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eaae 2017 PARMA ITALY
TOWARDS SUSTAINABLE AGRI-FOOD SYSTEMS:
BALANCING BETWEEN MARKETS AND SOCIETY

Dovetailing Fairtrade and Organic Certification: How the Twin can meet?

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Contribution presented at the XV EAAE Congress, "Towards Sustainable Agri-food Systems: Balancing Between Markets and Society"

August 29th – September 1st, 2017

Parma, Italy

UNIVERSITÀ DI PARMA

EAAE

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Dovetailing Fairtrade and Organic Certification: How the Twin can meet?

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Abstract

Impact analysis of effects of Fairtrade or organic certification for agro commodities are based on different pathways that pursue changes in prices, yield, net income and agricultural practices. Field studies using robust impact methods mostly register mixed results. We intend to identify possible complementarities between Fairtrade and organic standards for coffee and bananas in Peru. Since only minor output price differences are observed, and positive income effects depend mostly on yield increase due to improved input applications. Access to inputs and finance are thus critically important to enable the transition towards certified production. Impact finance may become a challenging alternative.

Keywords: Standards, Impact pathways; Fairtrade; Organic; Coffee & Bananas

1 Introduction

This paper provides a concise overview of the historical evolution and recent trends in Fair Trade (FT) and organic certifications for producer organizations in Latin America. Since major certified agro-commodities – starting with coffee and bananas - are produced and marketed from Latin American (and some Caribbean) countries, important lessons can be drawn with respect to the potential impact for smallholder farmers and the required modifications of fair and sustainable/organic value chains that are required in order to adapt to strongly modifying production and trade conditions.

We start outlining a FT theory of change and identify the additional mechanisms by which organic certification can alter or complement its effects on farmers welfare. Main attention is given to the direct impact channels (raising incomes through guaranteed minimum prices) and the indirect impact channel (better input use leading to higher crop productivity and sometimes also better quality). In addition, the effects of premium investments and changes in sustainability management practices are registered as a result from investment behaviour. Final implications in terms of access to market outlets (certified FT/Organic sales) and specialization of farm-level resources are identified as key mediating factors for reaching sustainable impact.

In order to assess the future feasibility of (combined) FT-Organic certification, we subsequently outline some important effects on production systems and farm household strategies that provide incentives for such adaptation. Given the changes in rural factor markets for labour and capital – particularly the improved access to (micro) finance and the increased off-farm employment opportunities – the impact of value chain certification on improvement in net factor returns becomes more important. Moreover, public good investments from FT premium that are used for improved agricultural production and processing practices may ask for changes in land use pattern (e.g. more specialization) and thus influence the likely payoffs of certification. These contextual factors tend to modify the agency interactions within agricultural value chains, and may incite for 'beyond certification' mechanisms towards further upgrading of market networks.

In the remainder of this paper, we provide some recent evidence from the effects of FT and Organic certification on Latin American farmers and particularly focus on the results from FT-Organic combinations on sustained rural competitiveness. The main question that we will address in this chapter thus refers to: Can combined FT-Organic agro-production create the required synergies for more successful access to markets for Latin American smallholder farmers, given the imminent changes already taking place in local agricultural market and investment conditions?

2. Theory of Change towards Fair Trade and Organic Production

It has become common practice to outline the potential effects of specific interventions through an elaborated theory of change. This includes essentially a comprehensive description and illustration of 'how' and 'why' a desired change is expected to happen in a particular context and more specifically how farmers might respond to changes in production and trade conditions. In a recent publication (FLO, 2015) Fairtrade International (FLO) states that the Fair Trade vision is "A world in which all small producers and workers can enjoy secure and sustainable livelihoods, fulfil their potential and decide on their future", and in order to achieve this vision the certification established four key interventions: economic protection, empowerment policies, Fair Trade Premium, and Fairtrade mark.

In addition, in its publication "Fairtrade Theory of Change" Version 2.0 (2015) FLO points out the mechanisms by which it is expected that the interventions should have an effect on the producers and cooperatives they work with. We have attempted to simplify that original version and highlight the points where organic production could have a potentiating effect beyond the FT mechanisms. Figure 1 shows the pathway of change that Fair Trade generates from three of the four interventions mentioned above (Fairtrade mark is not taken into account since its effects are registered towards consumers and intermediaries). The graph highlights (marked in green) the specific mechanisms through which organic production is expected to reach producer impact.

