-out Final Performance: Pre-Post
Production and Business Services Activity – Handicrafts	Impact (Final)	Randomized control trial
Investment Support Activity	Performance (Interim) <i>Performance (Final) - Forthcoming</i>	Ex-Post
Financial Services Activity	<i>Performance (Final) – Forthcoming</i>	Ex-Post

### Evaluation Questions

The evaluations of the Productive Development Project were customized for each activity and were designed to answer the following questions:

Component	Evaluation Questions
Production and Business Services Activity	<p>Interim Impact:</p> <ul style="list-style-type: none"> <li>- What was the impact of the Production and Business Services Activity from 2010 to 2011 in the dairy, horticulture and handicrafts value chains on the use of new practices, production, employment creation, and income?</li> </ul> <p>Final Performance:</p> <ul style="list-style-type: none"> <li>- How was the PBS Activity designed and why was it designed in this way? What were the key objectives, activities, and outcomes? What was the target population?</li> <li>- How was the activity implemented? What were key facilitators and barriers to implementation?</li> <li>- Did the activity produce its desired results for production, employment creation, sales and income?</li> <li>- Are producer-owned enterprises on a path to sustainability following assistance?</li> </ul> <p>Final Handicrafts Impact:</p> <ul style="list-style-type: none"> <li>-What was the impact of the Production and Business Services Activity from 2009 to 2012 in the handicrafts value chains on the use of new practices, production, employment creation, and income?</li> <li>-How do these impacts compare to those detected in the interim evaluation?</li> </ul>
Investment Support Activity	<p>Interim Performance:</p> <ul style="list-style-type: none"> <li>- How was the activity designed and why was it designed in this way?</li> <li>- How was the activity implemented and did implementation meet initial expectations?</li> <li>- Did the activity produce the desired results, including job creation and increased income among loan recipients?</li> </ul>

### Evaluation Results

#### Productive Development Project Overall

The Productive Development Project evaluations were not designed to quantitatively examine the overall effects of the combined project. However, the performance evaluations provide some insights into how the two activities highlighted here interacted. By July 2011, at least 15 PBS participants were approved for loans out of a total of 44 approved loans (34 percent). This was not the level of interaction originally envisioned between the two activities. Stakeholders generally cited the minimum loan amount of \$50,000 under the Investment Support Activity as a primary reason for the lack of integration between Production and Business Services assistance (which generally served small, poor producers) and the Investment Support Activity (which generally served small- and medium-scale business owners).

### **Production and Business Services Activity – Interim and Final Impact Evaluation**

Although most output and outcome targets for the Production and Business Services Activity were met or exceeded, the independent interim evaluation found varied results for the three value chains. In dairy, the evaluation estimates there were impacts on adoption and increases in farm income. In horticulture, the evaluation estimates impacts on adoption, but no impacts on farm income. In handicrafts, the evaluation estimates impacts on employment for program participants, but no impacts were detected on productive income. In the horticulture evaluation, it should be noted that the sample was underpowered since only about 30 percent of the treatment group enrolled in the training program. This limits the ability to draw conclusions about ultimate impact, though the evaluation still provides ample opportunities for learning.

The final data collection rounds for dairy and horticulture were cancelled, however. In handicrafts, additional follow-up data from the final impact evaluation provided more information on the impacts of this activity. The final impact evaluation of the handicrafts sector showed that the increase in employment detected in the 2009-2010 phase of handicrafts implementation (Phase I) had disappeared by the end of Phase II (2012); thus no net impact was detected on employment after nearly three years of assistance. Similarly, no impacts were detected on net handicraft income, net annual household income, or household consumption by the end of Phase II. However, negative impacts were detected on salaried income during Phase II (2011 and 2012). The performance evaluation discussed below provides more information on the results of the handicrafts intervention.

The interim evaluation results below capture the phase of training that occurred from 2010 to 2011 for each of the three sectors, and the final evaluation results capture the results from 2011 to 2012 for the handicrafts sector only.

