



## THE STUDY



The research was carried out by the Centre for Regional Entrepreneurial and Coffee Studies (CRECE), a non-profit organization based in Colombia, with 28 years' experience in socio-economic research and consulting. The data used for this impact evaluation was drawn from data collected between 2008 and 2011 as part of a broader study that was conducted by CRECE in collaboration with Committee on Sustainable Assessment (COSA).

## KEY FINDINGS



### More resilient yield

Relatively stable levels of productivity were observed in both regions. There was a downward trend meaning a yield falling by -8% for Caldas target against (-59.4% for control) and -9% for Santander against (-49% for control). Adverse conditions during the period of observation, such as climatic phenomena, high prices of fertilizers, recurrence of plagues and diseases as well as the national coffee renovation program, led to a low level of production and yield in the country, as it is captured by control groups' trend.



### Strong supply chain relationship

The number of 4C farmers who tried to vary their target market diminished over time. The low rate of searching for new buyers by farmers can be explained by the strong support they receive from Organizations in coffee commercialization, which maybe makes this search unnecessary. In fact, the major buyer is the local Cooperative that purchases about 50% in Caldas and 43% in Santander.



### Efficient water use and treatment

40% of the 4C farmers have a treatment system for wastewater from coffee processing. Indeed, significant differences were found in both regions against the control groups. In Caldas department, 43% of 4C farms (12% of control) had access to treatment systems like Modular Systems, or used other methods. The difference to control was bigger in Santander, while 40% of 4C farms treated the water, compared to only 3% of control farms did. As data on this indicator are only available for fourth year, it is not possible to know whether this result is attributable to the standard implementation.

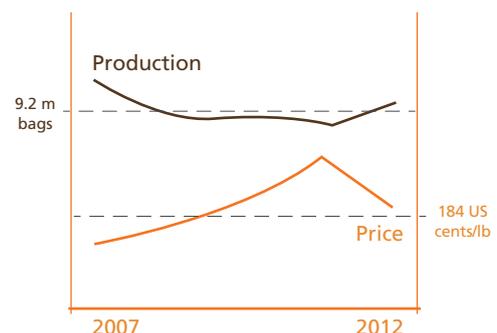


### Lower cost of production

The 4C farmers have lower production costs per kilo of coffee produced. Production costs include hired labor, coffee-picking, milling, renewal of trees, farm management, pests and diseases control, and cost of inputs (chemical fertilization as well as pest, disease and weed control). Only monetary costs are taken into account for the cost structure. Overall production cost per kilo increased during the period, mainly influenced by high levels of rust disease that required a greater amount of agrochemicals, and higher prices of fertilizers.

## CONTEXT

The study took place in the context of decreasing harvests and historically high prices between 2008 and 2012. During this period coffee authorities, including the National Federation of Coffee Growers (FNC), with the support of the national government and several donors took policy actions to help producers increase productivity.



## RESEARCH METHODS



### Baseline

starting year and data over 3 years for comparison.



### Counter factual

comparison with a control group that has not implemented the code.



### Statistical analysis

use of statistical analysis to tease out any significant differences.

## LESSONS

**Gaining insights into implementations of the 4C entry level standard, on the ground and its contribution to desired change, is crucial to the 4C Association. This helps continuously improve the standard as well as facilitate innovations that support implementation at farm level and further contribution to impact. 4 key observations from the study are as follows:**



**Gradual adoption:** in some aspects it takes longer for implementation to take effect and observe change, despite training carried out by 4C implementers, combined with the institutional presence of other entities. In water aspects for example, there has not been enough significant change compared to control groups. Efficiency in training and also the root causes for lack of adoption are important to help improve this situation.



**Safety at work** is a clear weakness in the response by the farmers, as availability and use of protective gear as well as training in handling of agrochemicals are at a very low level. In some instances, this is due to low use of agrochemicals but more effort needs to be put, so that where there is use then appropriate protection is ensured.



**Other influencing factors** affect the rate at which change is achieved. For instance efficiency in the use of inputs is going in the opposite direction to the expected outcome, probably influenced by the need to increase agrochemicals use because of the incidence of plagues and diseases during the period.



Although the implementation has contributed to positive results in yield, net income from coffee was insufficient to achieve the expected profitability. Although the farmers broke-even, for sustainability the farming needs to be profitable not only to cover the costs but also ensure a decent income for those farmers that invest their time in coffee farming. More change in terms of resilience and efficiency given volatile prices, is necessary.

## 4C ASSOCIATION RESPONSE

4C Association appreciates the insights and recommendation of the report as well as the effort to validate the content and assumptions of the 4C Association theory of change. Also appreciated is the confirmation where the theory is valid and the observations where the theory is not achieved. This helps continually improve the theory. A more detailed response to this independent study is available in our website <http://www.4c-coffeeassociation.org/about/impact>.

## 4C ASSOCIATION IN COLOMBIA

- Implementation of the 4C entry level standard in Colombia started in 2007, when a first verification was done.
- Since that year, the entry level standard implementation has expanded among regions with the support of Colombian Coffee Growers Federation, Cooperatives and Exporters.
- By 2013 there were 18 licensed 4C Units representing about 75.000 producers all around the country.



## ABOUT 4C ASSOCIATION



### Our vision

The 4C Association aims to unite all relevant coffee stakeholders in working towards the improvement of the economic, social and environmental conditions of coffee production and processing to build a thriving, sustainable sector for generations to come.

### Our mission

The 4C Association is the leading multi-stakeholder sustainable coffee platform, guiding the mainstream sector toward more sustainable production in a non-competitive arena where all relevant stakeholders are enabled to participate.