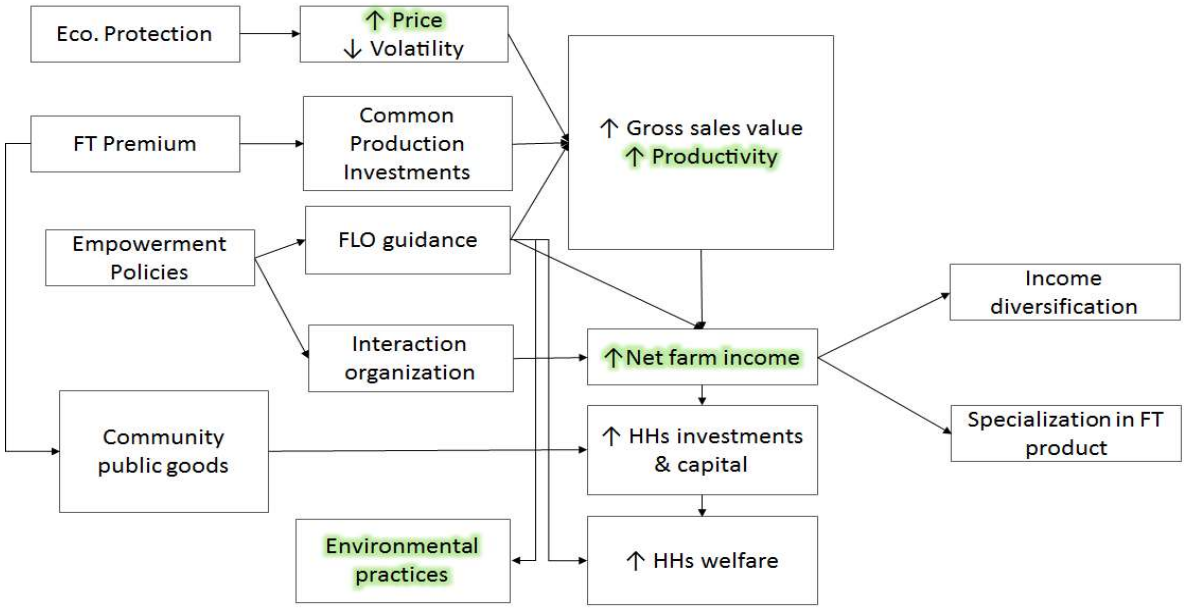

Figure 1: Fairtrade and Organic Certification Impact Pathways.

The pathway of economic protection reduces price volatility and in addition it increases price because the guaranteed minimum price is higher than conventional price most of the time. These two effects combined lead to an increase in gross sales revenues. On the other hand, the FT Premium enables organizations and farmers to invest in different assets, and when these investments are in productive commons (e.g. improved processing capacity; better infrastructures, etc.), individual farm-level productivity is incremented which also increases gross sales revenues.

The empowerment policies include better ways to interact within the farmer´s organization and concern FLO guidelines on how to deal with issues like gender equality and environmental care practices. A better interaction of farmers with their organizations can lead to change in perceptions about cooperative loyalty and probably reinforce trust and fidelity. A better relation and appropriate functioning of the farmers organization may allow for improved business strategies and sales contracts (including reduced side sales), what in turn can lead to increases in farmers' net farm income. Guidelines related to environmental practices may also influence productivity and probably

incur costs of production and thereby affect net farm income. Rules that have to do with gender equality practices or child labour will definitely affect final household welfare.

The increase in net farm income described above can lead producers to take one of the following two actions. On one hand, because households now have more income, they can spend time and resources to *diversify* their productive activities (grow other products or engage in non-farm activities). However, there is also the possibility that households prefer to *specialize* in the FT product because it generates more revenues. Independently of this decision, the increase in net household income can result in an increase in investments at home and in their assets and capital, resulting in an increase in household welfare. Besides the mechanism described above, it is important to note also that the FT Premium may as well have an effect on assets or capital accumulation when part of it is invested in community public goods.

As we mentioned before, items highlighted in green in Figure 1 are those where complementarities of Fair Trade with Organic production can be expected. First, it can add to the price effect given that most of the time products that are FT-Organic receive better prices than just FT or just Organic products. Second, changing to organic farming entails some costs that FT does not bear. Because of the prohibition to use several pesticides and non-organic fertilizers, usually the change to organic certification implies a reduction in productivity, at least during the initial years, and also an increase in the amount of labour needed. So, the benefit of the higher price can come at this cost, and the final effect on net farm income will depend on several factors like the local agroecological conditions, the previous methods of production[1], the labour intensity of the crop, threats of pests and diseases, etc. Not to mention also that bearing the cost of the organic certification could be more difficult than obtaining the FT certification, as farmers usually have to wait three years without using prohibited products before being able to sale as organic. However, it is worth noticing that FLO guidelines on environmental practices are increasingly incorporating similar rules to organic certification, so that some of the extra costs mentioned here could be present with FT certification anyway.

