



# Colombia's Coffee Growers' Smart ID Card:

Successfully Reaching Rural Communities with Digital Payments

*By Bankable Frontier Associates (BFA) under the supervision of Beatriz Marulanda*

## ABOUT BTCA

The Better Than Cash Alliance (BTCA) is an alliance of governments and private sector and development organizations committed to replacing the use of cash payments with electronic payments, where appropriate, and to promoting a 'cash-lite' economy.

Shifting payment of salaries, social welfare and relief payments, payments to suppliers, remittances, etc. from cash to electronic has the potential to improve the lives of low-income people, particularly women, while giving governments, the private sector, and the development community a more transparent, time- and cost-efficient, and often safer means of making and receiving payments.

### **The Better Than Cash Alliance:**

1. Advocates for the use of all forms of electronic payments where they provide a preferable payment option to cash;
2. Collaborates with program partners to mobilize available technical expertise and resources to identify and implement the most effective approach to make the transition from cash to electronic payments; and
3. Conducts research, documents good practices, and produces knowledge products to address the barriers to adoption and drive the effective shift from cash to electronic payments globally.

BTCA's Development Results Focused Research Programme (DRFRP) accelerates the generation and dissemination of knowledge and tools for stakeholders transitioning part of their payments from cash to electronic. The DRFRP has three components: 1) Readiness diagnostics, which compile existing data on the volumes, values, and payment means for each kind of payment made by governments, the private sector, and development community partners, and assess the country's readiness to replace cash payments with electronic payments; 2) Case studies of ongoing shifts; and 3) Toolkits to provide practical steps for BTCA stakeholders to plan, measure, and implement shifts.

The DRFRP is managed, on behalf of BTCA, by a consortium led by Bankable Frontier Associates, a Boston-based consulting firm, with advice from experts from the World Bank Payments Group and the CGAP Technology Team, as well as local research staff.



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## **BTCA CASE STUDY SERIES**

The BTCA case study series seeks to highlight specific examples of shifts to electronic payments by government agencies, businesses, or development partners. Each case study documents the extent of the shift and the factors that have helped or hindered it, in order to provide insights which are relevant to a wide readership interested in how to shift from cash to electronic payments.

## **AUTHORS**

The lead authors of this case study are Beatriz Marulanda, Lizbeth Fajury, and Ursula Borrero for Marulanda Consultores, which is part of the Bankable Frontier Associates-led consortium responsible for the Better Than Cash Alliance's Development Results Focused Research Programme.

## **ACKNOWLEDGMENTS**

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### Notes:

- Content and data in this document are based on information gathered during the fourth quarter of 2013, and therefore represent data prior to this date.
- All calculations are converted to US dollars using an exchange rate of COP 1.914.22, which corresponds to the average market rate for the last six months of 2013, published by Banco de la Republica.



# 1 Introduction

Coffee is a vital product for the Colombian economy, representing 3% of exports and almost 2% of GDP. Nearly three-quarters of the country's coffee is grown by more than half a million small farmers, who each have less than five hectares of land. Coffee growers are all represented by the *Federación Nacional de Cafeteros de Colombia*<sup>1</sup> (the Colombian Coffee Growers Federation, or the *Federación*). The *Federación* is a large membership organization, the board and governance structure of which is elected by the farmers themselves. The *Federación*, through related institutions, provides services such as technical assistance to farmers; channels government subsidies to farmers; and offers a guarantee scheme by which farmers can sell their coffee to the *Federación* at a set minimum price. This requires the *Federación* to make payments to farmers throughout the country, especially in remote areas where there are few if any alternative buyers of coffee.

By 2005, the *Federación* faced mounting problems with its coffee purchase scheme. The costs and

risks of transporting cash had risen dramatically, in part because of rising insecurity from an insurgency in some rural areas. In addition, the traditional banking infrastructure had been shrinking with the closure of rural branches following a local financial crisis in the late 1990s. When the *Federación* began to pay farmers in checks instead of cash, farmers would often discount checks at well below face value to get cash in hand.

So the *Federación* embarked on an ambitious project to shift the payments to coffee growers to an electronic form. The project would leverage the organization's identity card, which could be used to identify farmers for voting in *Federación* elections and for storing data about the farms for technical assistance. However, the project faced substantial obstacles: In 380 of the 592 municipal areas in which coffee was grown, there was very limited or no presence of financial institutions. And most of the farmers were unbanked.

The tender to offer these services was won by a bank later incorporated

into the large Banco de Bogotá banking group. The bank offered a personalized prepaid card with both a magstripe and a chip. This card was designed to operate only on a closed-loop basis at ATMs or at the special point-of-sale (POS) devices deployed by the bank at coffee purchase points and rural merchants. Based on the previous ID that coffee growers had, and taking into account the new chip incorporated, it was called the *Cédula Cafetera Inteligente* (or the Coffee Smart ID Card, referred to hereafter as the *Cédula*). Farmers would be paid for their coffee, as well as for government benefits, using the card. And they could then either withdraw the balance in cash and/or use the card for purchases at participating merchants.

The bank began issuing cards in 2007, and by June 2013 82% of all coffee growers had one; 5.3 million payments were made to farmers over that period, totaling \$740 million. The bank rolled out 1,377 POS devices; by end of 2012, 99% of coffee growing municipalities had at least one POS device, while 77% had at least one ATM that could be accessed using the *Cédula*.

This case study is the first to examine this large project to shift business-to-business payments along a rural value chain to electronic means (see Figure 1). It relies on the data and insights from *Federación* and bank leaders, as well

as, for the first time, focus groups and in-depth discussions with the coffee growers themselves.

Six years into the program, the results are revealing and important for efforts to shift from cash and check to electronic payments. First, **there is little question of the approach's cost efficiency for the *Federación*: It was able to reduce costs over the period by up to 79% relative to cash, saving \$15.5 million.**<sup>2</sup>

Second, the card was used in unexpected ways: Most of the receipts were tied to the disbursement of various government subsidy schemes, rather than *Federación* coffee purchases. The cards and a supplementary database of farmers and their farms **allowed the disbursement of subsidies to be better targeted, increasing efficiency, transparency, speed, and security** — made more important during a period when the coffee crop was hit by weather and price shocks.

Third, it made little progress in persuading farmers to store and use electronic value, rather than cash, for their own purchases, and it struggled to develop a strong merchant network that would in turn incentivize card usage for purchases. This 'last mile' problem is a remaining challenge for the *Cédula* and many other business value chains and government subsidy programs.

Finally, the scheme did not consider cardholders as formal bank clients, limiting the impact the card could have on financial inclusion.


In 2014, the *Federación* and the bank re-launched the *Cédula* to address many of the challenges it has faced. **The card will now be a full savings account at the bank with access to all ATM and POS devices in the country, making the card an on-ramp to financial inclusion.**

This case study focuses on the *Federación* and the Colombian government as the payer. The coffee growers themselves were intended to be payers under the project but supply- and demand-side factors prevented this. Businesses — small-scale farmers — are the payees.

Section 2 presents context of coffee in Colombia and the role of the *Federación*. Section 3 tells the story of *Cédula*'s development. Section 4 shows the project's main outcomes — the slow take-up of the card for coffee sales and input purchases, and the hugely successful delivery of subsidies and credits. Section 5 outlines the steps the *Federación* and Banco de Bogotá had to take to implement the project and the challenges it faced. Section 6 looks at the costs and benefits for those two project stakeholders. Section 7 uses focus group research to

**FIGURE 1** Payment grid and focus of case study<sup>3</sup>

		PAYEE			
		G	B	P	D
PAYER	G				
	B				
	P				
	D				

 Focus of case study

G = Government; B = Business; P = Individuals; D = Development partners

provide the perspective of the coffee growers. Section 8 briefly describes the next iteration of the program, to begin in 2014. And Section 9 concludes with lessons for organizations considering similar closed-loop, prepaid card payment mechanisms.



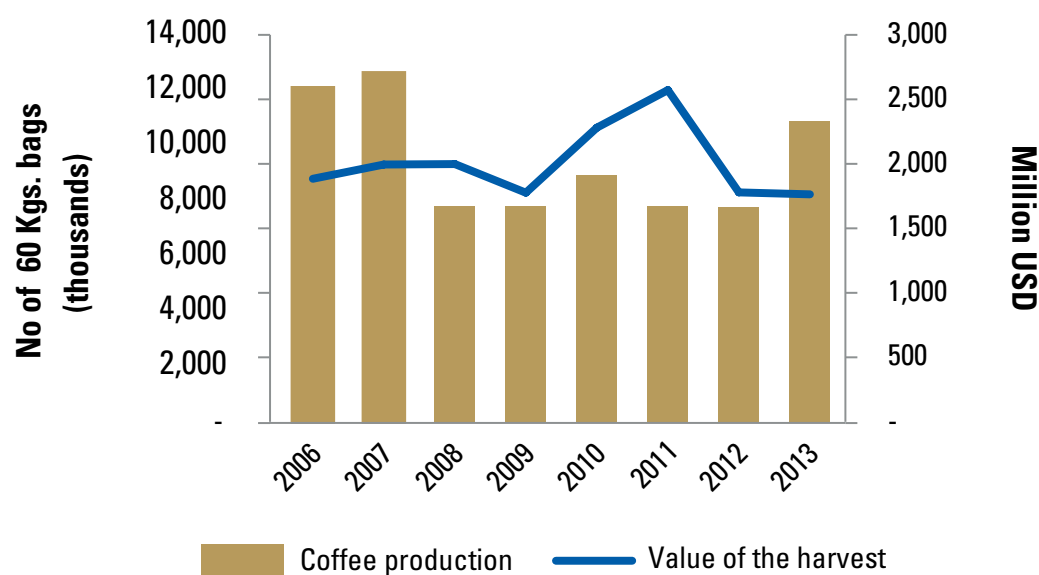
## 2 Context: Coffee in Colombia and the *Federación*

Colombian coffee is recognized as one of the best coffees in the world. And coffee is one of the most important products for Colombia's economy (see Figure 2). Production is relatively stable, worth over \$2 billion per year and representing 3% of the country's exports and 1.6% of its GDP.<sup>4</sup>

Behind this success is the work of more than 540,000 smallholder farmers. Coffee is produced in 54%

of the country's municipalities<sup>5</sup> by producers who include indigenous populations and Afro-Colombians. It is cultivated in small plots; 96% of farmers are small producers (with farms of 5 or fewer hectares) and they produce 71% of the country's coffee (see Table 1). The small size means coffee growing is an essentially family-run business.<sup>6</sup> The coffee industry, directly and indirectly, employs more than 2.3 million Colombians.

**FIGURE 2** Colombia's coffee production volume and value



**TABLE 1** Producer classification by coffee area

Classification per coffee area	Number of farmers	%
Small coffee growers (<=1 has.)	298,276	52%
Small coffee growers (>1 y <=2 has.)	147,499	26%
Small coffee growers (>2 y <=3 has.)	60,010	10%
Small coffee growers (> 3 y <=4 has.)	27,816	5%
Small coffee growers (> 4 y <=5 has.)	15,013	3%
Medium coffee growers (> 5 y <= 10 has.)	17,139	3%
Big coffee growers (> 10 has.)	6,312	1%
<b>Total coffee growers</b>	<b>572,065</b>	<b>100%</b>

Source: *Federación*

Coffee growers are represented and supported by the *Federación*,<sup>7</sup> founded in 1927 and now one of the largest rural NGOs in the world. The *Federación*, through a range of institutions,<sup>8</sup> provides many services to farmers such as technical assistance; promotes the brand of Colombian coffee; has established more than 185 direct retail shops; enables loans; and distributes government subsidies.



The *Federación* has a democratic structure, holding elections every four years<sup>9</sup> to choose representatives at a municipal and state level, who are then selected to serve on national leadership bodies<sup>10</sup> that set policies and programs for the sector. To vote, farmers need what is called a *Cédula Cafetera* (or coffee identification), in use since 1928 and carried with pride as a sign of belonging to the guild; it is also used to access the *Federación's* technical assistance and government subsidies.

The *Federación*, through the *Fondo Nacional del Café* (FoNC),<sup>11</sup> also provides growers with a coffee purchase guarantee. Coffee growers can sell their crops to private buyers and exporters, or, if the price on the private market is too low, they can sell to cooperatives,<sup>12</sup> many of which act on behalf of the *Federación*. The FoNC guarantees coffee growers a minimum purchase price<sup>13</sup> for their crops, thus ensuring coffee growers a transparent market and protecting their income. The FoNC offers credit to cooperatives to make these purchases.

