



Coffee: The Hidden Crisis Behind the Success

Study on Sustainability Within the Coffee Industry

| Research Report |

A report

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Introduction

Over two billion cups of coffee are consumed every day, generating revenues close to 200 billion dollars per year¹, mainly in Europe, the United States and Brazil, but also increasingly in Asia, where its consumption goes hand in hand with the rising standard of living of the middle classes².

The coffee market generates significant revenues for economic stakeholders situated further down the chain. The success of coffee pods, in particular, which now represent over 11% of global coffee sales and whose revenues are expected to grow by 45% by 2020, has enabled most of the traditional leaders in the sector to significantly enhance their sales: whereas in France a 250 g pack of ground coffee costs about 2.50 to 3.00 euros in the supermarket (i.e. 10 to 12 euros/kg), Nespresso-compatible capsules sell for up to 60 euros/kg or more.

Produced primarily in Brazil (32% of volumes - 4/5 Arabica and 1/5 Robusta), Vietnam (19% of volumes - primarily Robusta), Colombia (9% of volumes - primarily Arabica) and Indonesia (7% of volumes - 3/4 Robusta and 1/4 Arabica),³ coffee is grown by approximately 25 million farmers in over 80 countries located on both sides of the equator, mostly on small farms of less than 5 ha⁴. In 2017, 9 million tonnes of coffee (60% Arabica and 40% Robusta), almost 3/4, were traded on world markets with coffee ranked among the most valuable agricultural products listed on the stock exchange (in 2015, its export value amounted to 18 billion dollars)⁵. However, the coffee sector has been characterised, especially since the end of the last International Coffee Agreement (1989), by greater price volatility, lower overall incomes for producers and the concentration of power in the hands of buyers and large international brands. All these trends question the sector's economic sustainability.

Furthermore, for the past few years, coffee production – especially Arabica – has been impacted by rising temperatures and altered rainfall patterns due to climate change: resulting in uncertain yields, damage caused by pests and diseases and problems in maintaining quality. Recent studies estimate that without a concerted effort to combat climate change, the global area suitable for coffee production could be reduced by 50% by 2050⁶. In 2080, wild coffee, a major genetic resource for farmers, could become extinct⁷, calling into question the coffee market and its diversity as they currently exist.

Faced with this situation, many companies, particularly coffee sector leaders, have initiated action programmes in the field to limit the impact of climate change and improve the situation of coffee producers, some through certification and/or independent labels⁸. Programmes that have been added to sectors established over the past 30 years by Fairtrade stakeholders (companies, NGOs, cooperatives, committed consumers) in order to improve the living and working conditions of coffee producers.

Given the reassuring messages that some multinational coffee companies use when communicating with consumers, it might be reasonable to ask if (all) the current initiatives can overcome the challenges faced by the coffee sector. More broadly, the question which arises concerns the conditions that would enable the

¹ Potts, J. et al., *The state of sustainability initiatives review*, 2014

² Hivos, *Coffee Barometer*, 2014

³ International Coffee Organization, *Data on the Global Coffee Trade*, http://www.ico.org/new_historical.asp

⁴ International Coffee Organization, *Data on the Global Coffee Trade*, http://www.ico.org/new_historical.asp

⁵ International Coffee Organization, *Data on the Global Coffee Trade*, http://www.ico.org/new_historical.asp

⁶ The Climate Institute, *A Brewing Storm: The climate change risks to coffee*, 2016

⁷ The Climate Institute, *A Brewing Storm: The climate change risks to coffee*, 2016

⁸ Potts, J. et al., *The state of sustainability initiatives review*, 2014

creation of a truly sustainable coffee sector – for producers as well as consumers – and that would guarantee its resilience in the face of climate change.

List of Abbreviations

ICA	International Coffee Agreement
CIF	Cost, Insurance & Freight (Incoterm related to imports)
CLAC	Latin American and Caribbean Network of Fair Trade Small Producers and Workers
WFP	Food and Agriculture Organization of the United Nations
FLO	Fairtrade Labelling Organizations International, known as <i>Fairtrade International</i> since 2015
IMF	International Monetary Fund
FOB	<i>Free on Board</i> (Incoterm related to exports)
FTI	Fairtrade International
Hypermarket	Hypermarket
Hypermarkets and Supermarkets	Hypermarkets and Supermarkets
ICO	International Coffee Organisation
INEI	National Institute of Statistics and Informatics, Peru
INSEE	National Institute of Statistics and Economic Studies, France
Private Label	Private Label
m	Million
bn	Billion
ILO	International Labour Organisation
NGO	Non-Governmental Organisation
PO	Producer Organisation
GDP	Gross Domestic Product
SME	Small and Medium-Sized Enterprises
RFA	Rainforest Alliance
REDD+	United Nations initiative for "Reducing Emissions ₂ from Deforestation and Forest Degradation"
SPP	Small Producers' Symbol (fair trade label created by Fairtrade-certified Latin-American producer organisations)
UN Comtrade	United Nations International Trade Statistics Database
UNCTAD	United Nations Conference on Trade and Development
UNFCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
USD	United States Dollars
UTZ	Certification formally known as UTZ Kapeh, which means "good coffee" in the Mayan language
4C	Common Code for the Coffee Community (code of conduct developed by leading coffee roasters and traders as a starting point for a process of continuous improvement, which could lead to more stringent coffee certification processes (UTZ, Rainforest Alliance, Fairtrade, organic farming, etc.)

Glossary

Arabica and Robusta

The two main coffee varieties cultivated in the world (among the 80 existing varieties) are Arabica and Robusta:

- The **Arabica** species, or *Coffea arabica*, originated in Ethiopia. It is a high elevation plant, grown at altitudes ranging from 600 to 2,000 m in tropical climates, which requires temperatures between 18 to 25°C, 1,500 to 1,800 mm of rain and is frost intolerant. It produces the most highly sought after coffee varieties - Bourbon, Maragogype, Typica and Catimor - for their fine aromas, balance and acidity. Arabica also has a relatively high sensitivity to climatic variations, pests and diseases.
- The **Robusta** species, or *Coffea canephora*, was discovered in Zaire in the 19th century. It owes its name to its strength and disease resistance. It is a lowland plant cultivated in equatorial climates, which requires temperatures around 25°C, rainfall over 2,000 mm and humidity near saturation. It produces a more powerful, full-bodied coffee than Arabica and is less delicate with twice the amount of caffeine.

The optimisation of Arabica and Robusta coffee quality depends on endogenous (altitude, soil type and cultivar - Bourbon, Caturra, Moka, etc.) and exogenous factors (the use of inputs, weeding, irrigation, sun- or shade-grown, wet or dry transformation method, etc.). These factors are a lot more relevant to Arabica than to Robusta cultivation, which is considered to be an undifferentiated product and for which little effort has been made to distinguish its flavours.

Differentiated Coffees

So called "differentiated" coffees share traceability requirements in order to highlight their particular characteristics thereby distinguishing themselves from blended and standardised coffees.

There are several types of products in this category:

- **Origin Coffees** are those associated with a particular geographic location (classic examples being *Colombian coffee* and *Blue Mountain* from Jamaica). Their territorial identity makes it possible to associate a certain number of attributes with the product (flavour, aroma, etc.) and build consumer confidence. Single origin certification involves two key aspects: the delimitation of the production area and the sensory typicality of the product.
- **Specialty Coffees** are superior quality coffees available in limited quantities and traceable to a single origin. Consumers associate them with a distinctive and superior taste and character to "ordinary" coffee. A specialty coffee is expected to have some aromatic complexity, specific growing and harvesting conditions and very few defects. Some specialty coffees provide traceability guarantees to the terroir ("terroir coffees") and even the plot of land ("micro-lot coffee").
- **Certified Coffees** are coffees that comply with internal or external specifications related to agronomic, social and environmental production conditions and which are verified by an independent auditor. They bring together so-called "sustainable" certifications (mainly the independent UTZ and Rainforest Alliance labels, which have now merged, and the internal labels such as Nespresso's AAA label and Starbucks' Cafe Practices label), fair trade certifications and organic certifications.

So-called "sustainable" certifications

Written guarantee (in the form of a certificate) issued by a third party that a product, service or system complies with environmental requirements aimed at improving agricultural practices, banning hazardous chemical inputs, protecting biodiversity and respecting the International Labour Organisation's fundamental conventions.

Fair trade certifications

Written guarantee (in the form of a certificate) issued by a third party that a product, service or system complies with fair trade requirements (see definition below). In France, fair trade certifications comply with the charter published by Commerce Équitable France.

Value chain (or sector)

The terms "sector" and "value chain" refer to

- all economic activities ranging from the production of raw materials to the consumption of (all of) the finished product(s) and their end of life.
- as well as the vertical chain of economic stakeholders who conduct these activities.