There is evidence in the literature that supports a large part of the primary pathway that we have identified. Probably, the increase in prices is the mechanism that has been most registered, for example by Bacon (2005), Fort and Ruben (2009a) and Wollni and Zeller (2007) in coffee, and in Fort and Ruben (2009b) for bananas. Barham et al (2001) and Ruben et al (2009) also find evidence of an increase in productivity thanks to FT, while only one paper by Beuchelt and Zeller (2011) finds an increase in productivity thanks to organic production. Moreover, Bacon (2005) finds explicit evidence about how the rise in prices by FT reduces household vulnerability. Ruben and Zuniga (2011) and Mendez et. al (2010) show that FT increases the income of the farm and household, while Jaffe (2008) finds an increase in household welfare due to the rise in net income and the cooperative investments in community public goods. Utting-Chamorro (2005) also finds similar evidence of women's empowerment through FT.

As to the discussion between the final specialization or diversification effects, Arnould et. al (2009) and Ruben and Zuniga (2011) find that FT farmers in Latin America tend to specialize in the certificated product, while Becchetti and Constantino (2005) found that producers of FT in Kenya tend to have a greater diversification of crops compared to producers without this certification. These secondary responses tend to depend most on local market circumstances (relative prices and market outlets of FT/Organic products versus other products) that may be modified if agricultural transitions takes place. The competitive advantage of FT-Organic can thus be subject to change and therefore the relative importance of the earlier outlined impact pathways could also be modified.

[1] There are several examples of poor farmers that were able to make the change to organic agriculture very smoothly as they never use pesticides or other prohibited inputs before (''organic by default''), but they need to implement substantial local substitute inputs (from waste, manure or crop residues) in order to compensate for nutrient losses.

3. Fair Trade and Organic certification effects for Latin American farmers

In this section, we provide an overview of several studies that use quantitative information and methods that include control groups or counterfactuals, for analysing the effects of FT certification or joint FT-Organic certifications in Latin America. Although many of these studies examine farmers organizations that have FT and/or Organic certifications, there are just a few of them that includes an evaluation design that allow for a differentiation of the FT and the Organic effects in order to see how they interact. Most of the available studies just compare the results of farmer in these organizations with non-organized farmers without any certification, or farmers in organizations that sell only as conventional production. In those latter cases, even thought there might be selection problems with the control group, we are only able to see effects of FT-Organic certification as a whole.

We will start by reviewing and summarizing the main findings of these field studies, especially including reports that allow for a comparison between FT-Organic and Organic-only coffee cooperatives in Latin America (section 3.1), and then describe in more detail the studies by Ruben and Fort (2012) and Fort and Ruben (2009a,b) where we can analyse more carefully potential complementarities of these two certifications (section 3.2). The authors studied banana producer´s organizations in the north of Peru, and coffee cooperative producers in the central highlands of Peru, and in both cases were able to construct an impact evaluation design that allow them to analyze complementarities of the FT certification with Organic production. The list of studies and information about analytical approach and the results are shown in Table 1.

Table 1: Summary of Latin American coffee and banana certification impact studies.

Product	Certification	Country	Effect	Study
Banana	Fair Trade	Ecuador	Positive productivity effect	Ruben et al (2009)
Banana	Fair Trade	Costa Rica	Positive assets effect	Zuñiga Arias and Saenz Segura (2009)
Banana	Fair Trade and Organic	Peru	Positive price effect, positive productivity effect	Fort and Ruben (2009b)
Coffee	Fair Trade	Peru, Nicaragua, Guatemala	Positive price effect	Arnould et al (2009)
Coffee	Fair Trade	Mexico	Positive price effect	Jaffee (2009)
Coffee	Fair Trade	Nicaragua	Positive price effect	Ruben and Zuñiga (2011)
Coffee	Fair Trade and Organic	Peru	No effect	Ruben and Fort (2012)
Coffee	Fair Trade and Organic	Nicaragua	Positive price effect	Bacon (2005)
Coffee	Fair Trade and Organic	Mexico	Positive price effect	Weber (2011)
Coffee	Fair Trade and Organic	Costa Rica	Positive price effect	Wollni and Zeller (2007)
Coffee	Fair Trade and Organic	Mexico, Central America	Positive price effect	Méndez et al (2010)
Coffee	Fair Trade and Organic	Mexico	Positive price effect, positive productivity effect	Barham et al (2001)
Coffee	Fair Trade and Organic	Nicaragua	Positive price effect, positive productivity effect (only organic)	Beuchelt and Zeller (2011)