Since private buyers tend to offer better prices, the *Federación* buys about 30% of the country's production. But the guarantee is essential in many remote municipalities, where there are few if any private buyers.

# 3 The limits of cash and the design of the *Cédula*

To make crop purchases, the *Federación*, through the cooperatives, previously depended on the mobilization of huge amounts of cash or highly complex check distribution strategies. Between 2000 and 2005, as a result of the country's security situation, including the presence of illegal armed groups in many coffee-growing municipalities, several problems emerged:

- The risk of transporting cash across the country increased, affecting the financial sector in general and specifically the cooperatives. The *Federación* had to continue guaranteeing the purchases — so in many cases it had to assume the increased cash transportation costs.
- The security concerns accelerated the flight of financial institutions from rural areas,<sup>14</sup> a decrease that had early been spurred by the financial crisis in the late 1990s, and forced the providers that remained to transport cash by air.<sup>15</sup>
- To avoid these costs, the cooperatives started using checks to buy coffee. But checks depend on liquidity to cash out. The vicious cycle this created also led to a secondary market for checks, forcing coffee growers who needed cash to negotiate the check with a discount of up to 5% of its value.
- The *Federación* faced the same challenges when it distributed government subsidies — high costs of cash transportation and operational difficulties in terms of verification.
- Also, the credit lines offered by FoNC to cooperatives for coffee purchases were being used to finance the cooperatives' own operations, with a high opportunity cost of money for the fund.

Looking for a comprehensive solution, the *Federación* issued a tender in 2005 for the creation of a program that would:

- Serve as an ID for coffee growers (for *Federación* voting) with the capability to store data about the cardholders' farms;
- Allow for payments to coffee growers for crops sold to the *Federación*, and store data on these purchases (like type of coffee sold);
- Allow for the payment of other transfers, such as subsidies, from the *Federación* to the coffee growers;
- Guarantee the coffee growers' access to withdraw cash, especially in municipalities without a financial presence, both online and offline;
- Provide at least three transactional points in at least 380 municipalities<sup>16</sup> (one of which should allow cash withdrawal), and keep track of "points" accumulated by coffee growers at designated commercial establishments — to be used for discounts or prizes.

The solution provided by Banco de Bogotá,<sup>17</sup> the winner of the tender process, was basically a personalized prepaid card, not affiliated with any franchise, with both a magnetic stripe and a chip.<sup>18</sup> The yellow *Cédula* card, with the farmer's picture, was given to all those farmers with more than 0.5 hectares and 1,500 trees (the

*Federación's* eligible voting members). Smaller farmers, who could receive benefits from the *Federación* but not vote, were given a white card.<sup>19</sup>

The *Cédula* program had the following characteristics:

- The card could only be loaded by coffee purchases or subsidies and other resources credited by the *Federación*.
- Coffee growers could cash out using the magnetic stripe at any Banco de Bogotá ATM at no cost, at ATMs of the same bank group for a discounted fee, and at any other bank's ATM for the normal fee.
- Coffee growers could also use the card for purchases at stores with specialized POS devices — of the more than 1,300 POS devices the bank installed on the closed-loop network, 474 could be used for purchases — and also to pay for public services and transfer money from the magnetic stripe to the chip.
- The chip could store 17 fields' worth of information about the coffee growers, as well as the card's balance for making offline POS transactions and cashing out offline.
- Coffee growers were considered bank users, not clients — and the bank was prevented from cross-selling its other products to the cardholders.



## 4 Subsidies and credits as unexpected drivers for the project

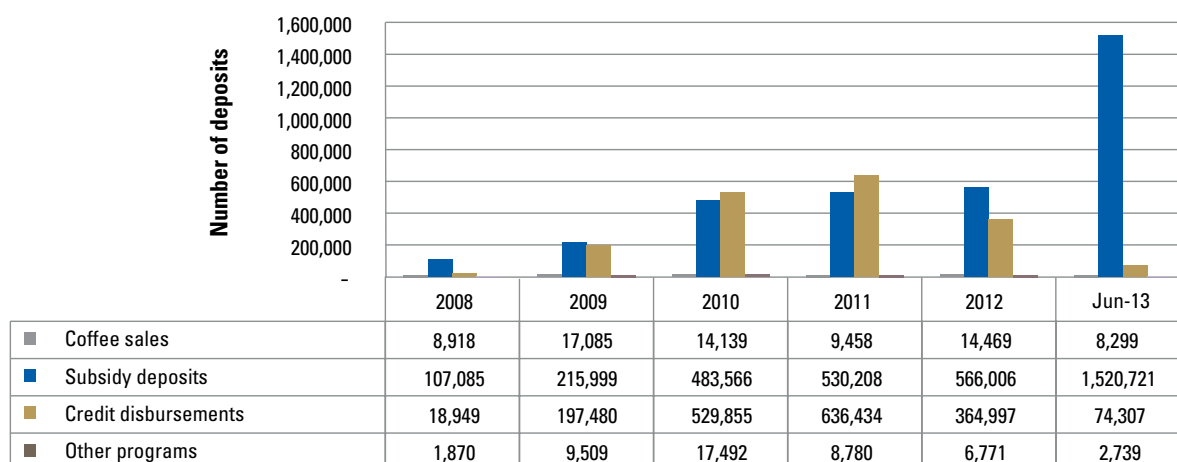
Usage of the *Cédula* cards was limited early in the project<sup>20</sup> at least in part because many farmers did not have money on their cards. This was caused by two factors: 1) Few coffee growers sold their crops to the *Federación* and asked that revenue to be deposited to the card (even as of June 2013, coffee purchases represented just 1% of the number of transactions, and 4% of the value, disbursed to the cards during the life of the project<sup>21</sup>); and 2) Many of the early subsidies distributed over the *Cédula* were narrowly tailored to specific farmer profiles.

The turning point — the key driver of both activation and usage — was the disbursement of massive government subsidies and credits over the cards. These resources were not expected to be a major payment stream during the project's design.

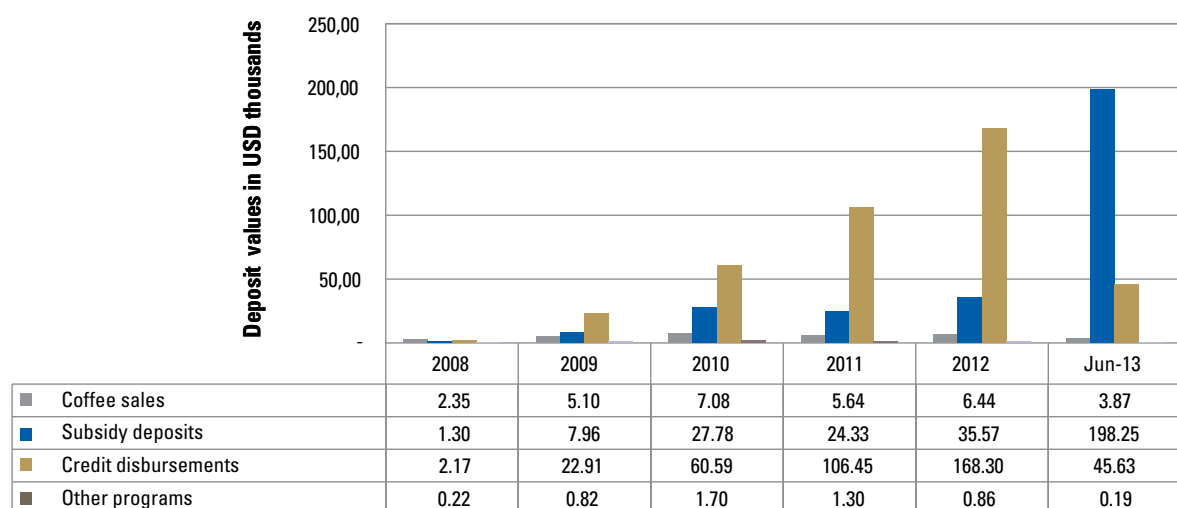
The *Cédula*, complemented by a geospatial database,<sup>22</sup> enabled the *Federación* to design and focus subsidies and credits — to respond rapidly to natural disasters or changing circumstances in the market (such as decreases in world prices) —

in a way that ensured certainty and transparency (see Figures 3 and 4). As a result, as of June 2013, 64% of the transactions disbursed through the *Cédula* came from more than 15 subsidy programs launched in this period,<sup>23</sup> and 34% came from credit disbursements (representing 40% and 55% by value, respectively).



**FIGURE 3** Number of deposits by type of program

Source: Federación

**FIGURE 4** Value of deposits by type of program

Source: Federación

Among these is the Program to Support Coffee Growers' Income (or PIC, its acronym in Spanish). Created in 2012 to compensate for the decline in the international price of coffee,

PIC is a subsidy to all coffee growers (see Box 1 below) and accounts for 1.6 million disbursements for \$215 million — 95% of the PIC has been distributed through the *Cédula*.

**Box 1****PIC, a major government subsidy, gets *Cédula* cardholders to use their cards**

The Program to Support Coffee Growers' Income (PIC for its initials in Spanish) had as its impetus the steep decline of the price of coffee on the international market, combined with a strong appreciation of the Colombian currency. The incentive operates when the internal reference price falls below \$365, giving farmers access to a payment of \$76 per 125 Kg batch of dried pergamino coffee sold in the market. If the price falls below \$251, the PIC incentive will increase by \$10, but the reference price plus the incentive can never surpass \$366. The incentive recognition is done against a formal bill from a *Federación*-registered buyer. More than 95% of the total PIC subsidy disbursements (1.6 million) from October 2012 to June 2013 were done through the *Cédula*. As of September 2013, 340,817 coffee growers in 576 municipalities had received the PIC.

Equally important for the *Cédula* was the disbursement of credits under a program called Permanence, Sustainability and Future (PSF),

created in 2009 to incentivize the renewal of the oldest coffee crops in the country (see Box 2 below).

**Box 2****An unexpected use of the *Cédula*: Credits for coffee plantation renewals**

The Permanence, Sustainability and Future (PSF) program was designed by the *Federación* with the Ministry of Agriculture and Rural Development to encourage coffee growers with traditional coffee plantations of less than 5 hectares to renew their crops, substituting for new rust-resistant coffee varieties. Loans had a 7-year term with a 2-year grace period, during which interest, at subsidized rates, was paid by the *Federación*.

The participating banks received a 100% credit guarantee, 80% covered by the Agricultural Guarantee Fund and the remaining 20% by a fund created by the *Federación*. Credits of \$3,134 per hectare were disbursed in 20 installments of \$115 each, to give the coffee growers a permanent monthly income, while the plantations' productive cycle restarted. Furthermore, the coffee grower, once the renewal was demonstrated, received an incentive from the Ministry equivalent to 40% of the credit's value, which was directly paid to one of the four participating banks as a prepayment, reducing the debt obligation. The *Cédula* was used as a disbursement mechanism for installments.

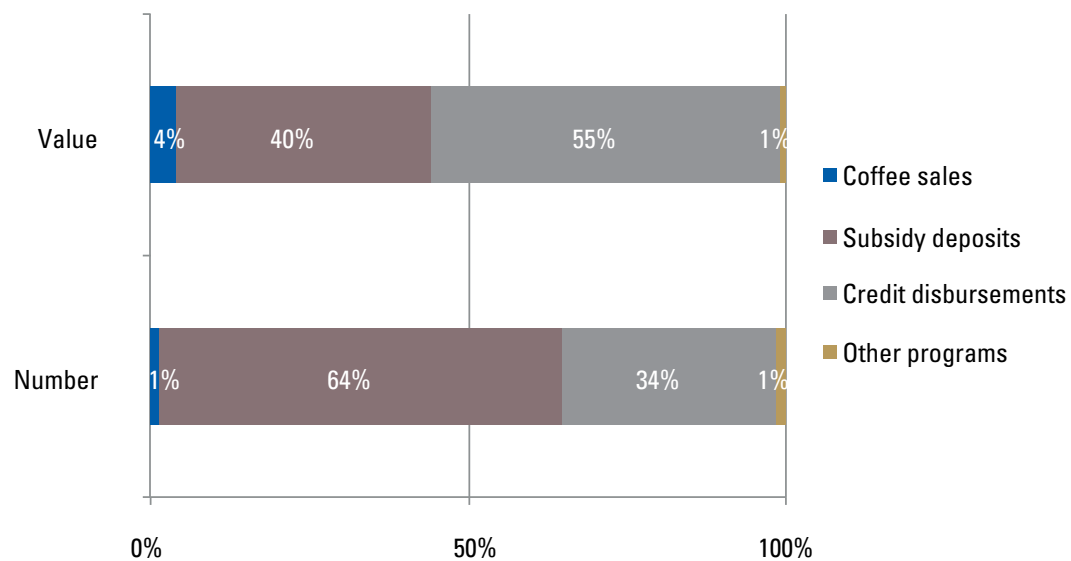
The program was well received by coffee growers and the banks. However, given the high operational costs of the small, regular disbursements, in 2011 these were reduced from 20 to 3 installments (40%, 30%, 30%), and the average disbursement value was increased to \$167; in 2012 it changed to one disbursement between \$469 and \$587. Likewise, the 20% guarantee financed by the *Federación* had to be eliminated, reducing the incentive for the banks, which left Banco Agrario almost exclusively responsible for the program.

