

PTTA impact evaluation in Saint Raphael
Note on voucher program implementation

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May 9, 2016



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Introduction – scope of the note

Smart subsidy programs have been advocated in number of developing countries to increase the adoption of modern inputs and increase agricultural productivity. Evidence from Sub-Saharan Africa has shown that one-time targeted subsidies can be effective at increasing adoption of fertilizer and increase agricultural productivity. The PTTA program in Haiti similarly provides subsidies for modern inputs, by providing vouchers for certain labor tasks, fertilizer, pesticides, and technical assistance. A randomized evaluation was built into the PTTA program for horticulture farmers in the Saint Raphael region. Separate registration campaigns for the PTTA horticulture program took place in various locations in and around Saint Raphael in mid-2014. The habitations Merlene and Buenabite were chosen for the impact evaluation due to their good water access. Of the 413 farmers in these habitations, half were randomly selected in a treatment group, and eligible farmers in this group were to receive vouchers in the fall of 2014. As was the case in the parallel evaluation in the North East, many of the selected farmers already used fertilizer and pesticide without subsidies.

This note reports findings from the short-term impact evaluation survey conducted in May 2015, and focuses in particular on findings regarding the implementation of the PTTA program in Saint Raphael. This will be complemented with a note/report on the actual findings on the impact of the program later in 2016. Data was collected at the household level, as farming activities are also organized at the household level. Note however that voucher registration was done for individuals, rather than households, and in a substantial share of households more than one household member was eligible. We therefore collected separate information about the vouchers received by each of the eligible individuals in the household. In this note we compare this information with information from CECI's administrative records regarding voucher benefits. Of the 205 people who reported receiving a program component, 86.3% could be matched to CECI's registry data. We present the description of the vouchers receipt and usage for 194 person-level matches to CECI data.²

Voucher Description

The program design included vouchers for soil preparation, seeds, fertilizer, sprays and pesticides, and technical assistance. For each individual, a specific plot was selected for use of the vouchers, and the value of the vouchers, other than technical assistance, was a function of GPS measured plot sizes, capped at 5,000 square meters. People could choose between packets of carrot and tomatoes, peppers and onions, or peppers and leeks. The total value of the vouchers was substantial, as the average farmer was to receive vouchers totaling 414 US\$, with the highest value adding up to 737 US\$. Table 1A in the appendix shows the maximum and the average value of the vouchers. The smallest measured plot area is 910 square meters.

² The 194 matches include 17 people who reported not receiving any program component at all.

Shortcomings in the overall program implementation

While data reported by farmers themselves should be interpreted with caution, the overall patterns in the data suggest **large problems with the implementation of the voucher program**, and potentially important capture of some of the benefits. While problems appear for all vouchers, implementation failures are particularly large for vouchers for services compared to those for inputs. Table 1 shows that overall for each of the inputs and services, there is a substantial share of households that did **not receive the program benefits**, with in **particular less than half of households receiving the pesticides and technical assistance benefits**.

Table 1: Overall summary: Actual program receipt

	In-kind	Cash	Either
Soil Prep.	27.8%	46.9%	74.7%
Seeds	77.8%	6.7%	84.5%
Fertilizer	80.9%	1.0%	82.0%
Pesticides	49.0%	0.0%	49.0%
Tech. Assist.	33.0%	0.0%	33.0%

N = 194 (registered household members matched to CECI's registry)

We document the different layers of program implementation problems below.

Voucher Receipt

The initial design of the voucher program envisioned farmers to receive physical vouchers for the different inputs, redeemable at local input shops or service providers for the value printed on the vouchers. However, in practice, the suppliers of inputs and services selected by PTTA often collected vouchers immediately after farmers received them, and then delivered inputs or services at a later date. In certain cases, farmers report not receiving the physical vouchers, but rather receiving the goods and services directly; other farmers reported receiving cash rather than services. The following table therefore shows the percentage of registered household members who report receiving vouchers, the corresponding inputs/service, or cash.