<b>Evaluator:</b>	Mathematica Policy Research
<b>Methodology</b>	Randomized roll-out
<b>Evaluation Period</b>	12 months for dairy and horticulture; 3 years for handicrafts
<b>Adoption and employment</b>	<p>For the 2010-2011 phase of dairy implementation (Interim):</p> <ul style="list-style-type: none"> <li>• 5 percentage points more likely to conduct quality control</li> <li>• 23 percentage points more likely to take measures to reduce costs</li> <li>• 7 percentage points more likely to report looking for new clients</li> </ul> <p>For the 2010-2011 phase of horticulture implementation (Interim):</p> <ul style="list-style-type: none"> <li>• 2 percentage points more likely to report selling to enterprises</li> </ul> <p>For the 2009-2010 phase of handicrafts implementation (Interim):</p>

	<ul style="list-style-type: none"> <li>.13 increase in annual employment generated by program participants (full-time equivalent jobs)</li> </ul> <p>For the 2011-2012 phase of handicrafts implementation (Final):</p> <ul style="list-style-type: none"> <li>The positive effect on employment disappeared by the end of Phase II in 2012</li> </ul>
<b>Productive Income</b>	<p>For the 2010-2011 phase of dairy implementation (Interim):</p> <ul style="list-style-type: none"> <li>\$1,849 increase in net annual productive income</li> </ul> <p>For the 2010-2011 phase of horticulture implementation (Interim):</p> <ul style="list-style-type: none"> <li>No impacts detected on net annual productive income</li> </ul> <p>For the 2009-2010 phase of handicrafts implementation (Interim):</p> <ul style="list-style-type: none"> <li>No impacts detected on net annual productive income</li> </ul> <p>For the 2011-2012 phase of handicrafts implementation (Final)</p> <ul style="list-style-type: none"> <li>No impact detected on net annual productive income</li> <li>Negative impacts detected on salaried income consisting of losses of \$190 and \$177 in 2011 and 2012, respectively</li> </ul>
<b>Household Income</b>	<p>For the 2010-2011 phase of dairy implementation (Interim):</p> <ul style="list-style-type: none"> <li>No impacts detected on net annual household income or consumption by program participants</li> </ul> <p>For the 2010-2011 phase of horticulture implementation (Interim):</p> <ul style="list-style-type: none"> <li>No impacts detected on net annual household income or consumption by program participants</li> </ul> <p>For the 2009-2010 phase of handicrafts implementation (Interim):</p> <ul style="list-style-type: none"> <li>No impacts detected on net annual household income or consumption by program participants</li> </ul> <p>For the 2011-2012 phase of handicrafts implementation (Final):</p> <ul style="list-style-type: none"> <li>Negative impact on net annual household income of \$686 in 2011, but no note-worthy impacts on household income were found in 2012</li> <li>No impacts detected on household consumption by program participants</li> </ul>

### Production and Business Services Activity – Final Performance Evaluation

Due to the changes in project design in the middle of implementation and low participation of the treatment group in the horticulture evaluation, MCC cancelled the final data collection rounds for the PBS impact evaluation (for horticulture and dairy; further handicrafts analysis is described above) and decided to conduct a final performance evaluation. The final performance evaluation is unable to provide quantitative estimates of outcomes achieved by the activity; however it provides insights into implementation facilitators and barriers, as well as the potential sustainability of the enterprises supported under the project.

<b>Evaluator:</b>	Mathematica Policy Research
<b>Methodology</b>	Pre-Post
<b>Evaluation Period</b>	2007 to 2012