Under the PSF more than 163,000 farmers have benefitted from credits of an average value of \$2,600 per producer, allowing the renewal of 156,000 hectares of coffee plantations.

For a fuller explanation of the strategy, see <http://www.youtube.com/watch?v=kjFA8L1ORBw>.

Figure 5 below shows the outsized role of subsidies and credits in the *Cédula* project.

**FIGURE 5** Deposits into the *Cédula* in number and value (2007-June 2013)



Source: Federación



# 5 Necessary investments and innovations, and the project's challenges

To make the *Cédula* scheme work, it needed:

1. New cash-out and purchase points in rural areas;
2. Access to existing cash-out points like ATMs in areas where they were present;
3. The distribution and activation of hundreds of thousands of cards; and
4. New technologies and adaptations as the program grew.

## 5.1 A new channel for a rural value chain

According to the initial tender, the bank had to guarantee at least one cash disbursement point per municipality; that point could be an ATM (Banco de Bogotá's or others'), an extended cashier, or a merchant, and it could operate online or in batch. Additionally, the contract specified that the bank had to install a POS at each coffee purchasing point, to make online, real-time transactions. A second or

third POS, for cashless purchases, could be installed at a commercial establishment and operate offline.



**“In the past 2 years I haven’t made more than 10 transactions with the card, so finally last week we put the POS away. The coffee growers come here to see if they can withdraw money, not to buy electric appliances.”**

— Shop owner in Gigante - Huila

To meet these requirements, Banco de Bogotá had to provide new infrastructure in 379 coffee-growing municipalities:

- POS devices in 486 coffee-purchase points;
- POS devices in 891 commercial establishments, 417 of which were located in Almacenes del Café (input shops affiliated with the *Federación*) and 474 in other commercial establishments — the first device for most of these shops.

The bank struggled to establish a transactional network that could operate with the *Cédula*. Finding and linking commercial establishments to create more cash access points turned out to be more complex than expected: It was not easy to find businesses that complied with the bank’s risk-mitigation requirements and could maintain the necessary liquidity. Though the *Federación* had an initial census of potential establishments, the bank had to do additional work to find suitable establishments, delaying availability in some municipalities.



In visits to commercial establishments for this case study (two supermarkets, three input shops, and two coffee purchase points), it was common to find that the POS devices were stored because of lack of usage, especially in the shops that were not related to the coffee industry. The agricultural supply shops did few transactions with the *Cédula* POS (on average 1 of every 100 transactions) and faced connectivity problems and difficulties transferring money from the chip to the band. Even where these were caused by human error, a bad first experience lowered the confidence and increased the uncertainty of both shopkeepers and customers.

Banco de Bogotá did not advertise on behalf of the shops where the POS devices were installed; the shopkeepers said they just sat and waited for coffee growers to come, which did not happen.

Further, incentives for shops to promote usage, like receiving a fee per transaction, were missing — so shopkeepers did little to promote POS use.

To find better cash disbursement points than the bank was acquiring, the *Federación* and the bank experimented with a partnership with Terpel gas stations, with the assumption that they would have adequate liquidity and would see reductions in cash management

and transportation costs with the additional cash flow. The *Federación* paid the gas stations the equivalent amounts they disbursed to coffee growers, an arrangement that gas station managers said reduced their independence and working capital, especially during harvest season. So the agreement was cancelled.

To get more POS devices in the municipalities, there were some initial approaches with the acquiring networks for Visa and MasterCard (Credibanco and Redeban). But these networks saw the low usage of debit and credit cards in those municipalities, which limited the viability of POS devices. The process was stopped and the network continued to be closed-loop.

The project also had to contend with deficiencies in communications and information transmission infrastructure, especially in the rollout stage and in smaller municipalities. The bank first tested lines run by Telecom, the national telephone company, but that network lacked the required capacity; POS were continuously blocked or very slow, causing distrust, rejection, and complaints from the coffee growers. Thus the bank had to install satellite antenna to connect the POS devices in 150 municipalities; cellular communication was not an option because of poor network reach in these communities.

**“Coffee farmers can use their card to pay installments on their credits, and buy fertilizers and inputs. Card usage had a boom in April this year, when about 15% of our sales were paid with it, but now, without money, they don’t do anything with it. When they’ve had money they have used it to buy. People like it because it is more secure and for the shop also. They are learning slowly ... before they would ask for help to use the ATM but slowly they are feeling more comfortable using it.”**

— Administrator of the purchase point outlet Gigante - Huila

As of June 2013, 9% of the 379 municipalities had one POS, 36% had two, and the remaining 54% had three or more devices. Again, the cards could only be read by POS devices specifically designed for the *Cédula* program — not just any POS in the country.

## 5.2 ATM network availability

In addition to the POS infrastructure, cardholders could use Banco de Bogotá ATMs (for free) and non-Banco de Bogotá ATMs (including those in the same banking group, for a fee<sup>24</sup>) as cash dispensing points. As of 2013, 290 of the 379 coffee municipalities had ATMs;

89 still had no ATM, forcing coffee growers there to withdraw at commercial establishments or “convenience stores”<sup>25</sup> with one of the closed-loop network’s POS devices (see Table 2).

Where they were present, ATM networks were essential to reinforce the struggling POS deployment; the vast majority of transactions by coffee growers were to cash-out. In 2013, 78% of the transaction volume and 84% of the value were ATM withdrawals, compared with 6% and 9%, respectively, for purchases at commercial establishments (see Figures 6 and 7).

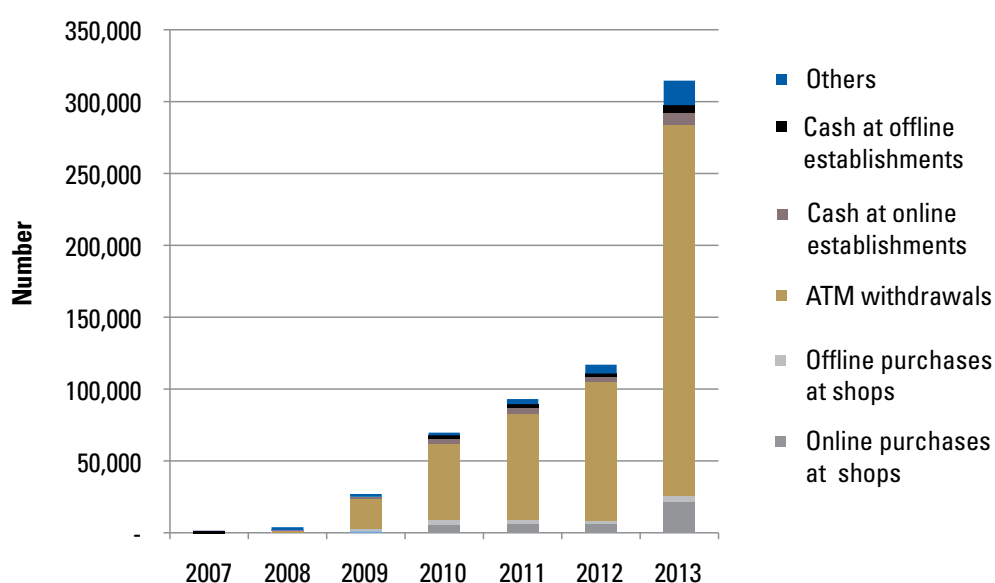


**TABLE 2** Available ATMs in the 379 coffee municipalities (December 2012)

	Number of municipalities	%	Number of municipalities with Banco de Bogotá ATM	%	Number of municipalities with other networks' ATM	% municipalities with cost
0 ATM	89	23%		0%		
Only 1 ATM	128	34%	7	6%	121	95%
2 ATM	58	15%	21	19%	37	64%
3 ATM	18	5%	7	6%	11	61%
More than 3 ATM	86	23%	73	68%	13	15%
<b>Total</b>	<b>379</b>	<b>100%</b>	<b>108</b>	<b>100%</b>	<b>182</b>	<b>48%</b>