Source: Own elaboration

The high relative importance of coffee and banana FT production in Latin America (LA) has a correlate with the concentration of studies with quantitative analysis from the region. For the banana sector, Ruben et al (2009) analysed the functions of production of two groups of growers in Ecuador, one with FT and one without certification. Estimating the production function of each group separately, but with the same variables, the study concludes that the FT mechanism generates higher yields, which translates directly into higher household income. Another study by Zuñiga Arias and Saenz Segura (2009) estimates the effect of having a FT certification for banana plantations in Costa Rica. This study uses a propensity score matching method and finds an effect of FT on total household assets and on educational expenditures. In addition, an interesting finding of the study is that the FT Premium is more appreciated when handled collectively and used for investments in projects collectively agreed that when delivered to individually as part of their wages.

Within the coffee sector, Arnould et. al (2009) analyses the effects of FT in Peru, Nicaragua and Guatemala, using a sample of small, medium and large cooperatives in each country, comparing them with unorganized coffee producers. The study shows that producers participating in FT receive a higher selling price and an increase the volume of sales, which in turn results in more coffee specialization. Jaffe (2008), who studies the impact of FT on two cooperatives with indigenous coffee producers in Mexico between 2001 and 2005, found similar results. FT producers receive higher prices (although not enough to attract new producers), as well as realize increased sales volume, yield and income level of the family. The author also found an increase in household welfare, specifically in a higher protein consumption (cheese) and better food security. Bacon's (2005) study in Nicaragua shows that being able to access the FT market reduces farmers' livelihood vulnerability because it allows them to face crisis in the conventional market.

The study of Ruben and Zuniga (2011) compared FT coffee producers with conventional producers and producers with two other private certification regimes (Rainforest Alliance and Café Practices) in Nicaragua, matching producers according to their structural characteristics. The study shows that FT producers have in general a higher household income (though less than Café Practices) and tend to be more specialized in coffee than producers in the other groups. An important aspect of the study is that it shows that FT has an important effect on the strengthening of organizations as indicated by the pathway in the previous section. However, this is not reflected in greater fidelity to the system (unlike other certifications), reinforcing the side sales problem encountered by Ruben and Fort (2012) in the Peruvian coffee cooperatives.

The study of Webber (2011) analyses the effect on the price of the FT-Organic production in Mexico using a matching scheme with conventional producers. The study finds that the combined FT-Organic certification has a significant effect on the price, but that membership cost to be part of the organization and the household-level costs for certification makes it an unattractive scheme for small producers. Wollni and Zeller (2007) also conducted a study to see the effect on the price when selling to specialty markets (which means the adoption of quality standards, including FT and Organic) using cooperatives in Costa Rica. As in the previous case, it is not possible to measure the marginal effect of having FT over organic, and the results shows again an increase in prices, which demonstrates the importance of economic protection interventions.

The study of Mendez et. al (2010) analyses the effect of Organic, FT and FT-Organic coffee in Guatemala, El Salvador, Nicaragua and Mexico surveying a total of 469 producers in 18 cooperatives. Their results show an increase in prices compared to conventional producers in the three cases analysed and an increase in the access to credit (to grow coffee) in the FT and FT-Organic producers. The study by Barham (2001) in Mexico reveals that the producers of FT-Organic organizations receive a higher price than conventional producers (although this difference is marginal), and have higher yields that generates higher gross income from the sales of coffee.