<b>Implementation Facilitators and Barriers</b>	<ul style="list-style-type: none"> <li>• One key facilitator of implementation of the PBS Activity was the large degree of flexibility on the part of implementer staff to modify the PBS assistance model, when stakeholders determined that the activity's primary focus on production was not sufficient to achieve desired outcomes.</li> <li>• Implementation was constrained by a few factors: large participant targets which resulted in diluted service delivery, lack of intensive assistance related to market access and business development (primarily in Phase I), non-strategic use of donations and Phase II's short implementation timeframe.</li> </ul>
<b>Production, Employment, Sales</b>	<ul style="list-style-type: none"> <li>• Administrative data indicate that PBS assistance surpassed performance targets for increased production, employment, and sales.</li> <li>• However, because administrative data do not take into account what would have happened without the project, and the interim impact findings are not generalizable to the full population of PBS participants over the entire PBS implementation period, it is impossible to make a definitive conclusion regarding the impact of the full PBS assistance package from 2008 to 2012.</li> </ul>
<b>Sustainability of Enterprises</b>	<ul style="list-style-type: none"> <li>• PBS provided training, donations, and organizational and logistical support to all five enterprises in a timely manner. However, the utility of this assistance for dairy and horticulture enterprises is unclear as it appeared to rely on a set of weak assumptions about the enterprises' business models. In contrast, efforts to assist pre-existing businesses in the handicrafts value chain appeared largely successful.</li> </ul>
<b>Results by Value Chain</b>	<ul style="list-style-type: none"> <li>• Horticulture: <ul style="list-style-type: none"> <li>○ According to implementers, participants generally experienced increases in production, sales, and income.</li> <li>○ Some small-scale participants reported deficient technical assistance and suboptimal outcomes.</li> <li>○ Zamorano was particularly successful in improving production and sales.</li> </ul> </li> <li>• Dairy: <ul style="list-style-type: none"> <li>○ Participants spent less on cattle feed and experienced higher production and sales in the dry season.</li> <li>○ Among all service providers, TechnoServe and CARE generated particularly strong results.</li> <li>○ Relatively high-resource participants received more assistance and exhibited better results.</li> </ul> </li> <li>• Handicrafts: <ul style="list-style-type: none"> <li>○ Supported enterprises and artisans reported high satisfaction with assistance and positive results.</li> <li>○ Workshop owners increased levels of paid labor.</li> <li>○ Workshop owners benefited substantially from new contracts established under PBS assistance.</li> </ul> </li> </ul>

### Investment Support Activity – Interim Performance Evaluation

The Investment Support Activity fell short of its original lending targets; however, interviewed credit recipients appear to have experienced improved outcomes compared to non-credit recipients. These results however are anecdotal because the evaluation does not have a valid comparison group for loan recipients or a sufficiently large sample size to attribute differences in outcomes to the credit. In addition, as most borrowers are still completing investments from their business plans, more detailed information regarding sales, income, and employment will be collected in a future survey round.



<b>Evaluator:</b>	Mathematica Policy Research
<b>Methodology</b>	Ex-Post
<b>Evaluation Period</b>	2007 to 2011
<b>Implementation</b>	<ul style="list-style-type: none"> <li>• The Investment Support Activity fell short of its original lending targets—both in value and number of loans approved—due to delays in establishing the trust fund and defining the investment product; a lack of capacity to compose and analyze viable business plans; implementer’s limited experience as a first-tier lender; and a lengthy and complex loan development and approval process.</li> <li>• It is difficult to argue that the activity targeted individuals and organizations with insufficient capital and liquid assets to finance their investments, as mandated in the compact. The investment committee applied increasingly high collateral standards as implementation progressed. By mid-2010, not only was the committee not targeting applicants with insufficient collateral, it was actually excluding applicants with less than 100 percent collateral from consideration for FIDENORTE credit.</li> <li>• It appears that the Investment Support Activity served its target population of poor producers—particularly poor farmers with some level of working capital—as well as enterprises that benefit poor individuals. In addition, it appears as though the activity complied—at least to some extent—with its original spirit of providing credit to organizations and individuals who otherwise could not have financed their investments.</li> </ul>
<b>Results</b>	<ul style="list-style-type: none"> <li>• Interviewed credit recipients experienced higher levels of investment, employment, production and sales than non-credit recipients. However, the comparisons of recipients and non-recipients merely suggest the potential positive effect of the credit on these key outcomes, as there is no valid comparison group or sufficient sample size to attribute differences to the activity.</li> </ul>

## Lessons Learned

MCC released impact evaluations from farmer training activities in five countries in October 2012. Looking across these five, and informed by lessons about impact evaluations in agriculture more broadly, MCC has identified a set of common lessons. Four of these lessons as illustrated by the El Salvador case are described below. Additional lessons from the performance evaluations have also been identified.