Fair Trade

Fair Trade is a commercial partnership based on dialogue, transparency and respect whose main objective is to achieve greater equality in global commerce. It contributes to sustainable development by providing improved business conditions and guaranteeing the rights of marginalised producers and workers, particularly in the Global South. Fair Trade organisations (supported by consumers) are actively engaged in supporting producers, raising awareness and campaigning for changes in the rules and practices of conventional international trade.

(definition of FINE, a group of fair trade stakeholders bringing together the major international networks Fairtrade International, the World Fair Trade Organisation and the European Fair Trade Association)

Commoditisation *(according to the U.S. Commodity Futures Trading Commission)*

Commoditisation is the process whereby a product is characterised by:

- The homogeneity of the product: the product must be presented in a homogeneous way, without specific batches and identifiable units;
- The standardisation of the production process: the units must be interchangeable;
- The free market;
- Gravitation of the offer towards the market guaranteed by the absence of constraints from governments or private organisations;
- The unpredictability of supply and demand;
- Storage possibilities as a condition for forward or future contracts.

Societal cost *(according to K. W. Kapp, 1963).*

All direct and indirect, present and future losses and expenditure that are borne by third parties or the community as a whole due to the social, health and environmental impacts of production and consumption methods.

Impact (economic, social, environmental)

All the lasting or significant changes...

...positive and negative, direct and indirect, planned and unplanned, intentional and unintentional...

...on ecosystems and the environment, individuals and communities and the business community...

...locally, regionally and globally...

...which are caused by one or more actions, activities, policies, products or services...

...beyond what would have happened all things being equal.

Basket of essential goods

The necessary resources for an individual to obtain healthy and adequate food, ensure participation in social activities and access living conditions (education, health, housing, clothing, transport and savings)

corresponding to their fundamental rights and which are usually encouraged or approved in the societies to which they belong.

(according to Peter Townsend, 1979)

Essential services *(according to the Charter of Essential Services, 2007)*

Essential services are the vital or basic services indispensable for a dignified and decent lifestyle. They include, notably:

- food necessary for health and the practice of human activities;
- education;
- protection of public health;
- decent housing;
- collective drinking water and drainage services;
- collective cleanliness and waste disposal services;
- energy distribution services;
- daily public transport services;
- information and telecommunication services

Coffee industry technologies

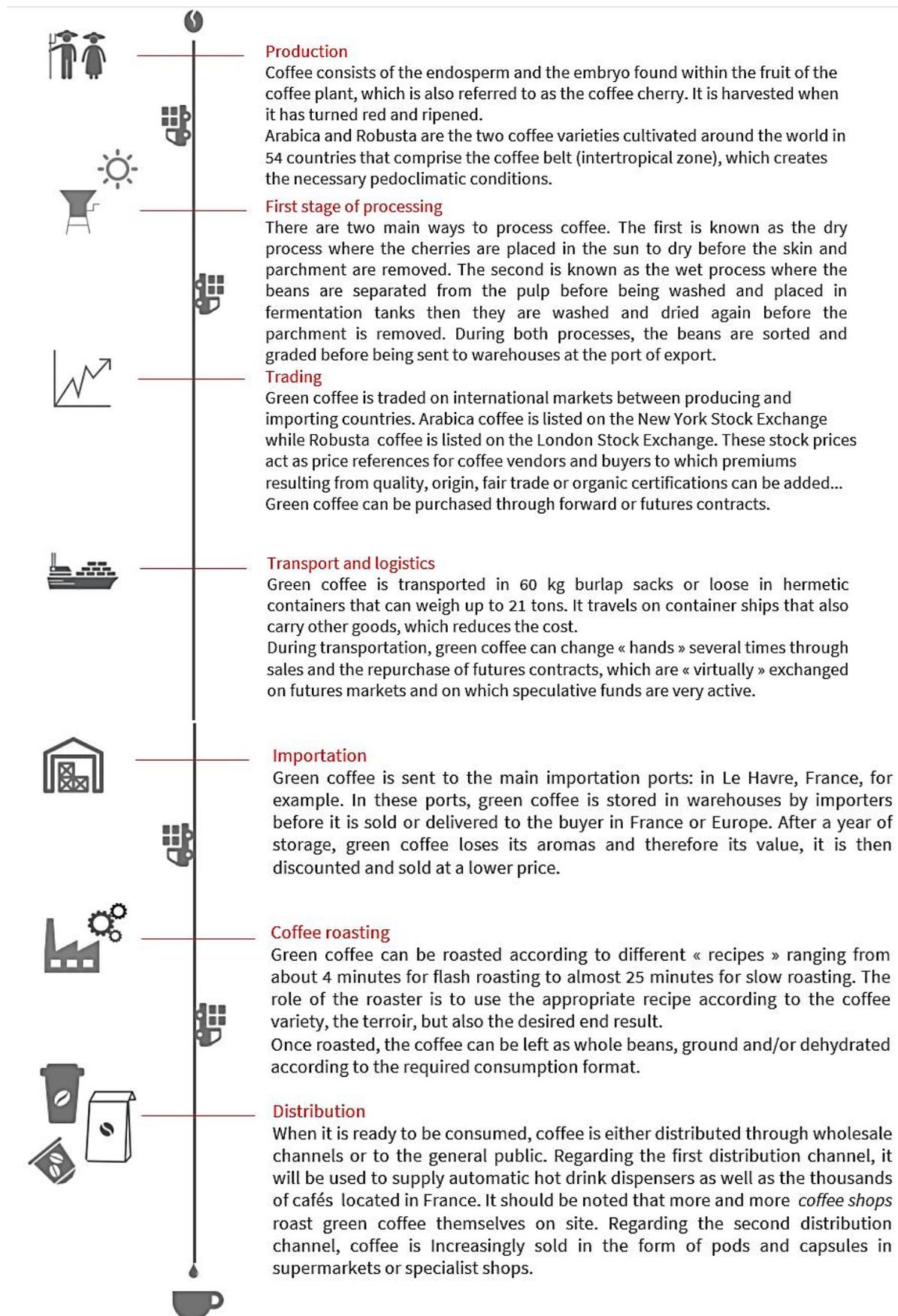


Figure 1. Coffee industry technologies. Source: BASIC

1. The global value chain for coffee and its impacts

1.1. Consumption methods, distribution channels and brands/roasters

1.1.1. Worldwide consumption is globalising and polarising under the influence of a shrinking pool of stakeholders

A market that is polarised between high added value products and standardised mass-produced products

In 2017, global coffee consumption was estimated at 9 million tonnes⁹ and would have generated 200 billion dollars¹⁰. Over the past 50 years, consumption has grown steadily with an estimated average annual growth rate of 2% in volume¹¹.

At the global level, most coffee is consumed at home – more than 3/4 of global volumes, but only about half the sales – the rest is consumed outside the home in cafes, specialty chains, hotels, restaurants, at work and so on.¹²

Market studies show a polarisation of consumption in these two spheres since the late 1990s¹³:

- On one hand, a strong growth in sales of more "high-end" coffees – and associated distribution networks – which nevertheless remain largely in the minority in terms of volumes sold,
- On the other hand, sustained consumption of standardised products sold in bulk at low prices, which continue to account for the vast majority of volumes.

Consumers' growing interest in products with a higher added value first developed in the "away from home" circuits in the 1990s. Dedicated coffee sales points (also known as "coffee shops") proliferated, providing differentiated products in an atmosphere offering consumers a new "experience"¹⁴.

The Starbucks chain, which is a pioneer in the sector and still leads the way, offers coffee blends that are renewed on a daily basis as well as numerous single-origin coffees. Their products (packs of ground coffee, Nespresso-compatible capsules and coffee-based cold drinks) are now distributed via supermarkets by Nestlé¹⁵.

These specialised networks are highly developed in the United States, where they generate a turnover of 20 billion Euros (41% growth since 2011)¹⁶ and are growing rapidly in Europe where the 13,300 established coffee shops represented sales of 6 billion Euros in 2017, a 50% increase since 2010¹⁷.

At the same time, 8% of traditional coffees have disappeared, but the 300,000 or so existing retail outlets continue to generate 45 billion Euros of annual coffee sales in 2017¹⁸.

⁹ ICO, Le commerce mondial du Café 1960-2013, February 2014

¹⁰ Hivos 2018

¹¹ ICO, Le commerce mondial du Café 1960-2013, February 2014

¹² WIPO, Intangible Capital in Global Value Chains, 2017

¹³ Daviron B. and Ponte S., *The Coffee Paradox*, 2007

¹⁴ WIPO, Intangible Capital in Global Value Chains, 2017

¹⁵ Bulletin of the Centre for Research and Interdisciplinary Study, Starbucks Marketing Analysis, 2015

LSA. "Starbucks se lance à l'assaut de la GMS en France." 24 May 2012, <https://www.lsa-conso.fr/starbucks-se-lance-a-l-assaut-de-la-gms-en-france.130505>. Accessed 14 June 2018. Starbucks claims 70% of the market for cold coffee sold in supermarkets ("Starbucks met la pression sur le café froid," Les Échos, 3 May 2017, accessed online on 14 June 2018 <https://business.lesechos.fr/directions-marketing/marketing/innovation-produit/0212034977719-starbucks-met-la-pression-sur-le-cafe-froid-309266.php>)

¹⁶ <http://www.mintel.com/press-centre/food-and-drink/us-coffee-house-sales-expected-to-reach-28-7-billion-by-2021> Accessed 5 July 2018.