Finally, Beuchelt and Zeller (2011) collected data for all cooperatives in northern Nicaragua in 2007 and then classified them according to their type of certification and market channel into conventional, organic, and FT-Organic certified cooperatives. FT-Organic coffee was found to achieve the highest farm-gate prices, followed by organic coffee in comparison to conventional prices. Organic production processes require fewer purchased inputs but are far more labour-intensive. Due to constrained availability of family labour, additional wage labour has to be hired which offsets saved input costs. The higher prices of certified coffees compensate for the production costs but fail to increase per hectare gross margins and profits in the case of FT-Organic farmers compared to conventional produces. However, Organic producers have higher yields and thus experience an increase in per hectare gross margins and profits. Due to smaller coffee areas and large family size, the increase in gross margins does not result in improved per capita net coffee incomes for organic certified producers. Also, FT-Organic certified producers do not have higher per capita net coffee incomes than conventional producers (Beuchelt and Zeller 2011). The study shows that higher farm-gate prices do not lead necessarily to higher per capita net coffee income, as yield levels, production costs, family- and land size, as well as labour availability play important mediating roles. Despite the not so clear results regarding the profitability of the organic certified production system, the study shows that the price mechanism is enhanced by interacting of FT-Organic, and it also claims that productivity does not necessarily decrease using organic production when it occurs in a context of low initial technology.

4. Complementarities between FT and Organic certifications

We now present in more detail results from two field studies where we could register the complementarities between FT and Organic certifications. These studies differ from many of the previous ones presented in the way that the control group was selected. The registered outcomes are therefore considered robust.

Banana producers' organizations in Northern Peru

Banana production for export in Peru started in the northern region of Piura at the beginning of the 1990's with the arrival of a few international traders to the region. First attempts to deliver the product to the US and European markets failed because of quality problems and bad coordination between the different agents in the chain. Given the highly appropriate conditions of the Chira Valley to develop organic production, the Agricultural Ministry started in 1999 a program to promote the production and export chain for organic banana from the region. The program promoted producer's association and provided them with technical assistance as well as credit for the purchase of organic fertilizers and packing equipment.

As a result, several trading enterprises started to work in the valley since the year 2000, increasing the volume of organic banana exports in more than 30 times its initial level in less than 5 years. At the time of the study, there were only three export firms operating in the valley: (1) Biocosta, that started in 2002 and provides products for T.Port in Germany; (2) COPDEBAN/DOLE, that started in 2001 and provides organic bananas to the US market; and (3) Grupo Hualtaco, that started in 2002 (previously called Biorganika) and concentrates more than 80 percent of their sales on organic Fair Trade bananas to the European market.

At the same time, there were around 14 organizations of producers selling banana for exports to these traders. Most of them were associated to one of two Networks in the valley: (1) the Central Piurana de Bananeros Organicos (CEPIBO), functioning since 2004 with five member organizations; and (2) the Red de Pequeños Productores de Banano Organico Comercio Justo (REPEBAN), which started in 2005 with six member organizations. One of the oldest producers association in the valley - which

does not belong to any of these networks - is the Asociación de Productores de Banano Orgánico del Valle del Chira (APVCH), established in 2001 by a group of farmers that are members of the Peasant Community of Querecotillo and Salitral. The Community exists since 1820 and is located in the Department of Piura, Province of Sullana, Districts of Querecotillo and Salitral. It currently counts with more than 6,000 peasants as affiliated members. Land is formally owned by the Community as a whole (title officially registered), but it is distributed equally among its members, each receiving around 1.5 hectares.

APVCH has a strong relationship with the Grupo Hualtaco with whom they worked since its formalization, and the latter assisted them in obtaining their Organic and FT certifications. APVCH has 241 associates, 95% of them are organic certified since 2002, and the rest obtained certification since 2006. FT sales started also since 2002 and have been steadily increasing since then. This producers association was selected as the treatment group to evaluate the impact of FT, given the relatively longer period that their members have being able to benefit from Fair trade engagement.

In turn, we decided to select two different control groups for this study. The first group consists of farmers participating since the year 2003 in the *Asociacion de Productores de Banano Organico de Salitral* (APBOS), located in the District of Salitral. This association had 173 members and obtained the FT certification at the beginning of 2007 but had not yet made any sales under this trademark when data was collected. The second control group was composed by banana producers that belong to the Community, but are not associated in any organization (consequently, they do not have FT) and do not have organic production of banana. This category of farmers can be considered as conventional banana producers. The main different with the other groups was that these farmers are not integrated to the export chain and sale only to local intermediaries.

We collected information for 50 producers of APVCH, 110 producers of APBOS (Control-1), and 40 non-associated producers of conventional banana (Control-2), for a total number of 200 surveys. For the selection of APVCH and APBOS farmers the authors made use of the complete list of members of these organizations, containing information on total farm size and the size of their banana plantation. Sample selection for control group 1 was done in two steps. First they randomly selected farmers from the APVCH group. Hereafter, we restricted the universe of farmers from APBOS to the ones with total farm size and size of their banana plantations within the range of the APVCH sample, and then they made a random sampling from this group.