- **Always return to the program logic.** If the program logic and implementation plan include a variety of value chains, the evaluation must ensure sufficient power to track early and realistic impacts on income in each value chain. In El Salvador, the evaluation was not originally designed to be done by value chain but by all three sectors together. When unbundled, the design was “underpowered” to report on individual value chains.
- **Linking to household income is difficult.** In El Salvador dairy, the evaluators find that dairy farmers’ farm incomes roughly double that of the control group; however, they do not find an impact on household income or consumption. This is likely because the number of groups of dairy farmers that were randomized was small, and the evaluation was underpowered to report changes in household income by value chain. This needs to be taken into consideration for future evaluation design.

- **Test traditional assumptions.** In El Salvador, some of the evaluation findings suggest that tailored trainings and donations may produce better results in the short-term. However, the project and evaluation were not designed to test effects of variation in training content or duration in order to confirm this. MCC and MCAs will look for future opportunities to use impact evaluations to test assumptions around the appropriate content and duration of training to maximize impact.
- **The randomized roll-out evaluation approach has risks.** In a randomized roll-out approach, a first round of treatment farmers is compared to a control group of farmers that receive training at a later date. The key to this approach is that there be enough time between the two phases to see behavior change and accrual of benefits for the first farmers *before* the second round of farmers is trained. In the case of the handicrafts project, more will be learned with the follow-up data and impact analysis on intermediate and final outcomes. For the other value chains, however, the control groups have been trained as per the agreed roll-out methodology and additional learning using these evaluations is limited.
- **When important for unbundling program results, require the reporting of detailed cost information.** Over \$10 million was available for donations to beneficiaries under the Production and Business Services Activity. However, MCC did not require MCA and its implementer to report in detail the amount of donations that were provided to individual farmers or enterprises. Detailed records were kept by the implementer; however only high-level aggregated numbers were reported back to MCC. This has resulted in the inability of the evaluation to analyze who benefited the most from donations and whether or not receiving large amount of donations was correlated with improved outcomes. To the extent that MCC wants to analyze this type of information in future projects, detailed reporting on costs from implementers should be required by their contracts and potentially required from accountable entities as well.
- **The activity's objective, target population, type of intervention, definitions, selection methodology, and expected results should be defined prior to investment.** While these were stated in some form in the Compact for the Investment Support Activity, the definitions were not clear up-front or shared by all of the stakeholders. As a result, the interpretation of this language was debated throughout implementation, affecting the size range of the investments, the interest rate and the collateral requirements. In future circumstances, MCC should be very clear when drafting investment related language in Compacts in order to set out the purpose, activities and expected results of the intervention, which should be accompanied by a detailed term sheet to guide implementation preparation and investment.
- **Implementer capacity matters.** This is clear yet, MCC and FOMILENIO could have addressed this more proactively and earlier in the Compact. The relationship between BMI and FOMILENIO was governed through the trust agreement and an Implementing Entity Agreement (IEA) but compliance and enforcement of the agreements was a struggle throughout implementation. In hindsight, there should have been even better management of the IEA, more performance based incentives, and potentially some technical assistance to ensure that MCC funds were used in the most optimal manner. At the close of the program, the Investment Support project ERR was lower than anticipated. This was partially because it cost administratively the same amount of money to approve \$7.5 million in loans as it could have cost to execute the program with the larger originally

planned amount. This does not diminish the value of the overall program, but rather highlights a missed opportunity for BMI, FOMILENIO, and MCC to invest in more SMEs in the Northern Zone.

- **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 (PBS) and the Investment Support Activity would work together. Producers receiving technical assistance and training under PBS were to receive help developing business plans to access credit under the Investment Support Activity. By July 2011, at least 15 PBS participants were approved for loans out of a total of 44 approved loans (34 percent). This was not the level of interaction originally envisioned between the two activities. 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 that 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 PBS (which generally served small, poor producers) and the Investment Support Activity (which generally served small- and medium-scale business owners).

#### **Next Steps**

MCC has additional evaluations and analysis underway that will provide more results and learning about progress in El Salvador:

- Final performance evaluation for Investment Support Activity and Financial Services Activity (2016)