¹⁷ <http://www.scanews.coffee/2017/11/28/2017-western-european-coffee-market-size-report/> Accessed 5 July 2018.

¹⁸ <http://www.scanews.coffee/2017/11/28/2017-western-european-coffee-market-size-report/> Accessed 5 July 2018.

Regarding the in-home consumption segment, the innovation that has undoubtedly changed the way in which coffee is consumed over the past 30 years is Nestlé's invention of the Nespresso capsule coupled with special machines for home consumption (see panel on Nestlé)¹⁹.

Combined with offering high quality origin coffees, this new product attracted the attention of an increasing number of consumers for the diversity of its coffee flavours and aromas – the complete opposite of the standardised coffee previously offered in supermarkets and traditional places of consumption.

An example of "disruptive innovation", the launch of Nespresso capsules and machines was accompanied by major investments in communication, which led to the emergence of a real coffee culture encouraging consumers to embrace higher value-added products²⁰.

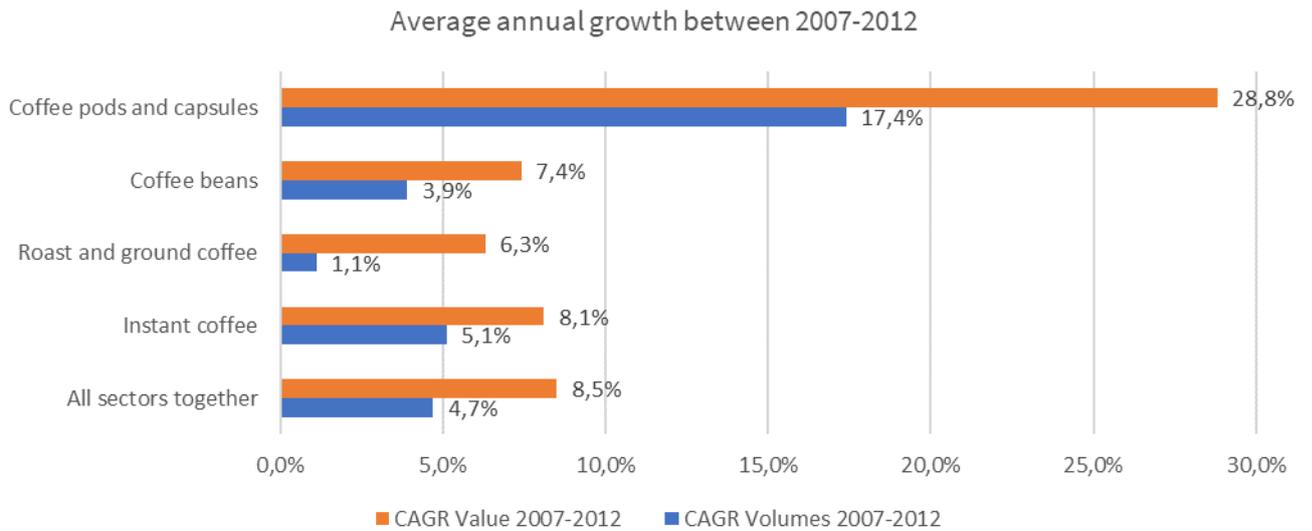


Figure 2. Average annual growth in volumes and values between 2007 and 2012, by coffee segments at the global level.
Source: BASIC, according to Euromonitor data.

It gave rise to another very dynamic segment, that of coffee pods and capsules (also called "single-serve coffee"), which led to Nestlé's competitors rushing to find growth opportunities in mature markets. Even if coffee in pods and capsules only represented 11% of global coffee sales between 2007 and 2012, its growth rates of +28.8% in value and +17.4% in volume during the same period significantly exceeded those of other segments and its turnover has tripled since 2012²¹.

¹⁹ See Xerfi 2017 The enthusiasm of consumers for this new format can be explained mainly by the fact that the capsules or pods are more practical and less demanding in terms of preparation

²⁰ Xerfi 2017

²¹ See Copil graph from June

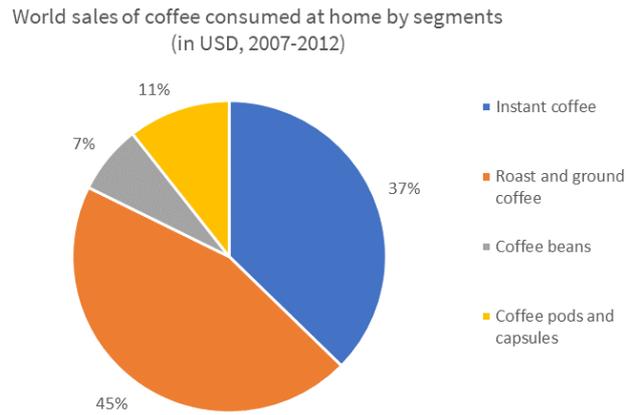


Figure 3. Breakdown of global coffee sales by segment across all distribution networks. Source: BASIC, according to Euromonitor data

Nevertheless, at the global level, ground roasted and instant coffee²² continue to account for the vast majority of coffee sales for in-home consumption (over 80%).

Coffee-producing countries and emerging economies that drive global demand

An analysis of consumption by geographical area reveals these trends to varying degrees.

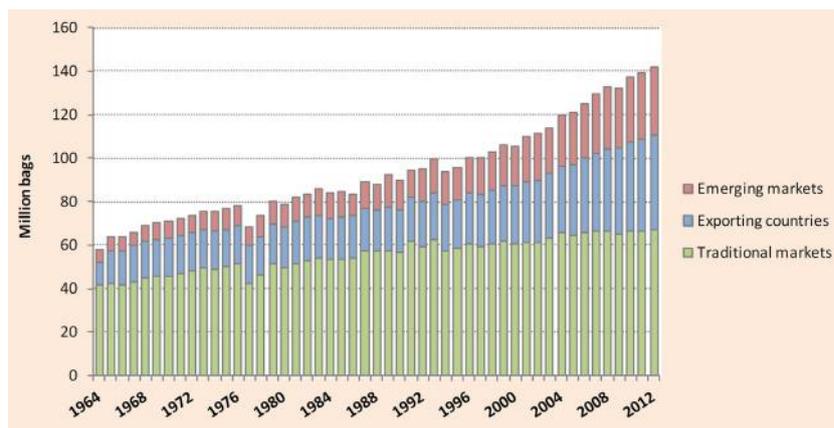


Figure 4. Changes in global coffee consumption between 1964 and 2012 in millions of bags and distribution of coffee consumption among emerging economies, coffee producing countries and traditional coffee consuming countries. Source: ICO 2014

In Western countries that traditionally consume the most coffee, consumption has increased very slowly in volume (see graph above) and has even tended to stagnate in recent years, with an average growth of 0.7% between 1990 and 2012²³. However, these countries continue to account for nearly half of the world's annual coffee consumption²⁴. Among them, the United States represents the largest market with around 16% of global consumption, followed by Germany (6%), Japan (4.5%), France (4%) and Italy (4%)²⁵.

²² The instant coffee segment – the ultimate standardized product – appeared more vibrant than the ground coffee segment, with a 5% increase in volume and an 8% increase in value between 2007 and 2012. This is driven by consumption in emerging economies with demand for this type of practical product, sold in bulk and at low prices. (see graphic below on "Average annual growth in volume and value between 2007 and 2012 by coffee segment worldwide").

²³ Ibid.

²⁴ Ibid.

²⁵ Ibid.

In contrast, coffee sales revenues are growing faster than volumes in so-called "mature" markets. In effect, roasters have successfully managed to upgrade their coffee offering in order to stimulate sales, but also to innovative, notably regarding coffee formats - particularly pods - to create more value²⁶.

Similarly, the traditional coffee-producing countries and emerging economies have seen a rapid rise in their coffee consumption, in terms of both volume and value.

Thus, internal consumption in the coffee-producing countries increased by 65% between 2000 and 2012, rising from 26.4 million to 43.5 million bags over this period²⁷.

The middle classes in emerging economies have adopted "western" patterns of consumption and have developed a taste for coffee. Internal consumption in these countries has risen by 855% over the last 50 years, reaching 27.9 million bags in 2012.