For the selection of non-associated conventional farmers (Control-2) we implemented another strategy. After finishing a questionnaire with a farmer from APVCH, the surveyor asked him to recommend two neighbouring farmers that are non-organic banana producers, but do not belong to any association and sell their product to local intermediaries. The surveyors then visited each of them and used some “filter” questions before starting the interview. These initial questions provided confirmation on the required farmer’ characteristics (i.e. community member, non-organic banana producer, do not belong to any association, sale to local intermediaries). Field supervisors checked the questionnaires every night to ensure that farmers from Control-2 indeed match the required characteristics.The estimation method selected for the study was a Propensity Score Matching estimation (PSM). The propensity score is estimated for each farmer in the complete sample by using the regression’s predicted probability of having FT certification (see Annex 1)..

In terms of the comparison between FT and organic banana producers from APVCH and non-FT organic producers from APBOS we observe a significant difference on net household income which is mainly driven by a higher productivity in banana production. It is interesting to note that the difference in profits is obtained despite the similarity of banana prices for farmers in both organizations, as the prices for organic banana and organic-FT banana are very close. Although we

do not find significant differences in total household expenditures, FT farmers present a higher value of household assets and also receive more credit than farmers in the Control-1 group. The value of household assets acquired since the year 2000 is significantly higher than the one for these controls, which may imply that FT farmers invested a large proportion of their extra earnings on these improvements. Similar results are obtained when comparing FT-Organic producers with conventional farmers, but this time the higher income in banana production is mainly driven by the price difference rather than banana productivity. Moreover, FT farmers make substantially more land-attached investments. Conventional farmers are more affected by local market conditions during the high-season when excess supply drives banana prices down. Despite this price difference, it is very important to notice that the introduction of the FT market for banana producers in the valley seems to have had an important effect on local farm-gate prices for conventional banana. As many key informants in the valley suggested, local retailers who buy conventional banana for markets in the region and in Lima appear to have being forced to increase prices in order to maintain their providers working with them.

Total household expenditures are also significantly higher for FT farmers when compared to the conventional group, reflecting an overall welfare effect of FT. Important new differences emerge in terms of the larger number of labour days (*jornales*) used for banana production, and the increased use of organic fertilizers while reducing reliance on chemical fertilizer. FT farmers do not only use more family labour for this activity but also employ more wage labour from outside the household. This fact, together with the increased willingness to bear risk, seem to indicate that FT farmers are concentrating their effort on banana production instead of pursuing more income diversification activities that could reduce their risk exposure (but also decrease their expected income). Other effects related to better access to credit, higher risk acceptance and stronger engagement with local farmers' organizations are equally confirmed.

Table 2: Comparison between Fair Trade and Organic Banana Certification.

	FT-Organic vs Organic			**FT-Organic vs Conventional**			**Organic vs Conventional**		
	Diffe-rence	S.E.	T-stat	Diffe-rence	S.E.	T-stat	Diffe-rence	S.E.	T-stat
INCOME									
Salary Income	1,094	1,335	0.82	603	1,835	0.33	366	1,484	0.25
Non-Salary Income	-1,463	996	-1.47	-379	2,669	-0.14	13,711	12,442	1.10
Gross Income banana	4,015	1,626	2.47**	4,944	2,596	1.90*	778	2,279	0.34
Gross Income other crops	-128	518	-0.25	91	404	0.22	-52	462	-0.11
Total Gross Income	3,518	2,146	1.64*	5,259	3,358	1.57	14,802	11,536	1.28
Total Net Income	3,928	1,890	2.08**	5,573	3,426	1.63*	14,480	12,023	1.20
PRODUCTION									
Profit banana production	4,440	1,444	3.08***	5,355	2,929	1.83*	393	1,955	0.20
Banana production (Kg.)	8,339	3,670	2.27**	7,045	5,830	1.21	-855	5,502	-0.16
Banana productivity (Kg./Ha.)	4,615	2,961	1.56*	3,343	5,124	0.65	-9,041	4,127	-2.19**
PRICE									
Price Banana-high season	0.01	0.01	0.51	0.14	0.03	5.55***	0.09	0.01	6.92***
Price Banana-low season	0.01	0.01	0.60	0.03	0.01	1.96*	0.00	0.01	0.22

Note: T-stat > 2.66 = *** sign at 99%: T-stat > 2.00 = ** sign at 95% , T-stat > 1.67 = * sign. at 90%

As anticipated in the discussion of impact pathways and complementarities between both types of certifications, we observe here that organic banana producers register a significantly lower productivity than their conventional neighbour producers but obtain a higher price, although only during the high season. However, this price advantage is not enough to attain higher income from banana production.