To document the implementation concerns, we first document whether registered individuals that are matched to the data in the CECI registry, report getting either a voucher or potentially directly received the equivalent benefit. We subsequently document whether those that received a voucher were able to exchange it for the appropriate inputs or services, and then summarize the implications for the overall program implementation

First, a **substantial share reports not having received a voucher or the equivalent benefits for which they were eligible**. Overall 9% of registered persons report not having received either the vouchers or the related benefits, with in particular 34% of individuals reporting not having received pesticides and as much as 62% reporting not having received technical assistance. This

points to a first important concern related to the implementation of the program, and suggest that a substantial share of intended benefits were never received by the beneficiaries.

In addition, in a substantial share of cases providers paid beneficiaries cash rather than inputs or services, or provided benefits directly. In particular 8% report being paid cash instead of vouchers for plowing services. For the other vouchers, between 11% (for pesticides) and 22% (for technical assistance) of individuals did not receive the physical vouchers but received instead directly the relevant goods or services. Under both of these alternative modalities, it may have been more difficult for beneficiaries to know the quantities to which they were entitled too, and hence it likely was more difficult for beneficiaries to verify whether they received the appropriate quantities.

Table 2: Component receipt – Reported as Voucher, Cash, or In-Kind Receipt

Component	ANY	Voucher	Cash	In-kind
Soil preparation	86.1%	76.8%	8.2%	1.0%
Seeds	91.2%	76.8%	2.1%	12.4%
Fertilizer	89.2%	71.1%	1.0%	17.0%
Pesticides	63.9%	52.6%	0.0%	11.3%
Technical assistance	38.7%	24.7%	-	21.6%
Any component	91.2%			

N = 194 (registered household members matched to CECI's registry)

Second, and possibly more alarming still, among households that report receiving vouchers, many report not having been able to exchange it for the related services or goods. This is particularly the case for pesticides and technical assistance vouchers, with 21 and 25% reporting having given the vouchers to suppliers without getting anything in return. Note that the pesticide voucher was interpreted as a voucher for the application of pesticides on the plot, rather than a voucher for receiving the pesticides directly. In addition, 50% of households report exchanging the soil preparation voucher for money rather than plowing services, while another 8% report not receiving anything in return for the voucher.

Combining tables 2 and 3 leads to the overall shares of program compliance in table 1, confirming the overall considerable concerns with the program implementation, with in particular less than half of households receiving the pesticides and technical assistance benefits.

Table 3: How vouchers were used

	Soil Prep.	Seeds	Fertilizer	Pesticides	Tech. Assist.
1) gave to supplier in exchange for corresponding goods/service	34.9%	85.2%	89.9%	71.6%	72.9%
2) gave to supplier in exchange for money	50.3%	6.0%	0.0%	0.0%	0.0%
3) gave to supplier in exchange for other good	0.7%	2.7%	5.1%	4.9%	0.0%
4) gave to supplier without ever receiving anything	8.1%	4.0%	2.9%	20.6%	25.0%
5) given to someone outside the household	6.0%	2.0%	1.4%	2.9%	0.0%
6) given back to program	0.0%	0.0%	0.0%	0.0%	2.1%
7) lost	0.0%	0.0%	0.7%	0.0%	0.0%
8) sold	0.0%	0.0%	0.0%	0.0%	0.0%
9) kept	0.0%	0.0%	0.0%	0.0%	0.0%

Percentage of matched household members who reported receiving a voucher.

Further implementation concerns for each of the vouchers

We now consider each of the vouchers separately to document further implementation failures.

Seed component

The farmer could choose between packages of pepper-leek (73.7%), carrot-tomato (14.43%), or pepper-onion (11.9%). While 77.8% of matched household members reported receiving seeds, many did not report receiving the same, or all, of the seed types on the registry. For example, of the matched members who were assigned the peppers and leeks, 35% reported receiving only leeks. Overall approximately 50% of farmers that should have received pepper seeds did not receive them, while close to 35% of farmers that should have received carrots or onions did not receive those seeds.