The growing demand from producing countries and emerging economies is mainly for standardized coffees mass produced by major brands, particularly instant coffee. For example, demand in China for instant coffee increased by 43% since 2008, reaching a total of 40,000 tonnes in 2011²⁸.

This trend partly explains the increased amount of Robusta in the coffee volumes traded: since this bean is associated with cheaper, lower quality coffees, consumers with less purchasing power prefer it to Arabica²⁹. While Robusta made up 30% of coffee sales 20 years ago, this proportion now stands at 40%³⁰ and, according to current trends, will reach 50% within a few years³¹ (see part 1.3 Production).

At the same time, the consumption of "high-end" coffees is also booming in emerging markets and producing countries. For example, China is Starbucks's second largest market and the fastest growing in the world (8% annual growth compared to 3% in the United States), and the company plans to double its number of branches there by 2021³². Meanwhile, in a short time Brazil has reached fourth place in the worldwide capsule and pod market, with 800 million dollars of sales (behind the United States with 4.9 billion, France with 2.2 billion and Germany with 900 million)³³.

Increasingly concentrated coffee roasters who channel and steer this demand

The aforementioned trends are driven by a few major players in the coffee industry (roasters or brands) in whose hands the majority of sales are concentrated: in 2015, the top four roasters handled around 40% of turnover for home consumption. The vast majority of their products are marketed by distributors who are themselves very concentrated (for example, in Europe, the 10 biggest players represent around 50% of grocery product sales in the EU³⁴).

Consumption outside the home seems to be mainly characterized by the domination of Starbucks, which alone holds 21% of the estimated global market³⁵.

²⁶ Xerfi 2017 218:10

²⁷ ICO 2014, op. cit.

²⁸ Duke 2014

²⁹ Interview with a former coffee merchant.

³⁰ Interview with a former coffee merchant.

³¹ Interview with a former coffee merchant.

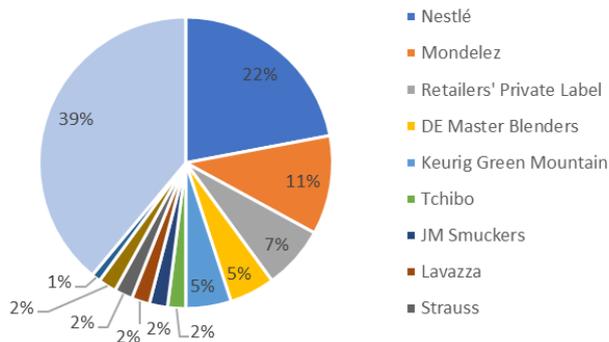
³² <https://www.cnbc.com/2017/12/05/starbucks-is-opening-a-store-in-china-every-15-hours.html> Accessed 26 August 2018

³³ ICO, Le commerce mondial du Café 1960-2013, February 2014

³⁴ Oxfam, Ripe for change: Ending human suffering in supermarket supply chains, 2018

³⁵ <https://blog.euromonitor.com/2016/04/coffee-shops-around-the-world-three-key-insights-for-2016.html> Accessed 17 July 2018

Market shares of the principal coffee stakeholders in 2015 for at home consumption (world)



Market shares of the principal coffee stakeholders in 2015 for consumption outside the home (world)

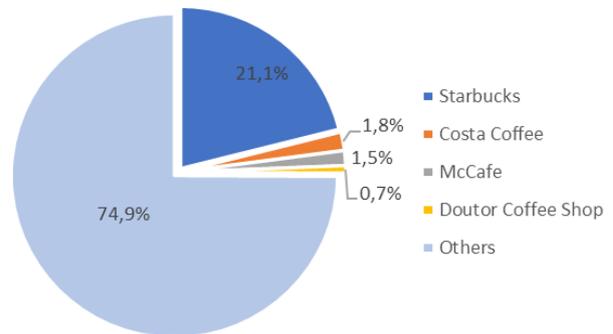


Figure 5. Market shares of the main players in the global coffee industry in 2015. Source: BASIC, based on Euromonitor data

This concentration is the result of a recently accelerating consolidation process: the 2017 merger of Mondelez's and DE Master Blenders's "coffee" businesses led to the creation of the worldwide No. 2 "JDE", whose parent company JAB has also bought up several American coffee chains, as well as the American Keurig Green Mountain. Market leader Nestlé responded by taking over the American Blue Bottle coffee chain, followed in March 2018 by the Starbucks brand for mass-market retail products³⁶.

Furthermore, the sector giants are facing increasing competition from *retailers' private label* brands, which now make up 7% of sales.

It should be noted that the concentration of the industry at the global level hides disparities in the different market segments:

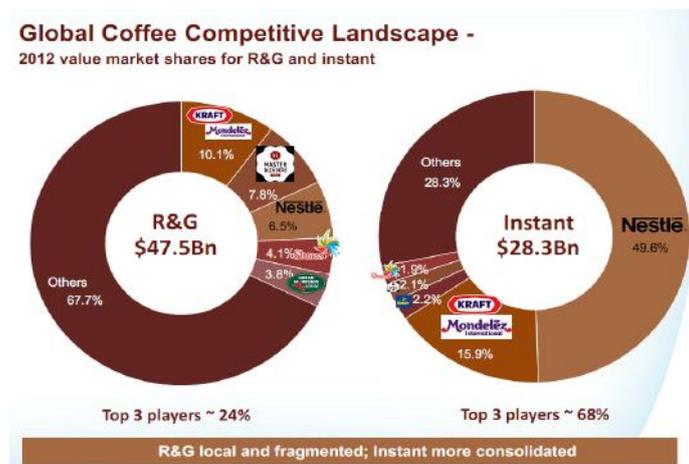


Figure 6. Market shares of the top coffee sector players in 2012: left, roasted and ground coffee segment; right, instant coffee segment.

The leader in the ground roasted coffee segment is JDE, mainly on account of its Jacobs and L'Or brands³⁷. Nestlé generates almost half of global sales in the instant coffee market, mainly through its Nescafé brand. The development of higher added value products and the concentration of the sector have led to a sharp increase in turnover and profits for industry leaders.

³⁶ www.lemonde.fr/economie/article/2018/05/07/nestle-va-exploiter-la-marque-starbucks-en-supermarche_5295391_3234.html
 Accessed 15 June 2017.

³⁷ Schroeder S., *When Ethics Are Good For Business. A Case Study on the Strategic Importance of Direct Trade for Three Specialty Coffee Roasters in Copenhagen*, Copenhagen Business School, 2015.

This trend reflects roasters' ability to create and capture the downstream value of the chain, which is based primarily on the "intangible" aspects of the marketed product: innovation, brand image and the consumer environment in general, which transcends products' taste characteristics. They have done this by strongly increasing marketing, their main driver and advantage over other upstream players. For example, marketing accounts for 4% of roasters' turnover, with a similar cost with regard to the final price of a bag of coffee to that of traders (around 0.33 €/kg).³⁸

1.1.2. France, a mature market with strong added value where multinationals are firmly established

A market dominated by sales of coffee in capsules and pods in major food retailers

France is a leading player on the international stage for coffee imports and consumption. The French consume an average of 5.43 kg per year³⁹, far behind the Scandinavian countries, where consumption is 12 kg per person per year. A total of 345,200 tonnes of coffee was consumed in France in 2017, in a 5.8 billion euro market⁴⁰.

The last few decades have seen French coffee drinkers gradually moving away from their traditional choice of Robusta from the former African colonies in⁴¹favour of Arabica⁴².

Consumer profile of French coffee drinkers

French coffee consumption has stabilized over the last 10 years. Over 80% of French consumers drink on average three to four coffees a day, mainly in the morning (in 70% of cases), and at lunchtime (52% of cases). Decaffeinated coffee is a special case, and is mainly drunk after work and in the evening.⁴³

Consumption is motivated by enjoyment, habit and the energy boost provided by caffeine. Having coffee is both an individual and a social activity. Consumption varies with age, reaching a peak between 30 and 55 years, driven mainly by habit.⁴⁴

Around 68% of coffee consumption takes place at home, and 21% in the workplace.⁴⁵

More than half of households have a filter coffeemaker for daily use, but may also own a capsule and/or pod machine, which are valued as being modern and practical and for which a wide range of are coffees available.⁴⁶

Like other Western European and North American countries, the French consumer market is a "mature" market, and growth is linked primarily to increases in prices rather than volumes⁴⁷.

³⁸ ICO 2013

³⁹ Syndicat FR Café 2015

⁴⁰ Euromonitor 2018

⁴¹ Interview with a former coffee merchant; interview with a fair trade actor.

⁴² Interview with a former coffee merchant; Xerfi 2017

⁴³ "Études tendances et usages des consommateurs français," 2016

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Ibid.