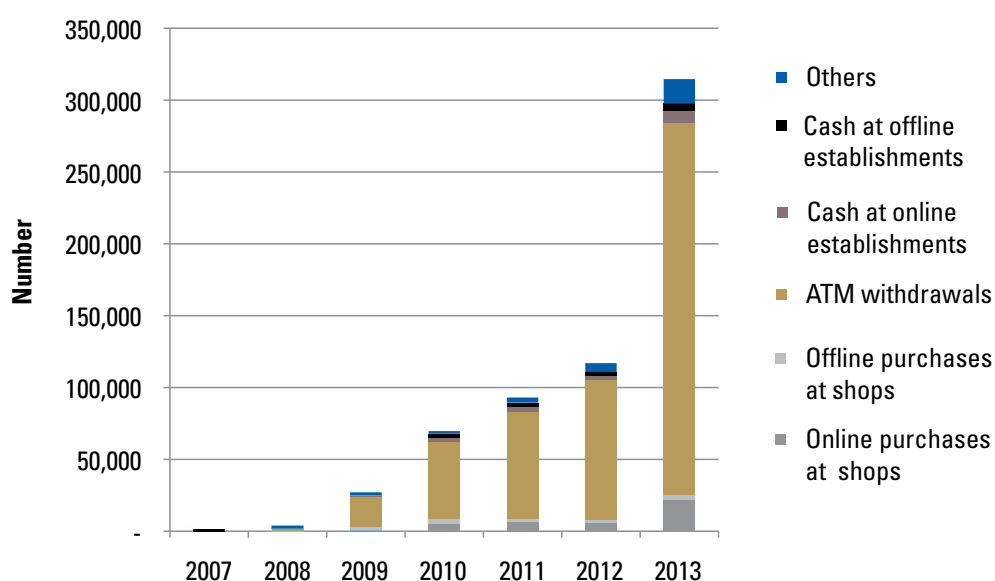
Source: Federación

**FIGURE 6** Number of transactions — monthly average by type (2007-June 2013)



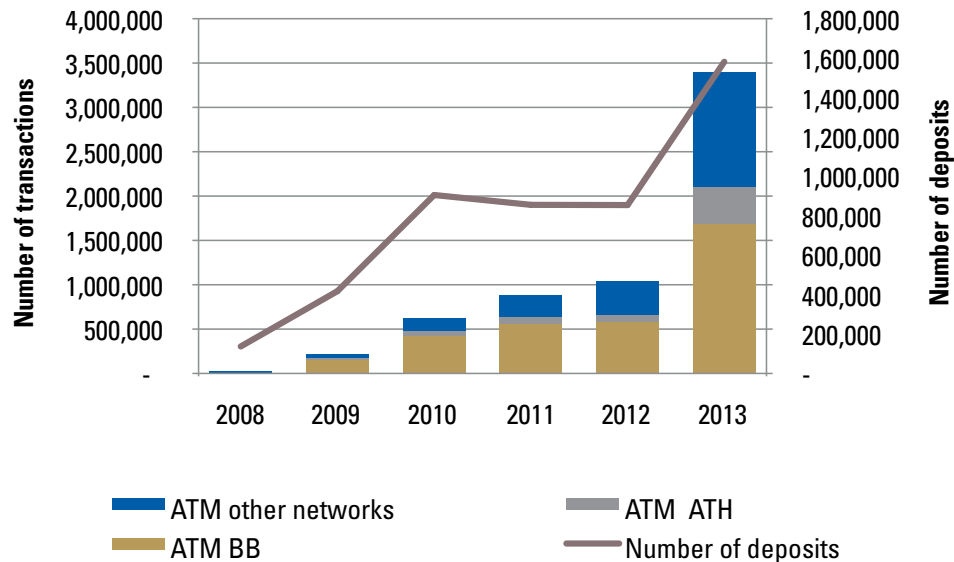
Source: Federación

**FIGURE 7** Value of transactions — monthly average by type (2007-June 2013)



Source: Federación

**FIGURE 8** Number of transactions at Banco de Bogotá and other networks' ATMs (2008-2013)

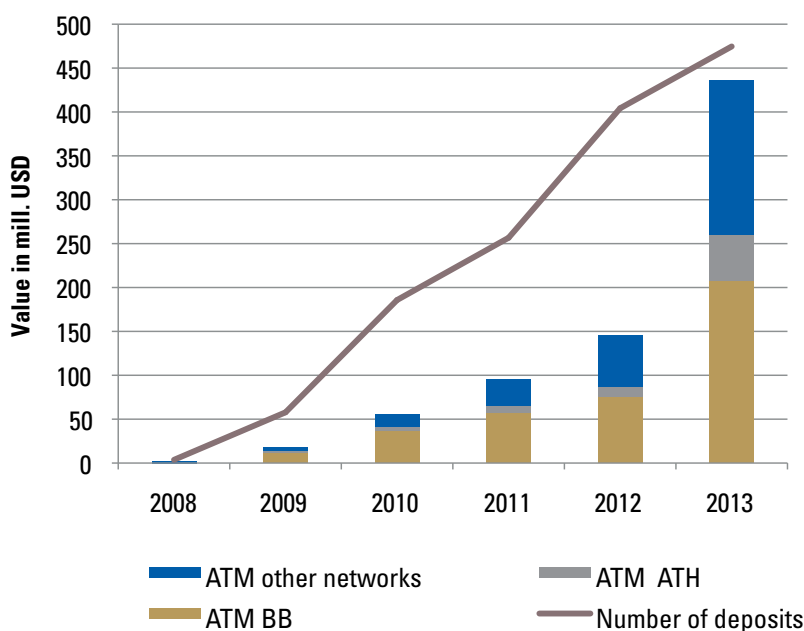


Source: Federación

And even though non-Banco de Bogotá ATMs charged cardholders fees, coffee growers used all ATMs more — especially non-Banco de Bogotá ATMs. Between 2011 and 2013, the volume of withdrawals from Banco de Bogotá's ATMs,

relative to all *Cédula* withdrawals at ATMs, declined from 63% to 50%, while in terms of value it fell from 60% to 43%, suggesting that access and convenience may outweigh the importance of fees (see Figures 8 and 9).

**FIGURE 9** Value of transactions at Banco de Bogotá and other networks' ATMs (2008-2013)



Source: Federación

Table 3 below compares the withdrawals from two reference months in 2009 and 2013. In 2009, over 74% of the cards used during a month made two or

fewer withdrawals; in 2013, with the disbursement of subsidies, 59% of cards made two or fewer withdrawals, while more cards made three or more withdrawals.

**TABLE 3** Number of withdrawals from ATMs (June 2009 and June 2013)

# of ATM withdrawals	Jun-09		Jun-13	
	# of cards	% of total cards	# of cards	% of total cards
1	2,792	42.8%	45,548	34.1%
2	2,044	31.3%	33,748	25.2%
3	953	14.6%	20,393	15.3%
4	392	6.0%	12,564	9.4%
5	149	2.3%	6,784	5.1%
Between 6 and 10	157	2.4%	11,429	8.5%
Between 10 and 15	15	0.2%	2,012	1.5%
More than 15	22	0.3%	1,205	0.9%
<b>TOTAL</b>	<b>6,524</b>		<b>133,683</b>	

Source: *Federación*

### 5.3 Card distribution and activation

In addition to developing the channels, the *Federación* and Banco de Bogotá had to get cards into the hands of the coffee growers, and get the coffee growers to start using the cards. This has turned out to be a more complex task than initially thought.

For the card distribution (issued with the coffee grower's pre-saved information, his farm and harvest), the *Federación's* Department Committees and the bank organized massive events to attract a high concentration of coffee growers. At these events, coffee growers received information

about how to use the card, and in some cases there were demonstration ATMs on hand. Cards not distributed at the events were distributed by the *Federación's* extension services.<sup>26</sup>

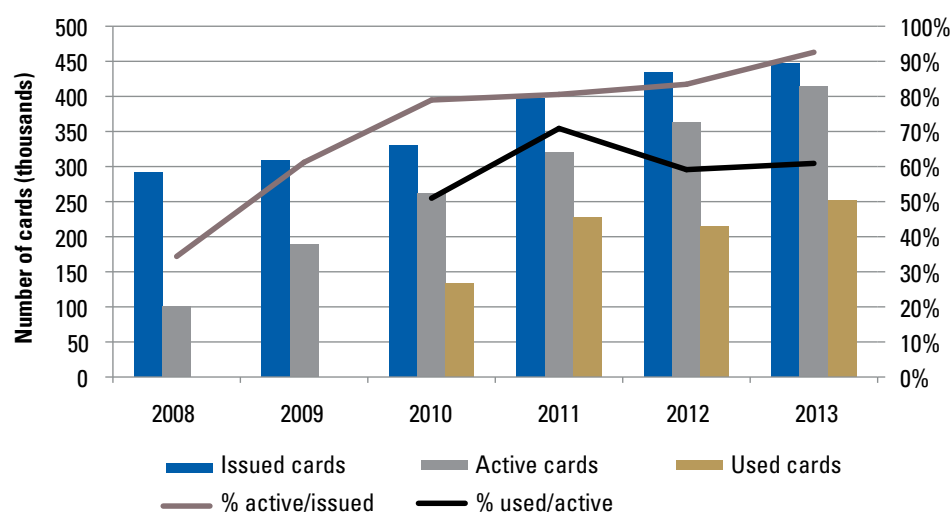
More than 290,000 cards were issued by 2008, but demand for the cards surged after the *Federación* began distributing funds over the cards in 2009. By June 2013, 82% of the coffee growers had a *Cédula* card and 27,000 white cards had been issued for the small-scale coffee growers.<sup>27</sup>

To activate the card, a coffee grower had to go to one of the network's POS devices to change the default 4-digit

password. The activation response was slow at first. By late 2007, 277,701 cards had been issued, and 162,785 (59%)

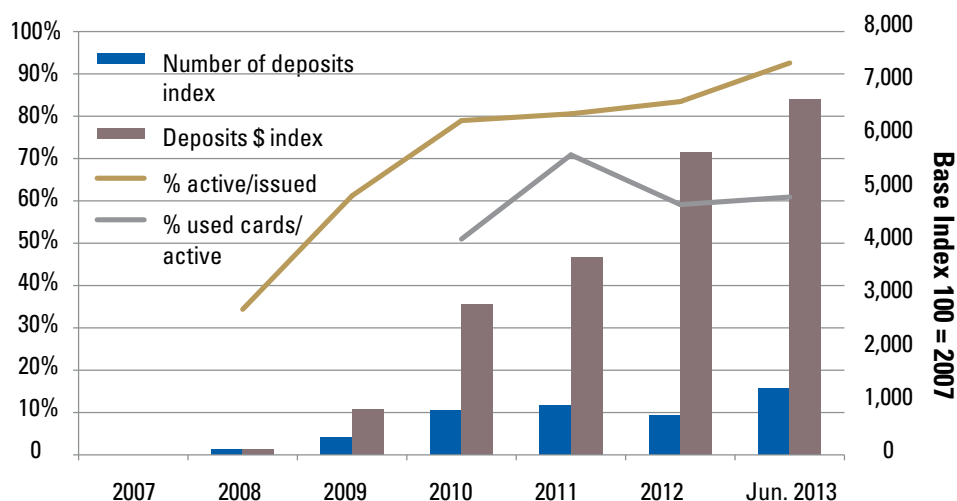
had been distributed to the farmers — but still a very low percentage was active (see Figures 10 and 11).

**FIGURE 10** Number of cards issued, activated, and used per year (2010-June 2013)



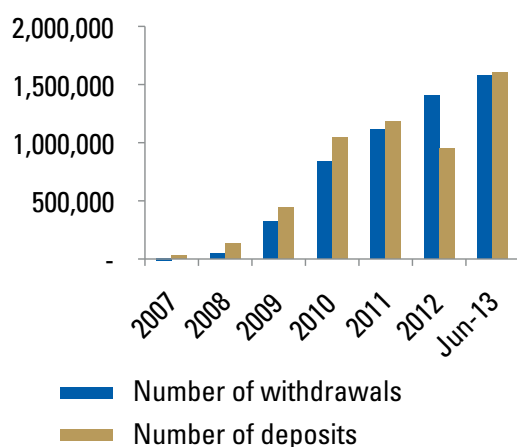
Source: Federación

**FIGURE 11** Cédula activation and usage vs. deposits from the Federación



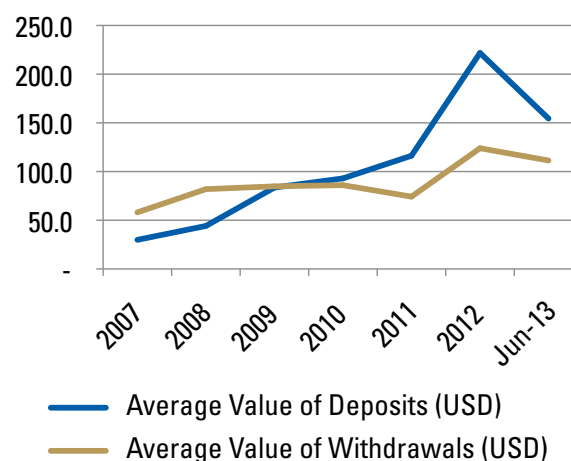
Source: Federación

**FIGURE 12** Number of deposits into and withdrawals from the *Cédula* (2007-June 2013)



Source: *Federación*

**FIGURE 13** Average value of deposits into and withdrawals from the *Cédula* (2007-June 2013)



Source: *Federación*

The *Federación* and Banco de Bogotá partnered with a supermarket chain on a contest for coffee growers who used the card the most, and on discounts for purchases with the card. But the real catalyst, as discussed above, was the deployment of subsidies and credits — cardholders had a reason to get a card and activate it.

The impact of subsidies and credits on usage is clear from looking at the relationship between deposits and withdrawals (see Figures 12 and 13). Since 2011, when the average deposit made by the *Federación* surpassed \$100, the number of withdrawals per

card increased — probably because the value of subsidies exceed the ATM withdrawal limit.<sup>28</sup>

#### 5.4 Technological work-arounds to accommodate program changes

In addition to the monetary subsidies and credits the *Cédula* facilitated, in 2009 the *Federación* asked Banco de Bogotá to allow for the payment of in-kind subsidies on a large scale.<sup>29</sup> This presented a challenge to the bank: Chip technology was new to Colombia, and the kind the *Cédula* used had limited space for information and services; that space was taken up by the project's existing needs.

The bank designed virtual “pockets” (see Box 3 and Figure 14) — ring-fenced amounts held by the bank for specific purposes (like fertilizer or fungicide) that could be claimed by coffee growers, according to the subsidies for which they qualified, at authorized suppliers.

Unlike the value credited to the *Cédula* from coffee purchases or from monetary subsidies, the value in the virtual “pockets” had a limited validity, after which it was returned to the government if it was not claimed.

Although the chip and the magstripe were not involved, the card was required to claim the subsidies in the “pockets.” The authorized commercial establishments’ mobile phones acted as a POS device. When a coffee grower wanted to claim his subsidy, he would go to one of these establishments and

read off a code from his *Cédula*, which the shop-keeper would enter on the mobile POS. This would allow the coffee grower access to the in-kind subsidy. More than 409 agricultural input stores were enabled with cell phones, but the demand surpassed the expectations, causing communications network saturation in many municipalities — so the bank deployed an additional 60 mobile phones as an emergency plan.