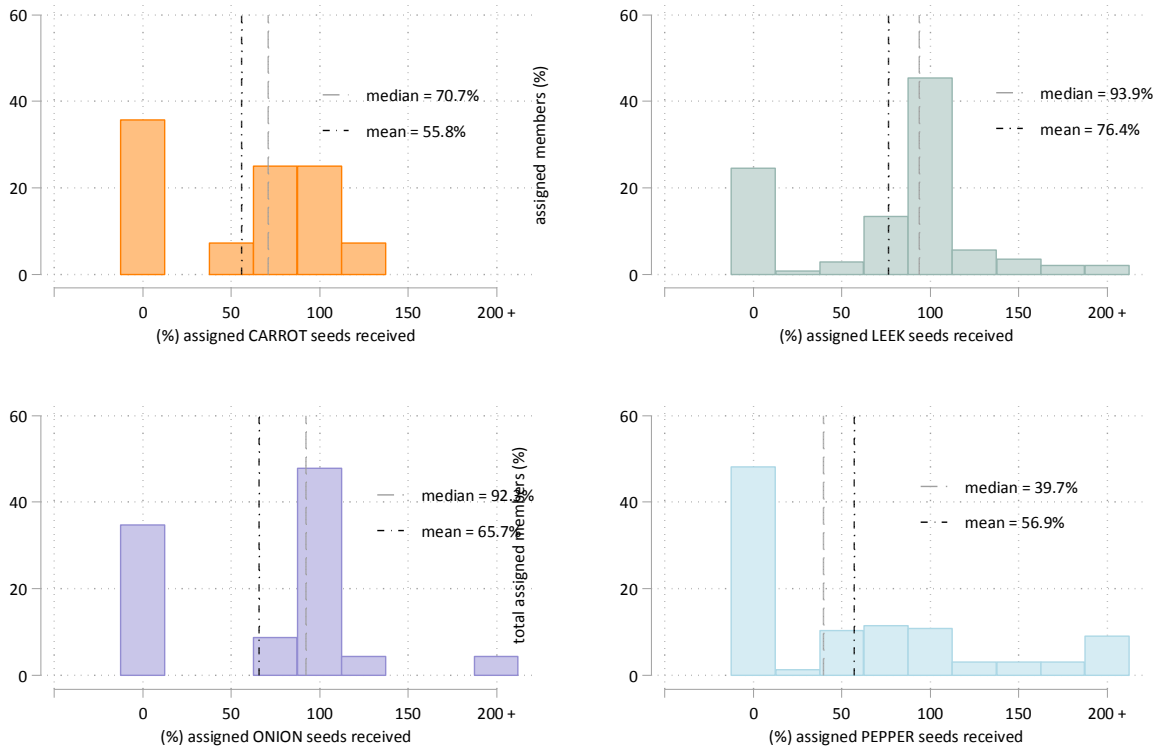
General Seed Compliance

received seeds	77.8%
got (at least) correct packet	44.8%
got only one seed-type	29.4%
got additional seed-type	6.1%

“Additional seed-type” means a seed not in the assigned packet.

In addition, for each individual vegetable seed, some matched household members report receiving a smaller quantity than they were assigned, while others report higher quantities. The following histograms show the large variation in the quantities received for each of the assigned seeds, accounting both for those that did not receive any or those that did not receive the right amount.³