⁴⁷ Xerfi 2017

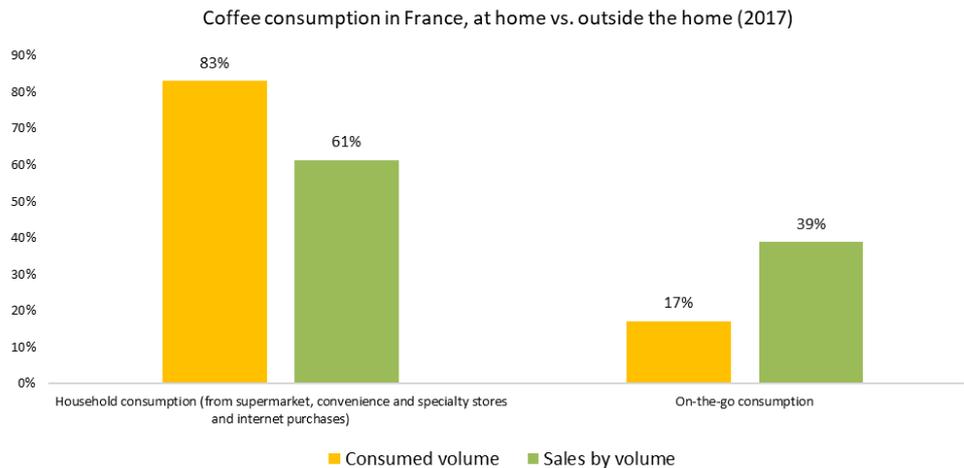


Figure 7. Comparison of sales of coffee consumed at home and outside the home in 2017. Source: BASIC, based on 2018 Euromonitor data

In France, most coffee is consumed at home. Although the out-of-home market accounts for a small share of volume, it makes up close to 40% of sales in terms of value. Of this total, coffee consumed daily at the office represents around 70% of out-of-home volumes⁴⁸.

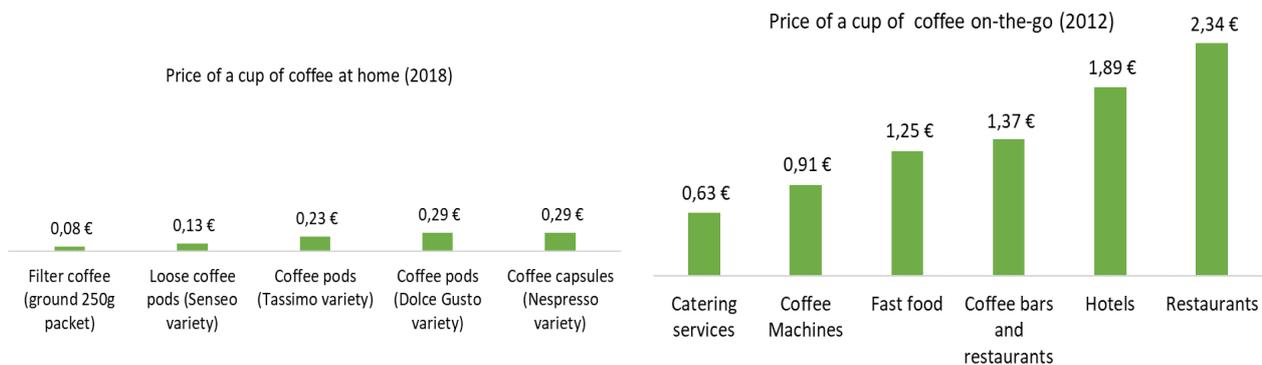
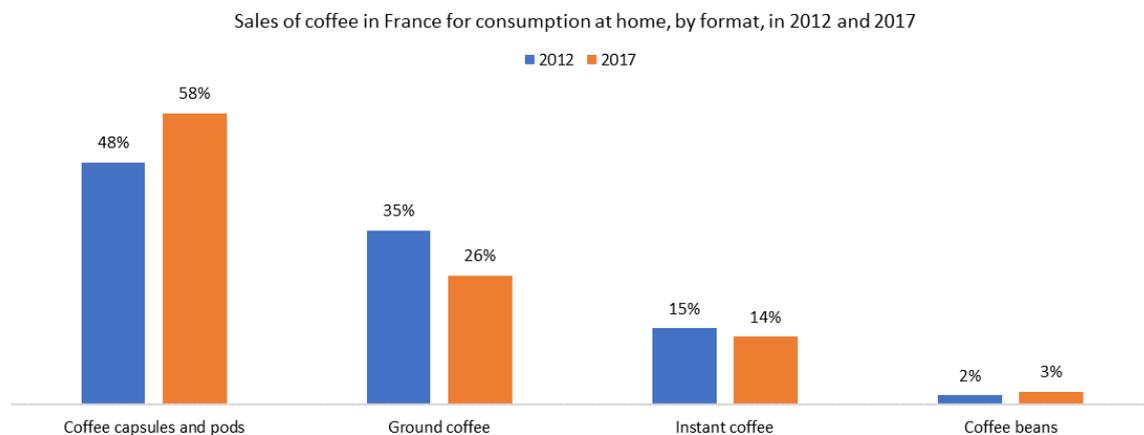


Figure 8. Comparison of sales of coffee consumed at home and outside the home in 2017. Source: BASIC, based on 2018 Euromonitor data

The prices paid by consumers vary greatly from one distribution channel to another. They also depend on formats, ranging from around €0.08 per cup of filter coffee made from a standard 250 g bag of ground coffee to €0.29 for a cup of coffee made from a Nespresso or Nespresso-compatible capsule, and sometimes exceed €2 per cup in traditional catering outlets.



⁴⁸ https://www.lesechos.fr/06/02/2018/lesechos.fr/0301259518097_nespresso-vise-la-pole-position-sur-le-marche-des-entreprises.htm
 Accessed 7 August 2018.

Figure 9. Evolution of domestic coffee consumption sales in France by format between 2012 and 2017. Source: BASIC, based on Euromonitor data

In contrast to global figures, coffee sales in France are dominated by capsules and pods: this market segment account for 58% of turnover for domestic coffee consumption in France in 2017, compared to just 48% five years earlier⁴⁹. Of this total, mass retail sales amounted to 1.2 billion euros, of which 340 million euros was for Nespresso-compatible capsules⁵⁰. Nespresso's online and in-store sales were estimated at 800 million euros in 2017⁵¹, making France the world leader in per capital consumption of single-portion coffee, ahead of Germany and the United States⁵².

The French appetite for pods and capsules has not gone unnoticed by the industry's producers and brands. The vast majority of them have launched their own single-portion coffee products, sometimes with a proprietary machine⁵³. Certain players believe that this trend has reached a point where the share held by other coffee formats has been (excessively) reduced, and that a backlash is to be expected: consumers and distributors will have to "do some sorting out" as "not everyone can survive"⁵⁴.

For some years, the appeal of capsules has dominated the out-of-home coffee market, particularly in traditional and mass catering, where it replaces the traditional offering with a wider, personalized range of coffees. There is also a growing trend for office-based coffee consumption, for which industry leaders have developed specific machines. Nespresso France is thought to have made 15% of its 2017 turnover in sales of machines for use in bars and businesses⁵⁵.

Conversely, sales of roasted and ground coffee fell by 5% and 3% in volume and value, respectively, in 2017 alone⁵⁶. This market segment accounted for only 26% of coffee consumed at home in 2017, compared to 35% five years before, a decline which is reflected in the drop in number of filter coffeemakers in French households.

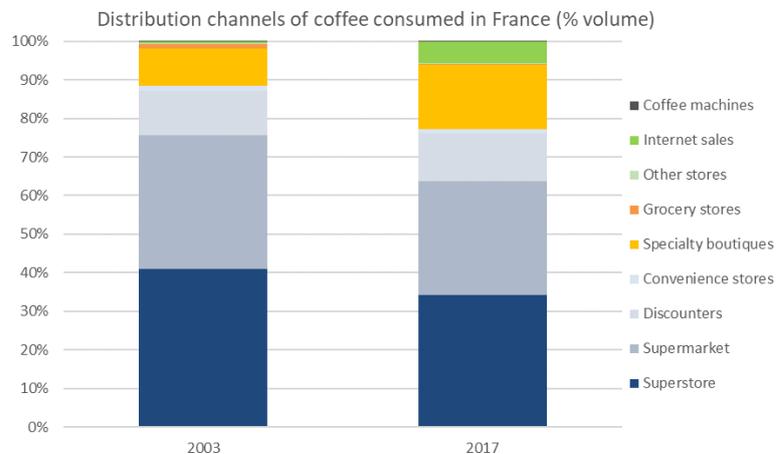


Figure 10. Trend in distribution channels for coffee consumed at home. Source: BASIC, based on 2018 Euromonitor data

⁴⁹ Euromonitor, 2018

⁵⁰ Xerfi 2017

⁵¹ Xerfi 2017

⁵² LSA, "L'enjeu clé du café du matin", September 28, 2016, consulted online on June 18, 2018 <https://www.lsa-conso.fr/l-enjeu-cle-du-cafe-du-matin,245478>

⁵³ Single-serve coffee product offerings also currently overlap with the tea market, including tea capsules and pods as well as dedicated machines (LSA, "Le thé gagne en modernité." 3 February 2016. <https://www.lsa-conso.fr/le-the-gagne-en-modernite,230712>. Accessed 15 June 2018.)