These “pockets” were used in 2010 to disburse the Competitiveness subsidy, aimed at promoting coffee plantations’ renewal. Later in 2010 and 2011 the “pockets” were also used for the disbursement of a subsidy for fungicides and fertilizers called “Ola Invernal” in response to a very strong rainy season that caused many floods and, through increased humidity, raised the risk of pests, specifically the coffee rust.



**Box 3****An example of a “virtual pocket” — “Ola Invernal” incentive for fertilizers and fungicides**

After the strong rainy season that struck the country in 2010-2011, the national government, through a program called Colombia Humanitaria Program (CHP), offered a subsidy for the coffee growers, to pay for fungicides and fertilizers to prevent coffee rust. The *Federación* used the virtual “pockets” previously designed by Banco de Bogotá for other subsidies, as this mechanism complied with CHP’s traceability and information requirements.

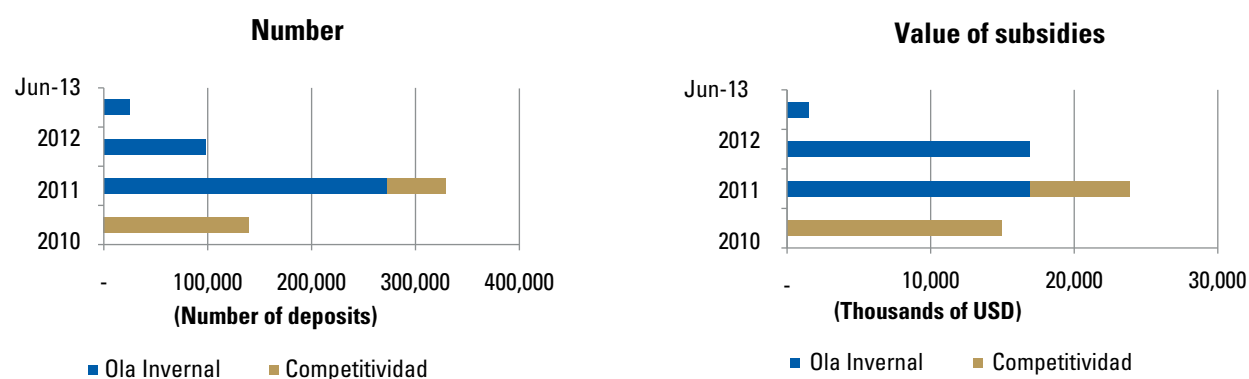
However, to claim the subsidy, a personalized certification with the farmer’s picture, ID number, and subsidy value, issued by the *Federación*, had to be presented in addition to the *Cédula*. Distributing these certifications was a high burden for the *Federación*.

The *Federación* recognizes that if it were not for the *Cédula* and the alliance with the bank, the emergency response would have been much slower. This program was recognized by the CHP as one of the most efficient and fastest massive subsidy distribution schemes, with the best information and monitoring mechanisms of the ones it funded.

A total of 313,000 coffee growers benefited from this program, receiving products of an average value of USD \$105.

Overall the “pockets” have been used to distribute 614,000 subsidy payments, worth \$60 million.

**FIGURE 14** Volume and value of the subsidies paid through virtual “pockets” (2010-June 2013)



Source: Federación

Source: Federación

Even though the “pockets” were used for in-kind subsidies, clearly not an example of electronic payments, *Federación* staff stress that this

distribution was only possible with the targeting that the *Cédula* platform — and the SICA database — allowed.



## 6 The Cédula's achievements

During the *Cédula* program's six years, the project has given the *Federación* a platform for the large-scale distribution of subsidies, disbursing \$740 million in 5.3 million transactions as of June 2013; and it saved the *Federación* an estimated \$15 million over making payments with cash. The program faced many challenges and has yet to achieve some of its main goals, a fact acknowledged by the *Federación* when it revamped the program into an open-loop scheme, beginning in 2014.

### 6.1 For the *Federación*, increased efficiency and a successful means to distribute massive subsidies<sup>30</sup>

The *Federación*'s decision to create an electronic payment system with a specialized infrastructure allowed the organization to:

- Make transfers at a massive scale that would have otherwise been difficult to implement;
- Respond rapidly with emergency support for coffee growers;

- Improve service quality for coffee growers;
- Have more leverage when negotiating credit lines and preferential conditions for the farmers;
- Reduce leakage from fraudulent subsidy claims or crop sales;
- Guarantee traceability, offering transparency for the disbursement of government resources; and
- Generally manage funds in more discrete pieces, limiting the misuse of resources.

If all the payments channeled through the *Cédula* had been disbursed in cash, the *Federación* would have incurred costs of \$19.6 million;<sup>31</sup> if it made the payments by check, the cost would have been \$13.6 million.

The *Federación*'s contract with Banco de Bogotá included events to distribute and activate the cards;

the costs of replacing the cards;<sup>32</sup> advertising and the staff to manage the *Cédula*;<sup>33</sup> as well as a minimum float commitment, of which the opportunity cost was estimated at \$300,000.<sup>34</sup> The total cost of the *Cédula* between 2007-2013 was \$4.1 million. This means a savings of up to \$15.5 million, or 79%, compared with cash, which would have been the most likely alternative payment mechanism. Check disbursement, while included in these calculations, would have been much less practical to implement.

Despite the efficiency gains for the *Federación*, the program did not break the cycle of dependence on cash in the coffee growers' economy. This would require addressing the reluctance of coffee growers to use the card for receiving payments for selling crops to the cooperatives, and to use it in their day-to-day purchases — a reluctance partially explained by the supply-side constraints of POS devices and ATMs in rural areas.

## **6.2 For Banco de Bogotá, technical innovations and the beginning of a potentially profitable partnership**

The winning bank of the *Federación's* tender was actually Megabanco, a small cooperative-based bank; Megabanco was acquired by Banco de Bogotá during the design phase

of the *Cédula* project. Megabanco's business case for bidding likely depended on the float that the *Federación* would commit to leave in the bank or, perhaps, on the possibility of deeper relationships with the coffee cooperatives. (Cross-selling to the growers themselves was, as discussed, not allowed.)

By acquiring Megabanco and assuming the *Cédula* contract responsibilities, Banco de Bogotá probably anticipated similar benefits. Mostly, though, the bank saw it as an opportunity to serve the *Federación*, a long-time corporate client. It also may have expected coffee growers to hold balances in their accounts from selling crops to the cooperatives — an expectation that was ultimately not realized.

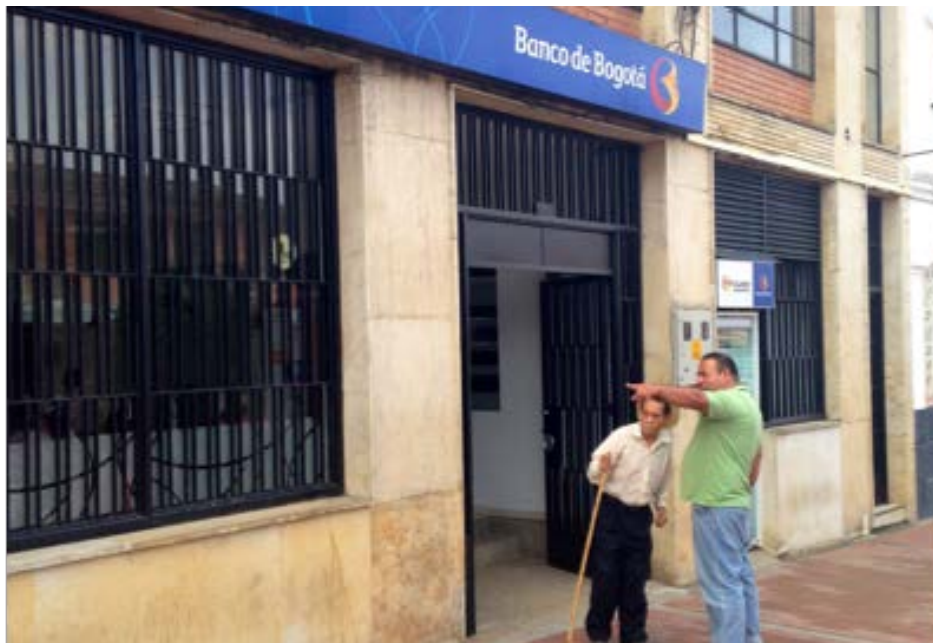
Apart from providing the electronic payment platform, Banco de Bogotá had to invest in:

- Developing an exclusive POS network, for which it could not charge the merchant;
- Establishing the communications infrastructure;
- Issuing cards that had a higher cost than average because of the card's special features;
- Managing the transactional platform;

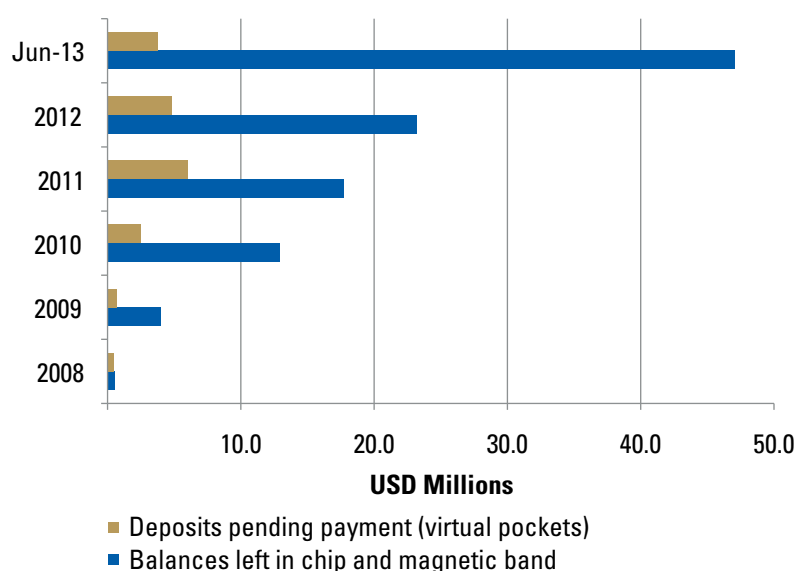
- Offering the bank's ATM network (187 at that time) without cost, and offering interoperability on the ATMs of other banks;
- Promoting the card's acceptance;
- Developing new back-end technologies to accommodate changes to the program;
- Distributing mobile phones to input dealers involved in the disbursement of subsidies;
- Running a help desk and a call center for queries, claims, and complaints; and
- Information processing and the back-office staff dedicated to the *Cédula* program.

Banco de Bogotá earned revenue from the return on the float the *Federación* maintained. And as an added benefit, not initially contemplated, the intensive usage of the *Cédula* for subsidy dispersion earned the bank float income from the unclaimed balances in “virtual pockets”; the bank also earned float income from balances coffee growers kept on the cards (see Figure 15). This helped compensate for the increase in operational costs related to changes to the program, including allowing coffee growers access to bank branches to collect the PIC subsidy, which often exceeded the per-withdrawal ATM limits.

Furthermore, 51,000 coffee growers have loans from the bank from the special PSF credit line; and Banco de



**FIGURE 15** Average outstanding balances for the *Cédula* and virtual “pockets” (2008-June 2013)



Source: *Federación*

Bogotá estimates that 20,000 coffee growers have voluntarily obtained other products with the bank.<sup>35</sup>

On the whole Banco de Bogotá feels that the *Cédula* project has been beneficial for both the *Federación* and the bank. Bank officials still emphasize their relationship with the *Federación* as a strong motivation, but they increasingly look to other benefits. The revamped version of the *Cédula*, as described later, will allow

Banco de Bogotá to develop a more comprehensive relationship with the coffee growers. And the bank's investment in the acquiring network for POS devices, though little-used under the closed-loop scheme, could pay dividends if those commercial establishments can be converted to agents or act as new “acquired commercial establishments” with interoperable POS devices, an essential part of the new model to be implemented in 2014.

# 7

## Beneficiary perspectives

The *Cédula* — leveraging the traditional coffee ID into a payment mechanism — has undoubtedly served to disburse subsidies and credits efficiently, accurately, and transparently, but it has yet to result in a reduction of cash in the coffee economy.