Moreover, as we consider in the comparison between FT-Organic and Organic-only producers, the marginal FT effect does not appear in terms of a higher price but as an increase in banana productivity, which leads to a higher profit. As discussed before, this productivity effect can be attributed to the use of the FT premium for better agricultural inputs and technical assistance as well as better infrastructure that positively affects production.

Coffee Cooperatives in Central Peru

This study evaluates the impact of FT on coffee producers in the Selva Central of Peru, in two provinces of the department of Junín (Ruben and Fort, 2012; Fort and Ruben, 2009b). Since the second half of the 19th century, this area was one of the biggest hacienda's economies in the country, with coffee plantations covering vast amounts of land. With the process of land reform in the late 1960's these provinces started to develop a cooperative model for the commercialization of coffee. As farms were still managed individually, the agrarian structure of the region can be characterized by the predominance of small- and medium-size land holdings. While many of these Cooperatives were dissolved during the 1990's (the so-called 'Parcellation' process), some of them manage to survive the structural reforms of that time, and some other have being recently reactivated. At the time of the study (2009), there were around 10 farmers organizations active in the Provinces of Chanchamayo and Satipo in the department of Junín.

For the treatment group, we selected three Cooperatives that were FT certified for at least three years, and were active in using the certification for their sales of coffee. An important characteristic to take into account is that all of them have at least half of their associates under organic certified coffee production and every year an important part of their production is sold under this label. Based on the characteristics of the FT organizations under study and relying on the personal interviews with their representatives, we decided to select members of three other organizations as the control group. Most of them are younger organizations and have just recently started organic production and sales under this label.

We could count with databases containing information on total farm sizes, size of coffee plantations, and year of organic certification (or transition) for all members of these six organizations. Using this basic information, we initially selected 60 coffee producers of each of these six organizations, 30 organic and 30 conventional, for a total sample of 360 surveys. This stratification was very important for creating better comparison groups between the FT and Non-FT Coops, and allowed us also to analyse the potential additional impact of FT when combined with the Organic label (FT-Organic vs Organic). Sampling based on farm sizes was done first for member of the FT organizations, and after that we selected producers on the same area range for the control groups.

Fair Trade farmers in both groups have on average an older and less educated head of the households, have being living for a longer in their localities, have parcels further away from the district's capital, and were participating in more organizations than producers in the control group. Most importantly, land holdings of FT farmers are smaller on average than the ones for farmers in the control group, in particular for organic producers. These variables, as well as other variables that might be affecting the expected outcomes from FT or influencing the probability of getting the FT certification, have to be taken into account in order to construct a good counterfactual for measuring the impact on FT producers. The matching estimation for getting un-biased groups of FT and non FT farm-households can only rely on characteristics that – as such – are not influenced by participation in Fair Trade.
In order to balance the sample of FT farmers with the sample of the controls, we estimate the probability of having FT certification for the organic and conventional groups separately, based on a set of exogenous characteristics and pre-treatment variables. The probability model for organic farmers reveals a significant effect in terms of the years of residence in the locality, the number of

organizations in which members of the households were participating before the year 2000, and in the size of their coffee plantation. Only this later effect is maintained for conventional farmers, which also show a significant difference regarding the head of household's age.

Table 3 presents the principal results of the PSM estimation. For both groups of farmers (organic and conventional) the results did not show any significant effect of FT involvement in terms of higher household income. Productivity levels for FT-Organic farmers seem to be slightly higher than their counterparts but no significant difference could be found, although, a negative and significant difference was obtained for FT conventional farmers.

The lack of a real price difference between FT and Non-FT producers in both groups seems to be the main limitation for observing higher benefits. The still reduced market for FT sales in the region and the high local prices for conventional and organic coffee paid the year of the survey as a consequence of a production shortage can at least in part explain this fact. Apparently, FT prices are increasingly considered as a regional floor price offered by local traders to all coffee farmers and thus Non-FT farmers reap similar benefits as part of an externality effect.

Table 3: Coffee certification impacts.