Percentage of assigned seeds reported as received

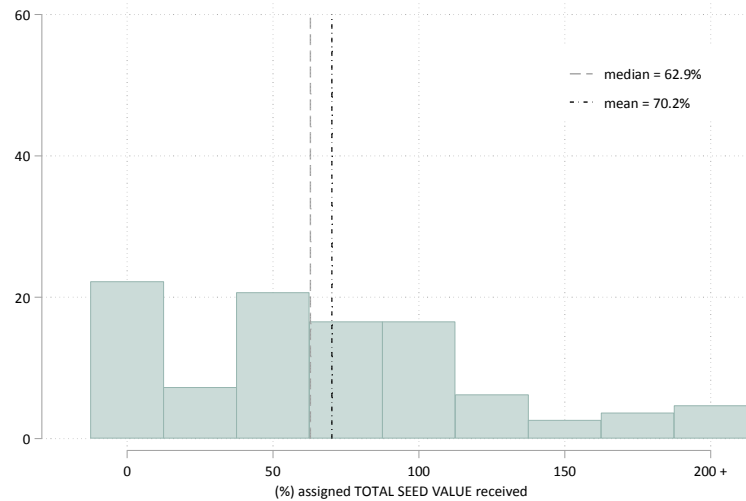


y-axis is the percentage of all matched members assigned to that seed type.

Since some people did receive seeds that were not part of their assigned packages, we also consider the values of all seeds received, using the same prices CECI used to calculate the voucher amounts. This suggests that the median farmer only received 63% of the overall value of the seed voucher.

³ Note that tomatoes are not included in the above chart due to extremely low receipt: of 28 people assigned tomato seeds, only 5 reported receiving any tomato seeds.