To understand coffee growers' attitudes, a series of seven focus group discussions (FGDs) and six in-depth individual interviews with coffee growers were conducted for this case study — and they revealed a great reluctance to use the electronic payment functions of the *Cédula*. This marks the first time that Colombian coffee farmers were surveyed about their experience with the *Cédula* and payments from the *Federación* more broadly.<sup>36</sup>

This exercise was conducted in municipalities that varied by the coffee growers' profile, and by the available financial infrastructure and card usage. The sites were La Mesa in Cundinamarca, a central municipality where the project was piloted; Cajibío, a small municipality

with very small producers and low financial infrastructure; Gigante, a medium-sized municipality with small producers and some financial institutions; and Anserma, a developed municipality in the traditional coffee-growing region, with a balance of small and medium producers and a competitive financial sector.

The key findings are summarized in this section; a supplementary publication shares more of the coffee



**“I ask for the money to be deposited on the *Cédula* if, for example, I have come on a Saturday afternoon and I need the cash but it’s already 1 p.m. I can’t ask for a check because the bank is closed, so I get it sent to the card and go withdraw.”**

— Farmer in Anserma

“The ATM goes so fast and there is so much information ... I am 59 years old, if I don’t have my glasses I can’t see the screen. Instead I go inside the [Cooperative store] and they help me, they are very polite.”

— Medium-sized Farmer in Anserma



growers’ stories and experiences on specific attributes of the *Cédula* program.

Many of the coffee farmers had the *Cédula* for many years and watched the card transition from simply a voting instrument to a tool for receiving and making payments. All the coffee farmers participating in FGDs knew that they could receive subsidies and benefits from the *Federación* to their *Cédula*, and they knew they could be paid for coffee sales via the card. Nearly every farmer interviewed had completed at least one transaction with the *Cédula*, and many had used it within the month before the research.

Reinforcing the statistics cited above, though, FGD participants said they still prefer to be paid in cash — they value the liquidity because they have outstanding debts and expenses to pay urgently. Given the option to receive their coffee crop payments in a deposit to the card or via cash or check, most choose cash. Even checks are preferable to cards, many said. With checks, the recipient can go to nearly any establishment (bank or large supermarket) to cash out. Only those farmers who said going to the ATM was faster than cashing a check said they preferred to use the *Cédula*.

Difficulty using the ATMs holds many farmers back from using the *Cédula*, too. Age and education

level seem to affect the facility with which respondents learn to use new technologies, such as how to operate an ATM. However, even in Anserma, in a group of medium-sized and relatively educated farmers, the majority of participants were still uncomfortable with the technology of the *Cédula* and with using ATMs.

The majority of farmers have someone, like their children or another person of confidence, help them perform the operation.

These challenges are likely due in part to the fact that, for hundreds of thousands of Colombian coffee farmers, the *Cédula* is their first formal



**“I am afraid I am going to push the wrong button!”**

— Farmer in Gigante

**“You see, the common coffee farmer is 45 to 50 years old and barely sees. He gets to the ATM and sees a jumble of keys and messages and buttons that he can’t even see clearly. Whereas before, we had a little passbook and simply went to the bank counter. Now it’s all digital, it’s not like before.”**

— Farmer in Gigante

financial product, and most are using ATMs for the first time. But the lack of support they feel shows a weakness in the way the *Federación* and Banco de Bogotá rolled out the card, and that the initial education efforts were insufficient to drive usage.

Another factor in favor of checks, some participants said, is that ATMs have maximum daily withdrawal limits. So if a farmer lives far away from the nearest ATM, he has to make multiple long trips to access his money to repay debts and buy inputs, whereas high-value checks can be cashed all at once.

Still, some of the participants voiced positive attributes about the *Cédula*.

**“The digitization and all these new media, we do not understand how to manage them well. Many of us farmers simply don’t know how to use [the *Cédula*], so we have to ask others to do it for us. The change has been sudden. We do not understand; we do not understand it.”**

— Farmer in Gigante

**“If the money is deposited to the card, it will be stored there until you remove it. We withdraw it when we need it, but until then it is a nice little savings.”**

— Farmer in Cajibío



Some said they valued the control that comes with being able to save money in a formal financial institution. And keeping money on the card to pay for inputs at commercial merchants reduced the temptation to spend cash on other things. In Cajibío where it is harder to withdraw from ATMs as the Banco de Bogotá ATM is in another town, it is especially common for farmers to see value in the card.

Some farmers also said they valued the security the *Cédula* provides: unlike with cash or checks, the *Cédula* does not require farmers to carry large sums of cash.

The *Federación*’s intention was that farmers would also use the card to make purchases at stores that sell

agricultural products, supermarkets, and furniture stores. However, focus group participants reported either that they did not know that one could use the card to pay in other shops, or that it did not work when they tried.

Only the credit disbursements and the payment of big subsidies like the PIC have forced farmers to use the *Cédula* and to interact with ATMs and POS devices. As farmers use the card to withdraw with increasing frequency, many are starting to become more comfortable with the technology and to recognize advantages of receiving payments this way.

There is demand among farmers for a more “full-service” payment



product, including the option to deposit, which would allow for more flexibility in savings, and the ability to pay for additional goods and services electronically. The demand for more options linked to this electronic payment mechanism is an encouraging sign that the *Cédula* project is helping to shift mentalities and behaviors toward increased use of electronic payments in Colombia. However, information campaigns will likely be needed to accompany rollouts of new services to help build capacity and awareness of these options among coffee growers, many of whom are new to electronic payments.

The new version of the *Cédula* should respond to this demand.

**“The *Cédula* is better because otherwise you get the cash and you just spend it, you spend it on the wrong things. Instead with the *Cédula* you will have that money there saved for you.”**

— Farmer in Cajibío

**“That card is just simply to withdraw money from the *Federación*; you can’t go into a store and say I am going to buy with this because it does not work.”**

— Farmer in Gigante



## 8 Shifting the scheme to a savings account

During 2013, the *Federación* and Banco de Bogotá analyzed the results of the *Cédula* and concluded that a closed-loop network was not sufficient to change payment habits or satisfy the coffee growers' financial needs.

As a result, in December, two years before the contract with Banco de Bogotá expired, the *Federación* announced the re-launch of the new *Cédula*. The most important change was turning the *Cédula* into a full-fledged interest-earning savings account linked to a VISA Electron debit card. This will allow coffee growers to have access to all the services of a savings account, including making deposits at any bank channel and using the card for payments in the country's entire payment network.

Coffee growers will continue to have access to the original points of access. They will still have access to any ATM, with preferential rates for those in the bank's group. Furthermore, coffee growers will now have access to all Banco de Bogotá and Grupo Aval's bank agents. And they will be able to

make purchases at more than 220,000 Visa and MasterCard POS devices, linked to the interoperable networks Credibanco and Redeban, respectively.

The card will be exempt from the maintenance fee, ATM withdrawals will continue to be free at Banco de Bogotá's ATMs, and there will still be special rates on other banks' ATMs. The first card will continue to be free for coffee growers, but, to encourage them to take care of it and remember their password, the bank will charge clients 50% of the cost for card reissuance. Additionally, coffee growers will have the ability to make transactions at Banco de Bogotá's branches and withdraw more than \$2,090, and they can ask for "manager's checks" under their name or a third person's by showing their *Cédula* and a National Identity Card.<sup>37</sup>

A preliminary estimation suggests coffee farmers that open this account will save \$60 per year.<sup>38</sup>

The coffee growers will be considered bank clients and the bank can then offer them additional products,

a huge change that makes the business case more attractive for Banco de Bogotá. The bank commits to maintain the coffee-voting platform and to continue structuring the virtual “pockets” when required (see Table 4).

In 2014 the bank will start turning the coffee purchasing points into bank agents,<sup>39</sup> taking advantage of their knowledge and existing infrastructure. Similarly, the bank will start linking, under the traditional

acquiring model, the stores that lack interoperable POS devices.

For coffee growers, the savings account opens the possibility to make all types of transactions over a wide range of channels, potentially leading to more usage and real financial inclusion. It could enable the *Federación*’s original goal of paying for coffee purchases over the card more attractive, promoting cash elimination in the coffee municipalities’ economies.



**TABLE 4** Comparing the old and new versions of the *Cédula*

	2007-2013	2014-
Product	Prepaid Card	Savings account
Earns interest	No	Yes
Franchise	None	VISA Electron debit card
Types of transactions	<ul style="list-style-type: none"> <li>• Withdrawals at all ATMs and 1,377 POS</li> <li>• Public services payments</li> <li>• Mobile phone top-ups</li> <li>• Purchases at closed-loop network shops</li> <li>• Deposits if selling coffee to <i>Federación</i> and asking to be loaded onto the <i>Cédula</i></li> </ul>	All those available for savings accounts, including deposits, transfers, public services, purchases at any POS in the country
Available channels	<ul style="list-style-type: none"> <li>• ATM: <ul style="list-style-type: none"> <li>◦ 1,795 ATMs without cost</li> <li>◦ 2,578 ATH's ATMs with reduced cost</li> <li>◦ 9,819 ATMs with cost</li> </ul> </li> <li>• POS: <ul style="list-style-type: none"> <li>◦ 1,377 (closed network of 486 coffee-purchase points, 891 commercial establishments)</li> </ul> </li> <li>• Limited access to branches</li> </ul>	<ul style="list-style-type: none"> <li>• ATM: Same as before</li> <li>• POS: <ul style="list-style-type: none"> <li>◦ 200,000 (Credibanco and Redeban Networks)</li> </ul> </li> <li>• Branches: 604</li> <li>• Agents: <ul style="list-style-type: none"> <li>◦ 1,703 without cost</li> <li>◦ 8,234 Grupo Aval's bank agents with cost</li> </ul> </li> <li>• 50 payment and collection centers belonging to Banco de Bogotá</li> </ul>
Costs paid by coffee growers	<ul style="list-style-type: none"> <li>• Maintenance charge: Free</li> <li>• ATM fees: <ul style="list-style-type: none"> <li>◦ Banco de Bogotá's: Free</li> <li>◦ ATH's ATMs: \$0.57</li> <li>◦ Other banks' ATMs: \$2.03</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance charge: Free</li> <li>• ATM fees: Same as before</li> <li>• Agents <ul style="list-style-type: none"> <li>◦ Banco de Bogotá (1,703) without cost</li> <li>◦ Grupo Aval's: \$0.57 per transaction</li> </ul> </li> <li>• Banco de Bogotá's branches: Free</li> </ul>
Access to other products	None	Access to all the bank's products



# 9 Lessons learned

With the evolution of the *Cédula* program away from a closed-loop system as of 2014, the case of the *Federación's* efforts holds many lessons for other similar membership organizations; governments that disburse subsidies in rural areas; and development partners that advise, design, or even implement cash transfer schemes:

## 1 Digitizing the payments to farmers using the card scheme provided significant cost savings for the *Federación*.

- The *Cédula* generated significant efficiency gains for the *Federación* and was instrumental in its effective disbursement of massive government subsidies.
- Nevertheless, this approach limited the scheme's usefulness for the end-user since coffee growers were not able to benefit from the wider payments infrastructure available in many of the coffee-growing regions — restricting coffee growers' access to electronic payment channels and diminishing their motivation for making electronic payments.
- The use of proprietary technology had strong implications not only for usage but for the provider's ability to respond to new requirements. The chip technology was new to the market and was difficult to adapt, necessitating the use of virtual "pockets," a creative solution which reflects the need to build more flexibility into the technological requirements to providers.

## 2 Establishing a functioning digital channel allowed other payment types, especially government subsidies and credits, to flow to small farmers.

- Government subsidies provided a powerful, unexpected catalyst for take-up and usage of the scheme, but usage was limited to receiving and cashing out funds.
- Coffee growers needed more training and information, especially for older and less educated farmers in rural areas.

### 3 Convincing end users to digitize their own payments at merchants (rather than simply cashing out) takes more time and effort.

- Coffee growers' financial behavior and incentives are highly complex, and electronic payment mechanisms need to do certain things just as well as, or better than, cash and checks do.
- Not fully assessing the needs and readiness levels of the end-user groups resulted in deployments that did not match capabilities with experience in the user journey.
- The prohibition of cross-selling to card holders, meant to maintain the farmers' connection to the *Federación*, not only hurt the business case for the bank; it also reduced the supply of additional financial services to hundreds of thousands of potential clients.

### 4 Rural areas may require stronger incentives for both acceptance and usage.

- The *Cédula* promotes formalization, something that may be unattractive to coffee growers and some cooperatives and merchants, who prefer to have untraceable transactions for tax purposes; overcoming this requires incentives for usage.
- Commercial establishments were given no reason to see purchases with the *Cédula* POS device as anything but a distraction. The solution is not easy, since in remote rural and low-income areas the traditional acquiring model may not be viable. The new scheme will explore if giving merchants the income streams that come with being an agent make the case for being an acceptance point more attractive.