⁵⁴ Interview with a representative from a fair trade coffee brand

⁵⁵ https://www.lesechos.fr/06/02/2018/lesechos.fr/0301259518097_nespresso-vise-la-pole-position-sur-le-marche-des-entreprises.htm Accessed 7 August 2018.

⁵⁶ Xerfi 2017

This trend has also had important repercussions on distribution channels for coffee consumed at home, since major food retailers now account for only 76% of volumes bought in 2017 (versus 88% in 2003), whereas specialty boutiques had almost doubled their share in 14 years, and internet sales had increased twenty-fold (likely linked to the growth of Nespresso).

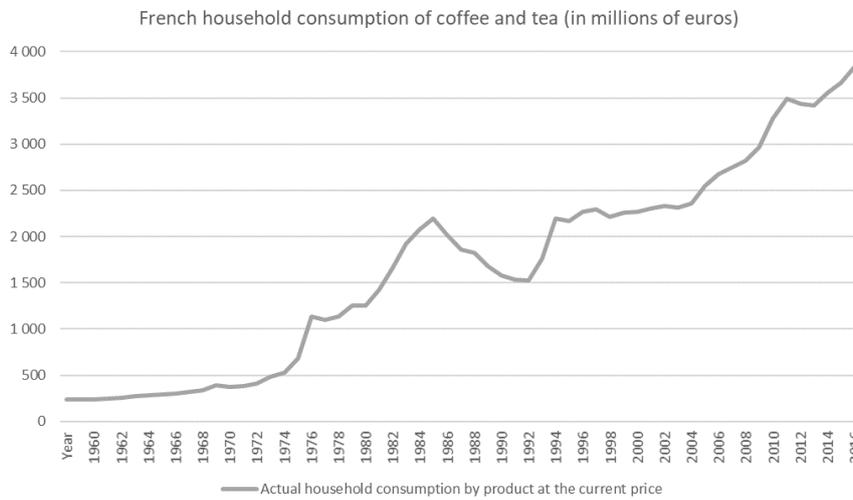


Figure 11. Tea and coffee consumption in French households (in millions of euros), with tea making up only 10% of this total. Source: BASIC, based on INSEE data

These trends were reflected in very strong growth in French spending on coffee, which has risen sharply by 1.5 billion euros since 2003 (whereas it fell in the 1980s and stagnated in the 1990s). According to Euromonitor, coffee sales increased by some 1.2 billion euros over the period, i.e. by 54% in 15 years, a rise not seen since the late 1970s (owing mainly to price increases rather than volumes consumed).

A stronger oligopoly, dominated by subsidiaries of foreign groups

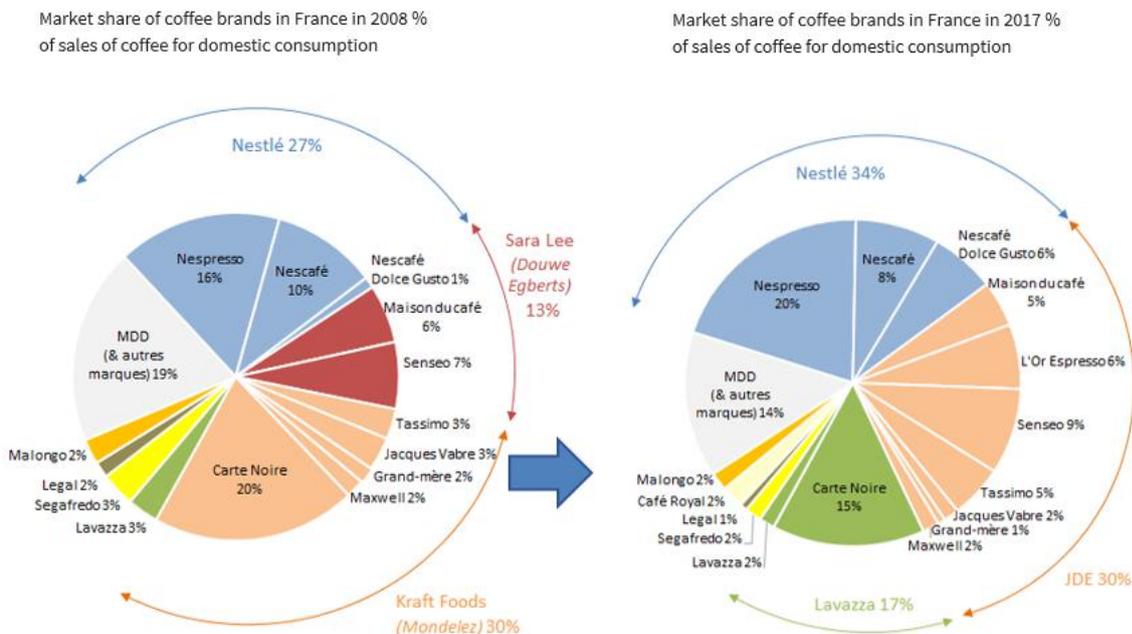


Figure 12. Market shares of key coffee industry players in 2017 (in major food retailers). Source: BASIC, based on 2018 Euromonitor data

Like the international market, the French coffee sector is dominated by a few big multinationals, and the trend has been towards greater concentration over the last 10 years.

- In 2008, 70% of sales of coffee for domestic consumption⁵⁷ were concentrated in three multinationals: Kraft Foods (incorporated into the Mondelez group at the end of 2012), followed by Nestlé and Sara Lee (renamed Douwe Egberts in 2013)⁵⁸. Single-portion coffee accounted for 27% of sales (mainly Nespresso, Senseo and Tassimo sales).
- In 2017, 80% of sales were concentrated in the three major multinationals: Nestlé moved into first place (with 34% of market share) ahead of JDE (a company created from the merger of Mondelez and Douwe Egberts coffee businesses) and Lavazza (moving into third place following the acquisition of Carte Noire from JDE⁵⁹). Furthermore, single-portion coffee almost doubled its share, representing 58% of total sales, comprising Nespresso (20%), Dolce Gusto (6%), Senseo (9%), L'Or Espresso (6%), Tassimo (5%) and Carte Noire capsules and soft pods (around 10%)⁶⁰. Another striking factor is the apparent decline in the share of private label products since 2008.

Private label brands also have a very strong presence, with market shares above the global average (see previous section). They make up around 20% of mass retail coffee sales in terms of value, and 30% of volumes of coffee sold in supermarkets⁶¹.

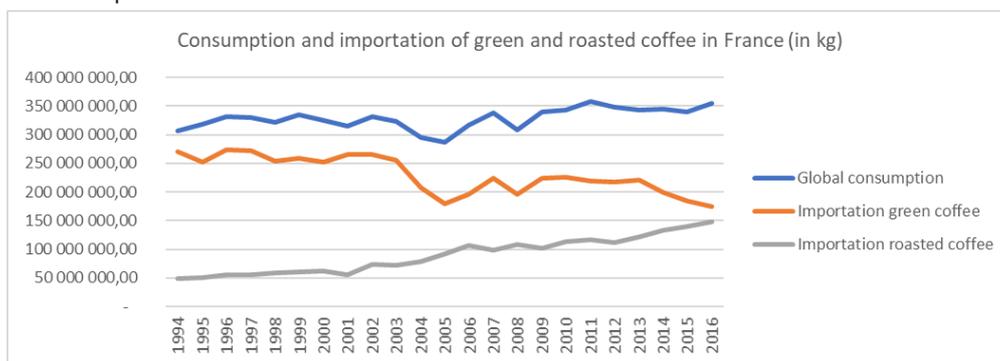


Figure 13. Comparative trends in total coffee consumption in France for imports of green coffee and roasted coffee (in kg, from 1994 to 2016). Source: BASIC, based on ComTrade data.

With regard to supply, France has always needed to import roasted coffee to meet domestic demand. Because exports by French producers are low, resulting in a structural trade deficit (-1.1 billion euros in 2017)⁶². Over the last 15 years, roasted coffee imports have increased by an average of 6.5% annually, reaching the same level as imports of green coffee. The main reason for this trend is the importance of subsidiaries of foreign groups which dominate the French market and manufacture part of their products outside the country.