	FT-Organic vs Organic		FT-Conventional vs Conventional	
Variable	Difference	Significance	Difference	Significance
Production Gross coffee	698		-1,467	
Productivity Gross coffee	394		-327**	
Price average	0.20		0.05	
Household Expenditures	-1,395		138	
Value of animals stock	290	*	669	**
Value agricultural assets	2,001	**	1,412	
Made house improvement	-0.08		0.15	**

Source : Fort and Ruben, 2009b

Even though there is no significant difference in household expenditures for FT producers in either the organic or conventional groups, both of them present higher levels of animal stocks and an increment in their value of agricultural assets in the last years. In terms of their general wellbeing, farmers in older FT cooperatives appear to be better-off than the ones in cooperatives with a recent FT involvement. Additionally, FT farmers in the conventional group have also managed to invest more in house improvements and land-attached infrastructure than their counterparts. The improvements made in relation to (organic) coffee production might reveal an effect of FT in terms of providing a more stable income to farmers that enables a gradually shift towards more specialized (organic) farming. However, the maintenance of higher animal stocks can be exposing a still present reluctance to full specialization and the preference of a more diversified portfolio.

Finally, the lack of many expected effects from FT can at least partially be attributed to the deficient distribution and use of the FT premium as perceived by our sample of farmers. The fact that only 23% of the total number of interviewed FT producers claim to get any benefit from the use of this premium is a clear indication. Cooperative's directories might have to find new ways for a more effective distribution of the premium between their members so that its use can help boosting productivity levels and allow a sustainable increase of their welfare.

5. Discussion and Outlook

In this article we presented a concise overview of the farm household impact as registered in several quantitative impact studies that compared certified farmers (FT or Organic; FT-Organic) with conventional (non-certified) farmers. This enables us to make a more balanced assessment of the likely impact pathways that generate changes in farmers' livelihoods, as well as the secondary effects that may occur due to adjustments in farming systems and marketing arrangements.

First, looking at the different impact pathways (as outlined in section 2), it appears that the "protection mechanism" that allows farmers to obtain better prices for their products seems to register positive effects on farmers' income in almost all cases (Swinnen 2007). However, it is important to notice that this result might be driven by methodological flaws. Using as a control group conventional farmers that may have different structural characteristics (in terms of farm size, education, coffee tree density) and are sometimes not even part of an association, may create a selection bias in favour of certified farmers that are better off even without certifications.

In more specific terms, the effects of FT certification through other pathways of yields, productivity and net income are more clearly acknowledged for banana producers than in the coffee sector. This difference is probably related to a more direct use of the FT premium in the banana case (purchase of improved inputs and technical assistance that lead to higher productivity), whereas in coffee cooperatives the premium is frequently invested in social services or maintained as reserve fund. A tendency of farmers to specialize more household resources in the certified product appears in both cases, thus increasing their vulnerability to market volatility.

Second, we analysed the potential effects of combined FT-Organic certification. This combination usually helps farmers to obtain a higher price when compared to only-FT or only organic products. However, the evidence of the synergy for the combination for generating outcomes in terms of obtaining higher productivity and finally also higher net income is still less conclusive. Moreover, the Peruvian case study for coffee cooperatives shows that the price effect may not always hold when certifications are combined. The Peru banana case study provides a nice example where an appropriate use of the FT premium for enhancing FT practices can offset the reduction of (land and labour) productivity when applying organic cultivation techniques.

Third, certification also incites to some secondary behavioural effects arising from certification that are increasingly registered. Several published papers refer to rather limited welfare effects from certification that tend to be related to limited "loyalty' of farmers to sell their coffee to the cooperative in cases when conventional prices are close to the certified ones and cash in hand is an important issue. The certified cooperatives are frequently not able to make direct payments to farmers upon delivery of their coffee. Moreover, pre-finance (for buying inputs and paying wage labour) is only scarcely provided as part of the certification package. It is therefore relevant to compare FT-Organic certification with other alternative systems that provide pre-finance to coops and enables both quality upgrading as well as increased loyalty between value chain partners.

Pre-finance can be considered as an alternative strategy for improving yields, quality and income. Given the current growing appreciation for impact investment, it may be an important counterfactual for certification (ANDE 2016). This type of funding opportunities is still scarce in the region, but it has the potential to improve access to short-term (production) credit and longer-term (investment) finance for smallholder farmers and their organizations that cannot bear the cost of becoming certified, and that need operating funds for enabling their members to improve quality and productivity. Moreover, such financial scheme can accompany better the transition towards organic production, not only covering the initial payment for obtaining the certification, but also recurrent cost during subsequent transition years when productivity is still low and before obtaining the higher certified price

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