The next phase of the *Cédula* will benefit from all of these lessons, and the *Federación* and Banco de Bogotá are confident that the new product will generate a better and more valuable service for the coffee growers.



### ANNEX A: LIST OF ACRONYMS

<b>ATM</b>	Automated Teller Machine
<b>Cédula</b>	Coffee Smart ID Card
<b>COP</b>	Colombian Pesos
<b>Federación</b>	<i>Federación Nacional de Cafeteros</i>
<b>FoNC</b>	Fondo Nacional del Café
<b>GMF</b>	Gravamen al movimiento financiero – Transactions tax
<b>PCH</b>	Programa Colombia Humanitaria
<b>PIC</b>	Programa de Ingreso al Caficultor
<b>POS</b>	Point of Sale Device
<b>PSF</b>	Programa de Permanencia Sostenibilidad y Futuro
<b>SICA</b>	Sistema de Información Cafetera
<b>USD</b>	US dollars

## ANNEX B: PROGRAM DESCRIPTIONS

**TABLE B1** Detail of deposits to the *Cédula* by program (2007-June 2013)

*	Program	Number	%	USD (Millions)	%
3	Renovation Credits	1,816,965	33.9%	\$401.3	54.4%
1	<i>PIC</i>	1,660,164	30.9%	\$214.8	29.1%
	Coffee Purchases	72,368	1.3%	\$30.5	0.4%
	<i>Fertifituro</i>	184,883	3.4%	\$10.2	1.4%
7	Sustainability Credits	5,057	0.1%	\$4.8	4.1%
4	<i>FertiYa</i>	54,553	1.0%	\$4.1	0.6%
	Deposits for Committees	39,736	0.7%	\$3.0	0.4%
	Agricultural Inputs	849,649	15.8%	\$2.9	0.2%
6	<i>Fenomeno del Niño</i>	28,414	0.5%	\$1.7	0.2%
	<i>Midas</i>	31,847	0.6%	\$1.3	0.7%
	Procafecol Stocks	3,056	0.1%	\$1.3	0.2%
	Cooperatives	2,223	0.0%	\$0.4	0.1%
	Coffee Growers Convention	1,408	0.0%	\$0.3	0.0%
	Awards	738	0.0%	\$0.0	0.0%
8	Price Protection	57	0.0%	\$0.0	0.0%
2	Ola Invernal	395,668	7.4%	\$35.3	4.8%
5	Competitividad	218,407	4.1%	\$24.7	3.4%
	<b>TOTAL</b>	<b>5,365,193</b>	<b>100.0%</b>	<b>\$737.1</b>	<b>100.0%</b>

\*For descriptions of numbered programs, see Table B4.

Source: Federación

Note: The “Competitividad” program was first disbursed through the card (2008) and then through the virtual pockets (since 2009).

**TABLE B2** Number of deposits per program per year (2008-June 2013)

Program	2008	2009	2010	2011	2012	Jun-13
<i>Renovation Credits</i>	18,949	197,480	529,855	636,434	364,976	69,271
<i>Agricultural Inputs</i>	76,753	110,461	158,949	199,394	194,153	109,939
<i>PIC</i>	-	-	-	-	273,999	1,386,165
<i>Ola Invernal</i>	-			273,197	97,854	24,617
<i>Fertifuturo</i>	-	59,462	125,421	-	-	-
<i>Coffee Purchases</i>	8,918	17,085	14,139	9,458	14,469	8,299
<i>Competitividad</i>	-	22,517	139,680	56,210	-	-
<i>FertiYa</i>	647	7,900	16,111	6,268	6,289	2,521
<i>Midas</i>	15,465	10,012	5,936	434	-	-
<i>Fenomeno del Niño</i>	14,867	13,547	-	-	-	-
<i>Sustainability Credits</i>	-	-	-	-	21	5,036
<i>Procafecol Stocks</i>	-	331	1,178	1,547	-	-
<i>Cooperatives</i>	-	973	-	861	380	9
<i>Coffee Growers Convention</i>	485	305	203	104	102	209
<i>Awards</i>	738	-	-	-	-	-
<i>Price Protection</i>	-	57	-	-	-	-
<b>TOTAL</b>	<b>136,822</b>	<b>440,130</b>	<b>1,045,052</b>	<b>1,184,880</b>	<b>952,243</b>	<b>1,606,066</b>

Source: Federación

**TABLE B3** Detail on value of deposits per program (2008-June 2013)  
Millions of USD

Program	2008	2009	2010	2011	2012	Jun-13
<i>Renovation Credits</i>	\$2.2	\$22.9	\$60.6	\$106.5	\$168.3	\$40.9
<i>Agricultural Inputs</i>	\$0.3	\$0.7	\$0.8	\$0.4	\$0.4	\$0.2
<i>PIC</i>	\$-	\$-	\$-	\$-	\$18.3	\$196.6
<i>Ola Invernal</i>	\$-	\$-	\$-	\$16.9	\$16.9	\$1.5
<i>Fertifuturo</i>	\$-	\$2.6	\$7.7	\$-	\$-	\$-
<i>Competitividad</i>	\$-	\$2.9	\$14.9	\$6.9	\$-	\$-
<i>Coffee Purchases</i>	\$2.4	\$5.1	\$7.1	\$5.6	\$6.4	\$3.9
<i>FertiYa</i>	\$-	\$-	\$4.1	\$0.1	\$-	\$-
<i>Deposits for Committees</i>	\$0.1	\$0.5	\$1.0	\$0.6	\$0.7	\$0.2
<i>Midas</i>	\$0.6	\$0.4	\$0.3	\$0.0	\$-	\$-
<i>Fenomeno del Niño</i>	\$0.4	\$1.3	\$-	\$-	\$-	\$-
<i>Sustainability Credits</i>	\$-	\$-	\$-	\$-	\$0.0	\$4.8
<i>Procafecol Stocks</i>	\$-	\$0.3	\$0.6	\$0.4	\$-	\$-
<i>Cooperatives</i>	\$-	\$0.0	\$-	\$0.3	\$0.1	\$0.0
<i>Coffee Growers Convention</i>	\$0.1	\$0.1	\$0.1	\$0.0	\$0.1	\$0.0
<i>Awards</i>	\$0.0	\$-	\$-	\$-	\$-	\$-
<i>Price Protection</i>	\$-	\$0.0	\$-	\$-	\$-	\$-
<b>TOTAL</b>	<b>\$6.0</b>	<b>\$36.8</b>	<b>\$97.2</b>	<b>\$137.7</b>	<b>\$211.2</b>	<b>\$248.0</b>

Source: Federación

TABLE B4 Subsidy and credit program descriptions (part 1)

	Name	Description	Value	Payment Means
1	<b>Protection to the Coffee Growers Income – PIC</b>	<p>Program through which the National Government gives a subsidy to the coffee growers when the price per coffee batch is below COP \$700,000 (USD \$365).</p> <p>Requirements to access the program:</p> <ul style="list-style-type: none"> <li>• Being registered at the SICA database.</li> <li>• Sell coffee from your farm only and present a commercial bill or equivalent under the coffee grower's name, as sales support.</li> </ul>	<p>The subsidy is worth USD \$76, (COP \$145 mil) per dried pergamino coffee batch of 125 Kg, or its equivalent in fresh coffee. If the reference price per batch is below USD \$251 (COP \$480,000) the PIC will increase in USD \$10.4 (COP \$20,000) in which case the subsidy value is USD \$86 (COP \$165,000). The reference price plus the subsidy can never surpass USD \$366 (COP \$700,000).</p>	<ul style="list-style-type: none"> <li>• Savings or current bank account: Costless deposit to the coffee grower's bank account. The bank should belong to the ACH network.</li> <li>• Yellow or white <i>Cédula</i>.</li> <li>• Check: The cost will depend on the municipality's location.</li> <li>• Transfer from Banco Agrario.</li> <li>• DaviPlata: Through coffee-grower's cell phone, via m-banking.</li> <li>• Immediate payment: The coffee grower receives the subsidy (check or transfer to the bank account) when coffee is sold.</li> </ul>
2	<b>Ola Invernal – Fertilizers and Fungicides</b>	<p>Subsidy of the National Government through Colombia Humanitaria program to protect the farmers' income and coffee production from the floods. The subsidy was in-kind, handing the required fertilizers and fungicides to control rusk in 294.000 Ha of coffee plantations and selected by Colombia Humanitaria as a good example because of the traceability.</p>	<p>More than 320,000 coffee growers benefited. The results of this program were particularly positive: The rusk pest decreased from 44% in 2010 to 10.8% in 2011.</p>	<p>Most of this subsidy was disbursed through the virtual pockets especially designed for this purpose, which enabled to control the use of resources for fertilizers and fungicide purchases at authorized sellers.</p> <p>If the farmer didn't have the <i>Cédula</i> or the municipality lacked the telecommunications infrastructure, the authorized input shops or cooperatives handed the fertilizers/ fungicides to the producer, for later reimbursement from the <i>Federación</i>.</p>

TABLE B4 Subsidy and credit program descriptions (part 2)

	Name	Description	Value	Payment Means
3	<b>Permanence, Sustainability, and Future (PSF)</b>	<p>Credit program, in place since 2008, to promote renewals of old coffee crops, which tend to have low productivity and plantation density, affecting profitability.</p> <ul style="list-style-type: none"> <li>• Credits have access to an incentive (ICR) of 40% of the credit's value.</li> <li>• Initially, credits were disbursed in 20 disbursements, then in eight and currently in one.</li> <li>• Credits have a 5-years' term, with a 2-year grace period, with installments paid annually.</li> </ul>	USD \$3.140 (COP \$6 million) per Hectare.	<i>Cédula</i>
4	<b>Fertifuturo y FertiYá</b>	In place during 2010. Incentive to cover the financial costs of forward purchases of fertilizers because of the fertilizers' excessive price increase during 2008 – 2009.		<p>Coffee growers could obtain the fertilizers through two options:</p> <ul style="list-style-type: none"> <li>• Under a contract of sale of coffee, with future delivery signed with the coffee grower's cooperative. Through this option, the coffee grower would pay for the fertilizer when delivering the coffee negotiated in the contract, without paying interest.</li> <li>• Buying fertilizer in cash, the coffee grower would get a discount from the bill, which would be credited to the <i>Cédula</i>.</li> </ul>
5	<b>Competitividad</b>	Program created in 1998, to incentivize coffee-crop renewals.	In 2010, the incentive was USD \$0.07 (COP \$140) per renewed tree. Additionally, if the farmers planted other crops (corn, beans, tomato), they would receive an incentive of USD 63 (COP 120,000) per hectare to buy fertilizers.	At first, the incentive was paid against coffee shop's bills, but since 2009 it was paid through the <i>Cédula</i> 's "virtual pockets" that allow for control of in-kind subsidies for fertilizer purchases.

TABLE B4 Subsidy and credit program descriptions (part 3)

	Name	Description	Value	Payment Means
6	<b>Fenómeno del Niño</b>	Subsidy paid in 2008 to coffee crops affected by drought from Fenómeno del Niño.		<i>Cédula</i>
7	<b>Sustainability Credit</b>	Credit program for coffee plantations' sustainability created in 2013.	More than 320,000 coffee growers benefited. The results of this program were particularly positive: The rusk pest decreased from 44% in 2010 to 10.8% in 2011.	<i>Cédula</i>
8	<b>Coffee Price Protection</b>	Program to protect coffee growers' income from the international price of coffee volatility and the exchange rate fluctuations.	<p>Phase 1 (2009 – 2010): Protection, voluntarily acquired by the coffee grower for USD \$5.2 per batch, to assure the price at which he will sell the coffee in the future. If the price is below the reference when selling the coffee, the difference would be recognized by the program.</p> <p>Phase 2: To encourage the risk management culture since 2012, the coffee growers could automatically debit the CPP from their <i>Cédula</i> balance from their cell phones or through a bank deposit.</p>	<p>Phase 1: <i>Cédula</i>, transfers to bank accounts or cash.</p> <p>Phase 2: <i>Cédula</i> or bank deposit.</p>

## ANNEX C: ASSUMPTIONS FOR THE *FEDERACIÓN* COST SAVINGS

The objective of this exercise is to compare the cost alternatives of different payment instruments the *Federación* could have used to disburse the subsidies and credits between 2007 and June 2013 (5,292,768 deposits during this period).