⁵⁷ Coffee consumed at home is bought from the following channels: supermarkets and hypermarkets, convenience and specialized stores, the Internet

⁵⁸ According to Euromonitor 2018 data

⁵⁹ JDE, the historical owner of Carte Noire, was forced by the French competition authority to sell this brand for abuse of dominant position following the merger of Mondelez and Douwe Egberts coffee operations

⁶⁰ According to Euromonitor 2018 data

⁶¹ Xerfi 2017

⁶² Xerfi 2017 (French manufacturers only generate 6.4% of their revenue internationally)

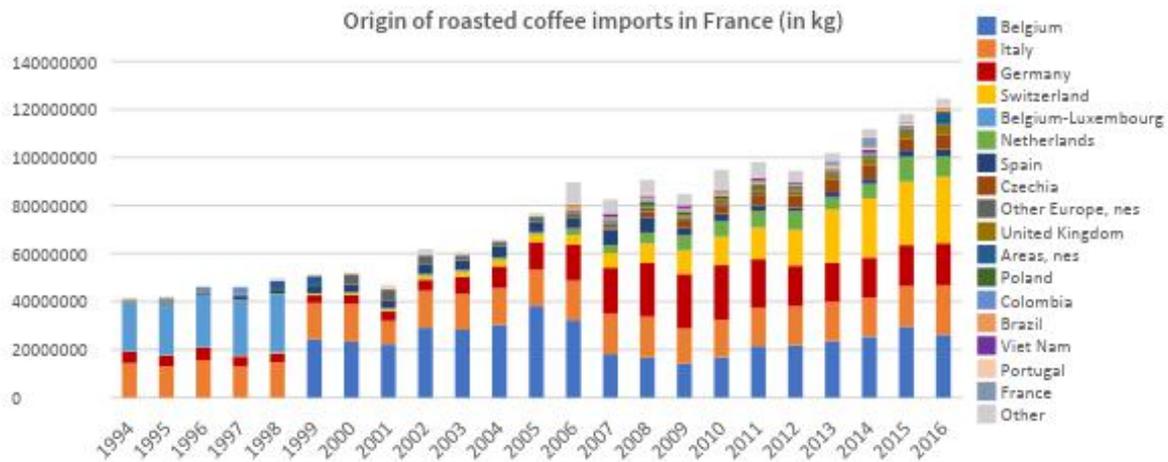


Figure 14. Evolution of countries from which France imports roasted coffee (in kg). Source: BASIC, based on ComTrade data

For example, although Nestlé manufactures its Nescafé brand instant coffee in its three French factories, its Nespresso capsules are manufactured in Switzerland⁶³. This is the main reason that Switzerland has become the main source of roasted coffee imported into France (more than 27,600 tonnes in 2016).

Meanwhile, an industrial structure based on artisan roasters has developed

While imports of roasted coffee are rising and roasting in France is decreasing, the industrial structure is still going strong. France remains Europe's fourth largest coffee and tea producer, after Switzerland, Italy and Germany⁶⁴. Salaried employees in the industry rose by 13% between 2014 and 2016 to 5,102 employees⁶⁵. Industry professionals attribute this growth to the emergence of numerous small artisanal businesses in response to the rising French demand for quality coffee⁶⁶. Artisanal roasting is relatively complex and requires special expertise, which makes it labour-intensive⁶⁷.

In fact, France stands out from other European countries on account of the small scale of its coffee companies, which have on average 11 employees per business, versus 60 in the United Kingdom and 33 in Germany⁶⁸. However, this average hides the industry's growing polarization between a few dominant groups, most of which are foreign, and the large number of artisanal organizations, a situation which experts term "fringe oligopoly".

1.2. The traders

The coffee trade: a historically concentrated sector

The traders are traditional players in the coffee chain⁶⁹. Since the end of the 19th century and the introduction of standards allowing the "commodification" of coffee, European and American traders have dominated the global market (they were the only "macrostructures" in the coffee sector before the development and concentration of the roasters)⁷⁰.

⁶³ Xerfi 2017

⁶⁴ Xerfi 2017

⁶⁵ Xerfi 2017

⁶⁶ Interview with a French coffee roaster (Sati); interview with a French coffee roaster (Malongo).

⁶⁷ Interview with a French coffee manufacturer (Café Michel)

⁶⁸ Xerfi 2017

⁶⁹ Daviron B. and Ponte S., *The Coffee Paradox*, 2007

⁷⁰ *Ibid.*

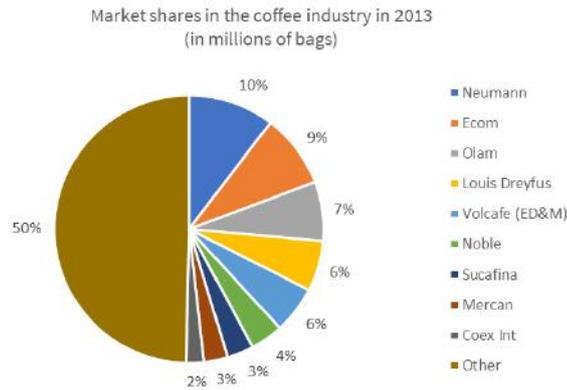


Figure 15. Market shares in the global coffee business in 2013 (in millions of bags)
Source: BASIC, based on World Bank data

Since the end of the International Coffee Agreement (ICA) in 1989, the balance of power, traditionally held by traders, has been undergoing a swing in favour of roasters⁷¹. The roasters now have the strongest influence over the coffee chains and the creation of associated value. Although the traders have lost influence lower down the chain, the imbalance of negotiating power in their favour has kept them in a strong position with regard to producers, and they continue to play an essential role in the chain on behalf of the roasters⁷².

Their strategic position as pivotal mid-chain players enables them to fulfil a vital function in the supply of coffee, owing to their control of the logistics and their large storage capabilities⁷³. Today's coffee trade is still a concentrated sector. In 2013, the five biggest traders handled almost 40% of the world's green coffee⁷⁴: The leading players are involved from green coffee exports from the producing countries to imports in the consumer countries. An example of this is the Neumann Kaffee Gruppe, which operates in Ethiopia, Peru (via its Coinca S.A.C. subsidiaries) and Colombia (via SKN Caribecafé Ltda), as well as in France through its subsidiary Maison Jobin⁷⁵.

Traders are able to buy in batches⁷⁶ or place joint orders to reduce supply costs. This enables them to sell small quantities of quality coffee to roasters at a lower price by means of bulk purchasing⁷⁷ and to create blends of green coffee from different origins according to demand⁷⁸.

⁷¹ Daviron B. and Ponte S., *The Coffee Paradox*, 2007 and WIPO, *Le capital immatériel dans les chaînes de valeur mondiales*, 2017

⁷² Daviron B. and Ponte S., *The Coffee Paradox*, 2007 and WIPO, *Le capital immatériel dans les chaînes de valeur mondiales*, 2017

⁷³ Duke 2014

⁷⁴ World Bank Group, *Overview of the Global Coffee Sector Supply Chain*, 2014

⁷⁵ Neumann Kaffe Gruppe, "Group Companies." <http://www.nkg.net/groupcompanies>. Accessed 28 June 2018.

⁷⁶ A "lot" corresponds to a container, containing 17.5 tonnes of coffee if in bags of 60 kg or 21 tonnes of coffee if in bulk (Interview with a representative from a coffee brand in France).

⁷⁷ Interview with a French former coffee merchant

⁷⁸ WIPO, *Intangible Capital in Global Value Chains*, 2017



Figure 16. On the left, a container full of 60 kg bags of coffee is loaded at the port. On the right, a hermetically sealed container full of coffee in bulk. Sources:

Their warehouses can be used to stagger supplies to their customers' factories as required⁷⁹. This logistical capacity is an asset valued by roasters, who also rely on traders when they buy direct from producers⁸⁰.

Coffee price volatility

Coffee is the world's most widely-traded agricultural commodity⁸¹ and is traded on the commodity exchange⁸².

The primary cause of volatility in the coffee price is variation in market fundamentals: the current crop and stocks of coffee. However, two factors affect this coffee supply⁸³: external factors, such as climate variations, and quasi-cyclical mechanisms, i.e. shortages/overproduction⁸⁴.

Price volatility is also due to speculation, particularly in the futures market⁸⁵. As these do not require physical possession of the merchandise – green coffee, in this case – at the time of sale, these contracts can be bought and sold many times over.

For Daviron and Ponte, the end of stabilising mechanisms that had been set up through the ICA's system of quotas resulted in the increase of speculative activities and the arrival of new actors, resulting in an increase in the price volatility of the coffee market⁸⁶.

Hedge funds, especially pensions, have thus entered the coffee market and are now very active within it, as the increase in volatility of coffee shares shows⁸⁷. These funds retreated from the market following the subprime crisis of 2008 and found that coffee was a commodity on which they could speculate.

Nevertheless, their speculative activities are often disconnected from the fundamentals of the coffee market and react to "triggers" that are independent of actual coffee supply⁸⁸. This explains why, for example, despite the low stock levels and "tight" supply compared to demand, coffee shares are not high and have not been rising in the 2017-18 period⁸⁹.