Percentage of assigned total seed value reported as received



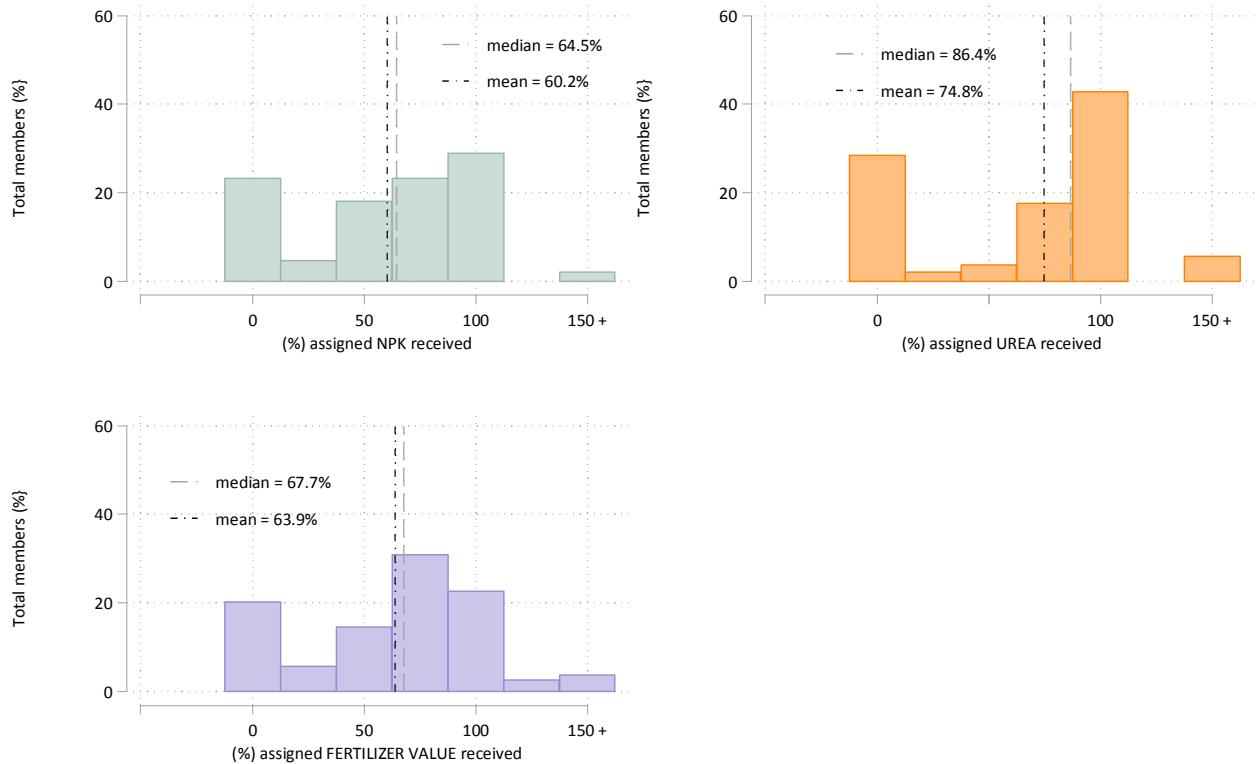
Fertilizer component

Like the seeds vouchers, the fertilizer component of the program corresponded to both a price and a quantity. The maximum fertilizer amount, included 155 kg of urea and 77.5 kg of NPK. Sulfate was additionally assigned to (the 11.4% of) matched members who chose the Onion-Pepper packet. In practice, no one reported receiving any sulfate and only 69% of farmers report receiving both urea and NPK. Accounting further for deviations in the quantities of fertilizer received shows that the median farmer only received 68% of the fertilizer value.

General Fertilizer Compliance

	%
received fertilizer	80.93
received urea	72.16
received NPK	77.32
received sulfate	0.00
received urea and NPK	68.56

Fertilizer Received as Percentage of Fertilizer Assigned



Notes on the soil preparation component

People often received cash for soil preparation. On average they report receiving 50% (median 47%) of the actual value of the voucher in cash.

Pesticides component

The pesticides vouchers were to correspond to three applications of pesticides, but its implementation is unclear and varied. While 49.0% of households report receiving pesticides in some form, only 21.1% report receiving an application service and only 6.2% report being instructed how to apply the pesticides.

Technical Assistance component

Implementation concerns appear to be even larger for the technical assistance component than for the other vouchers. Of the matches, only 33% report ever receiving technical assistance, and only 22% report that it was technical assistance explicitly different than pesticide application. This 22% received a median of 2 visits. It is likely that the technical assistance vouchers were given directly to service providers, instead of being distributed to farmers themselves. As the program did not foresee any further monitoring of visits, this may have led to large levels of shirking by the providers.

Conclusion and implications

The evidence presented in this note documents that the implementation of the voucher program in Saint Rafael suffered from considerable implementation problems. As a result, more than half of intended beneficiaries did not receive the full package of benefits, and a very substantial share did not receive any, or a much reduced overall package. To avoid such implementation failures in subsequent programs, closer monitoring and real-time process evaluation undoubtedly will be needed. Potentially equally important, the implementation protocols should be reconsidered, so that the delivery of the vouchers is separated from the delivery of the inputs or services, as initially intended. By first guaranteeing correct receipts of vouchers, the program can assure that beneficiaries themselves are fully aware of the benefits they are to receive by each of the providers, which can greatly enhance subsequent monitoring and reduce capture by the different input and service providers.

**Appendix :Table 1A : Assigned voucher values in HTG
(January 1, 2015: 46 HTG = 1 USD)**

	per m2	Mean	Minimum	Maximum	Std. Dev.
Soil preparation	1.65	5,645	1,502	8,250	1,908
Seeds		5,928	1,152	13,935	2,966
<i>Pepper</i>	1				
<i>Carrot</i>	0.47				
<i>Tomato</i>	0.15				
<i>Onion</i>	1.787				
<i>Leek</i>	0.775				
Fertilizer		4,787	1,238	8,253	1,681
<i>NPK</i>	0.9004				
<i>Urea</i>	0.4604				
<i>Sulfate (onions only)</i>	0.2898				
Pesticide Application	0.495	1,693	450	2,475	572
Technical Assistance		1,000	1,000	1,000	0
Total		19,053	5,806	33,913	6,631