**TABLE C1** Number of deposits

	2008	2009	2010	2011	2012	Jun-13	TOTAL
<i>Subsidies</i>	107,085	193,482	343,886	200,801	468,152	1,496,104	2,809,510
<i>In-kind Subsidies</i>	-	22,517	139,680	329,407	97,854	24,617	614,075
<i>Credit Disbursement</i>	18,949	197,480	529,855	636,434	364,997	74,307	1,822,022
<i>Other Programs</i>	1,870	9,566	17,492	8,780	6,771	2,739	47,218
<b>Total</b>	<b>127,904</b>	<b>423,045</b>	<b>1,030,913</b>	<b>1,175,422</b>	<b>937,774</b>	<b>1,597,767</b>	<b>5,292,825</b>

Of the subsidies, 640,000 were distributed in-kind. In this case, to calculate the approximate cost we used the assumption that for the disbursement the *Federación* would have had to incur in the transportation cost of resources. Another way to calculate the cost would be to include the cost of purchasing and sending the inputs and fertilizers massively to the municipalities to be delivered by the department committees, input shops, or cooperatives, which imply a detail difficult to estimate for this exercise.

For the credits, the *Federación* has used the trust funds to broaden the options of the suppliers, including financial institutions. In this case, we also used the assumption of the transfer cost of resources that the *Federación* would likely have had to assume for the respective disbursements.

The payment alternatives for the *Federación* include the following:

- Cash
- Check
- Payment through *Cédula*

### Cash payment cost estimate

For cash payments, we used the cost of a bank transfer which is \$3.13, taking as reference the maximum value paid currently by the Departamento para la Prosperidad Social-DPS for the bimonthly dispersions of the CCT from Familias en Acción (\$60 per beneficiary) through the financial system. (Price reference published in the tender process 07 of 2012- DPS).

**TABLE C2** Cash payment costs

	2007	2008	2009	2010	2011	2012	Jun-13	Total COP (Millions)	USD (Millions)
<i>Bank Transfers</i>		767	2,538	6,185	7,053	5,627	9,587	31,757	16.6

### Check payment cost estimate

We used the cost of issuing vchecks provided by the Federación, which is USD \$ 1.88

**TABLE C3** Check payment costs

	2007	2008	2009	2010	2011	2012	Jun-13	Total COP (Millions)	USD (Millions)
<i>Check</i>		460	1,523	3,711	4,232	3,376	5,752	19,054	10.0

## Cost estimate of payments through the *Cédula*

### Opportunity Cost

Estimate of the opportunity cost of the resources the *Federación* committed to leave in its accounts as reciprocity;

- Between 2007 and 2010: USD \$16.7 million
- From 2011 to June 2013: USD \$8.3 million

To calculate opportunity cost, the difference between agreed rate between the *Federación* and Banco de Bogotá (which we are not able to disclose) was compared to the average savings' interest rates for each year.

The resulting opportunity cost per year is:

**TABLE C4 Opportunity cost**

	2007	2008	2009	2010	2011	2012	Jun-13	Total COP (Millions)	USD (Millions)
<i>Opportunity Cost</i>	216	73	137	37	23	29	64	579	0.3

### Card replacement cost

According to the contract, the bank assumed 100% of the issuance cost for the first 367.000 cards; from 367.001 to 412.000 cards the *Federación* would assume \$1 of each card's cost and thereafter the *Federación* would pay 100% of the cost (USD \$ 2.69).

**TABLE C5 Card replacement cost**

Costs	USD
<i>Cost of cards</i>	
45.000 cards (cost USD1)	45,000
258.207 cards (cost USD2.69)	694,577
<b>Total</b>	<b>739,577</b>

**Cost of Staff and others:**

This includes the cost of staff at the headquarters office, advertisement, program campaigns, and visits to the municipalities, which the *Federación* estimates at \$3 million. These costs are included in the three alternatives, considering that the *Federación* would have incurred them anyhow. However, for the check payments, it is estimated that the cost would increase at least 20% because of the higher operative cost of checks issuance, transfer, and distribution in the different municipalities.

The final result of cost estimation for each scenario demonstrates how the *Federación*, by implementing the *Cédula*, was able to save USD 15.5 million compared to the alternative of cash payments and USD 9.5 million compared to paying by check.

**TABLE C6** Costs for the *Federación*

USD (Millions)	Cash Payment (a)	Check Payment (b)	<i>Cédula</i> (c )
<b>Costs</b>			
<i>Opportunity Cost of Float</i>			0.3
<i>Fee for Cash Payment</i>	16.6		
<i>Cost of Check</i>		10.0	
<i>Personell Costs and Others</i>	3.0	3.6	3.0
<i>Card Replacements</i>			0.7
<b>Total</b>	<b>19.6</b>	<b>13.6</b>	<b>4.1</b>
<b>Difference (a, b - c)</b>	<b>15.5</b>	<b>9.5</b>	<b>-</b>

## End Notes

- 1 [www.federaciondecafeteros.org](http://www.federaciondecafeteros.org)
- 2 See Section 6 for cost savings.
- 3 G: Government. B: Business (non-financial private sector). P: Person (individuals). D: Development community partner. For further explanation of the payment grid, see Better Than Cash Alliance (2012), *The Journey Toward 'Cash Lite'*, available at <http://betterthancash.org/wp-content/uploads/2012/09/BetterThanCashAlliance-JourneyTowardCashLite.pdf>.
- 4 Average production over the past five years was 8 million 60 Kg bags, worth USD 2,034 millions (COP 3.9 billions), of which 90% is exported. In 2013, production significantly increased (35%) partly as a consequence of the *Federación* efforts to renew coffee plantations and increase productivity, a process based partly in subsidies and grants paid through the *Cédula*.
- 5 Coffee is grown in 592 municipalities of 1,102 and in 21 departments of the 32. The coffee growing farms census registered by the *Federación* shows 796,000 farms with more than 400 Has in coffee crops.
- 6 A small producer has an average annual income from its coffee of \$7,300.
- 7 Though the *Federación* serves all the country's coffee producers, only farmers with more than 0.5 can be federated.
- 8 The *Federación* has helped organize the producers themselves, and provide support with education, training, social investment, technical assistance (through more than 1,000 agronomists in the field, research, modernization processes, advertising, and Brand positioning at an international level. For this purpose, it has different programs and institutions associated like Almacén del Café-Almacafe, the National Coffee Research Center, CENICAFE, Juan Valdez-Procafecol as a network of retail shops with world-wide presence.
- 9 There is high participation in the elections; for example in the last elections, held in 2010, 64% of the federated coffee growers voted.
- 10 Called the Directive Committee and the National Committee.
- 11 The FoNC is a fund with resources coming from direct contributions made by the coffee growers or from programs defined and financed by the government, and managed by the *Federación*. The credit lines traditionally offered to the cooperatives to finance the purchase of the coffee crop have a one month term and can be paid back in coffee or money plus interest.
- 12 There are 34 *Federación* cooperatives with national outreach and more than 592 purchase points, located in all the coffee-growing municipalities.
- 13 This price represents about 96% of the price at which coffee is negotiated at the New York's stock market and is determined by three market variables: New York exchange prices, quality differential recognized to Colombian coffee, and the exchange rate. Additionally, depending on the specific quality of the bean, a differential premium is paid.
- 14 An example is Banco Agrario which closed 13 branches between 2005 -2006, being the bank with most coverage in rural areas as the only public bank in Colombia.
- 15 At the time, in 2006, the landscape of potential partners among financial service providers was not encouraging. Private banks had presence in only 28% of the municipalities (though covering 95% of the municipalities with more than 100,000 inhabitants). Banco Agrario (BA) was the only bank present in 49% of the 1,102 municipalities, and nationwide 309 municipalities had no financial services providers at all. ATM and POS were concentrated in big cities, and though bank agents had been authorized in July 2006 (decree 2233 of July 2006, by the Ministry of Finance and Public Credit), the banks faced difficulties using this new channel, especially in rural areas.
- 16 A list of the municipalities with highest volume of coffee purchases was provided by the *Federación*.
- 17 The original winner was Megabanco, a small-sized bank linked to the cooperative sector in Colombia who signed a 5-year contract. Soon after winning the tender, Megabanco was bought by Banco de Bogotá, which assumed all the commitments from the original bank, including the contract with the *Federación*. In 2007, Banco de Bogotá offered some additional components (including connecting to other Grupo Aval ATMs and interconnectivity with other networks' ATMs, for which coffee growers would have to pay a fee when using for cash-out), and it signed a new contract, this time for 10 years.
- 18 The *Cédula* was the first chip-based card in the country.
- 19 The white card represents 5% of the cards issued.
- 20 It was not until 2011 that the usage ratio was more than 50%; by 2013 it had increased to over 61%.
- 21 Over the period of analysis, the 72,000 coffee purchases had an average of \$400.
- 22 The coffee information system (called SICA) is a dynamic geo-referenced information system that enables the *Federación* to access information from and monitor every coffee farm in the country.
- 23 A brief description of the programs and subsidies for which the *Federación* has used the *Cédula* can be found in Annex B.
- 24 Withdrawals at ATM that did not belong to Banco de Bogotá incurred a cost; a \$0.57 fee per withdrawal at an ATH network ATM (owned by the same financial group) and \$2.03 for other networks.
- 25 "Convenience stores" are stores where coffee growers could withdraw money at a special ATM provided by Banco de Bogotá, an alternative for cash-out that was used before the bank agents regulation was issued in Colombia.

## End Notes

- 26 One of the services offered by the *Federación* to coffee growers is the agronomists that give direct Technical Assistance at the farms, to share best practices and the research from CENICAFE.
- 27 For simplicity, the data reported here refer to both the yellow and white cards collectively as the *Cédula* scheme.
- 28 The maximum amount per withdrawal at a Banco de Bogotá ATM is \$209, and the cap for withdrawals from one account per day is \$836.
- 29 An early in-kind subsidy aimed at supporting coffee growers from a specific department, Huila, affected by drought, was implemented in 2007.
- 30 Because of the historical role of the *Federación* as the administrator of government programs for coffee growers, all significant and indirect cost savings and efficiency benefits can also be understood to benefit the government. Differentiating between them is not possible with available information.
- 31 Using a similar tariff to the one that the country's conditional cash transfer program, Familias en Acción, pays. For full details of cost savings assumptions, see Annex C.
- 32 The costs were assumed stepwise: The bank would pay for the first 367,000 issued cards; the *Federación* would pay USD 1 per card through the 412,000th card; thereafter, it would pay \$2.69 per card.
- 33 It is unclear how these resources compare to what would have been required to distribute a similar level of subsidies by cash, though checks would seem to require greater resources: issuance, physical transfer, and signature proof to hand the checks to the coffee growers.
- 34 The *Federación* offered to maintain during the term of the contract (10 years) a float of USD 16.7 million average per month of resources from the coffee institution for the first three years, and of USD 8.3 million for the rest of the term. It was nevertheless able to negotiate a small interest on the balances, a practice not very common for these types of contracts in Colombia.
- 35 Banco de Bogotá only had authorization to use the coffee growers' information to issue cards, it can't check the coffee growers' status at the credit bureau.
- 36 In meetings, the National Coffee Federation informed us that this project was the first primary research with coffee farmers.
- 37 For withdrawals, coffee growers will have to contact directly Banco de Bogotá's support desk at a toll free number 018000 – 966010, option 4.
- 38 Assuming the average monthly maintenance cost charged by the bank, and based on two monthly withdrawals with the distribution of ATM s belonging to Banco de Bogotá and other banks presented by coffee growers in June 2013.
- 39 12 coffee purchase stores in Quindio have already become bank agents.

## About the Better Than Cash Alliance

The Better Than Cash Alliance is an alliance of governments, private sector, and development organizations committed to accelerating the shift from cash to electronic payments. The Better Than Cash Alliance is funded by the Bill & Melinda Gates Foundation, Citi, Ford Foundation, MasterCard, Omidyar Network, USAID, and Visa Inc. The UN Capital Development Fund serves as the secretariat.



BILL & MELINDA  
GATES foundation



FORD FOUNDATION



USAID  
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