⁷⁹ Interview with a French former coffee merchant

⁸⁰ Interview with a French former coffee merchant

⁸¹ Xerfi 2017

⁸² Arabica is listed on the New York Stock Exchange while Robusta is listed on the London Stock Exchange.

⁸³ ICO 2014

⁸⁴ The ICO explains therefore that in times of shortages, coffee stock prices rise, leading to coffee planting. Predictably, coffee trees reach maturity and produce their first cherries at the same time, leading to overproduction and a reduction in stock prices. The coffee trees are dug up by some, who plant other crops, until the next shortage.

⁸⁵ The *futures market* is a place to exchange futures contracts—these contracts are commitments to buy or sell a defined quantity of an asset (here, green coffee) at an agreed upon price and date. These contracts are made on rated and standardised products. They allow buyers and sellers to protect themselves from the risk of marked price fluctuations in the market (WIPO, *Intangible Capital in Global Value Chains*, 2017).

⁸⁶ Daviron B. and Ponte S., *The Coffee Paradox*, 2007

Indeed, the ratio of the volume of coffee sold on the futures market and on the physical market was four in the 1980s under ICA regulation and reached 11 in the early 1990s following the suppression of stabilisation tools.

⁸⁷ Interview with a coffee quality selector.

⁸⁸ Daviron B. and Ponte S., *The Coffee Paradox*, 2007

⁸⁹ Interview with a French former coffee merchant

French merchants, mirroring the global sector

Historically, France was an important country for the coffee trade through the town of Le Havre, the main port for importing colonial agricultural foodstuffs. At the end of the 19th century: 46,800 tonnes of coffee arrived every year aboard clipper ships that had crossed the Atlantic, and 359 trading houses operated at the port⁹⁰. At that time, Le Havre had a stock market with a global reach and which rivalled New York until the turning point of the 1930s⁹¹. The town, heavily bombarded during the second world war, never regained its status: the Le Havre futures market closed in 1994 and of the 35 traders on the market in 1970, only two remained⁹². Today, 50% to 80% of French green coffee imports pass through the port of Le Havre, a volume that can vary between 150,000 and 170,000 tonnes per year⁹³.

The majority of these green coffee imports into France are handled by a few companies. Maison Jobin⁹⁴, bought out in 2007 by the world leader, Neumann Kaffee Gruppe⁹⁵, is now the largest importer of green coffee to France. Its main competitors are Volcafe France, the French branch of Volcafe which belongs to the fifth biggest in the world, ED&M, and the independent SME, Belco. Nevertheless, the market share of these different actors in France is not publicly known.

In France, as everywhere else, the green coffee merchant profession has had to adapt to changes, to ensure both the supply to the large roasting factories in thousands of tonnes and to coffee shops and other artisan roasters who generally need just a few sacks⁹⁶.

In order to meet sometimes diametrically opposed demands, the traders have also had to diversify their supply sources: by way of example, the 30,000 tonnes imported by Maison Jobin in 2016 come from about sixty producing countries⁹⁷.

The increased volatility and the sometimes erratic variability of international coffee stocks also forced traders to adapt their profession by amassing large working capitals to guard against sudden variations in price⁹⁸ while continuing to ensure regular volumes, quality and price for their clients⁹⁹.

1.3. Coffee production, which is becoming more polarised in order to respond to demand and is faced with major negative effects

⁹⁰ La Croix, "Le Havre, port d'accueil du café", 14 July 2015, accessed 3 June 2018 (<https://www.la-croix.com/Actualite/France/Le-Havre-port-d-accueil-du-cafe-2015-07-14-1334348>)

⁹¹ La Croix, *op. cit.*

⁹² https://www.lesechos.fr/09/10/2017/lesechos.fr/030632676337_..._jobin-s-adapte-aux-nouvelles-exigences-des-consommateurs-de-cafe.htm Accessed 3 June 2018

⁹³ Low estimates Ouest France / High estimates La Croix.

⁹⁴ Created in 1871 under the name Jobin et Compagnie and established in Le Havre since 1900 (<http://www.jobin.fr/presentation/historique>, accessed 3 June 2018).

⁹⁵ *Ibid.*

⁹⁶ Les Echos, *op. cit.*

⁹⁷ Les Echos, *op. cit.*

⁹⁸ La Croix, *op. cit.*

⁹⁹ Les Echos, *op. cit.*

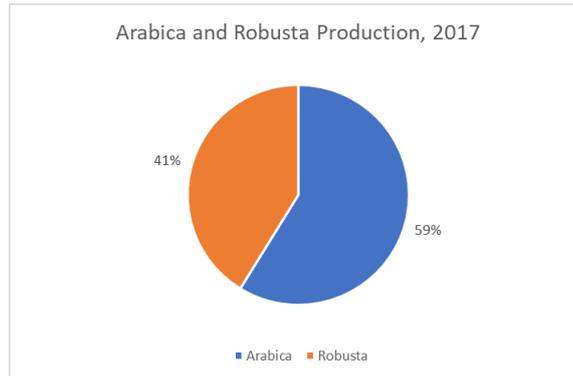


Figure 17: Coffee production by volume and by variety in 2017 (Source: BASIC per USDA, 2018)

In 2017, more than 9 million tonnes of coffee were produced in the world, split between 59% Arabica and 41% Robusta¹⁰⁰.

All production is located within the intertropical zone that has all the climatic conditions necessary for the cultivation of coffee (warm climate without sudden variations in temperature, no frosts, high annual rainfall...).¹⁰¹

These very specific conditions influence the growth of the trees and the ripening of coffee cherries. Climatic variations can quickly destabilise this cycle and reduce the volume of the harvest and the quality of the grains.¹⁰²

The coffee tree is often associated with other tree varieties that provide shade and create agronomic synergies: enriching the soil, maintaining humidity, battling against erosion... These associations also play a role in the family economy because they are food-producing (cultivation of fruit trees) and provide wood for heating.¹⁰³ The production of the two varieties of coffee, Arabica and Robusta, are a source of revenue for 20 to 25 million families worldwide. Almost 70% of coffee volumes are produced on small farms of less than 5 ha: coffee cultivation is still largely dependent on family labour for the majority of farm work.¹⁰⁴

The coffee cherry harvest alone makes up 70% of annual workforce requirements on coffee farms.¹⁰⁵



Figure18: Coffee harvest: "picking" (Source: <http://arbordayblog.org/wp-content/uploads/2017/01/coffee-cherry-picking.jpg>)

¹⁰⁰ USDA, 2018

¹⁰¹ Hivos, Coffee Barometer, 2018

¹⁰² Hivos, Coffee Barometer, 2018

¹⁰³ Hivos, Shade Grown Coffee-Biodiversity & Small Scale Farmers Peru, 2015

¹⁰⁴ Hivos, Coffee Barometer, 2018

¹⁰⁵ Springer, Coffee Rust Crisis in Colombia, 2015

In the large majority of cases, this harvest is done by hand using the "picking" method,¹⁰⁶ which consists of selecting the cherries that have reached maturity (red cherries). This particularly time-consuming technique is essential to conserve the final quality of the coffee.

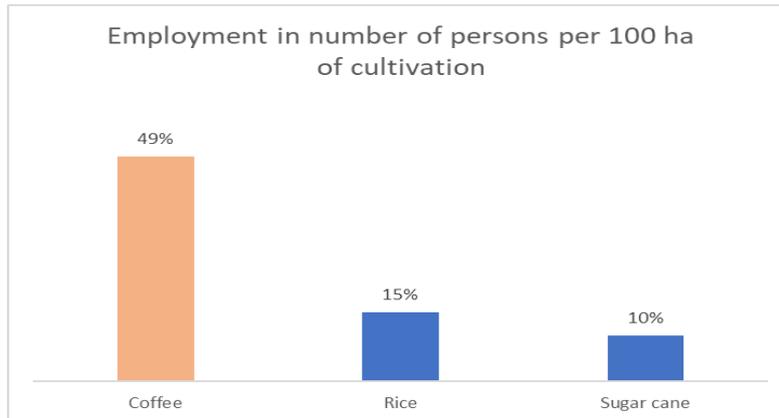


Figure 19: Comparison of the workforce required for three cash crops: coffee, rice and sugar cane
Source: BASIC per D. Allier¹⁰⁷

In comparison with other cash crops like rice and sugar cane, coffee growing is much more labour intensive: about 50 people for 100 ha. of coffee as opposed to 15 for rice and 10 for sugar cane.¹⁰⁸

This strong need for labour has a direct economic impact on producers, as salary is the main cost for coffee farms: the majority of workers employed for the harvest come from outside the farm and flock to coffee producing areas at this time (the rest of the necessary labour is carried out by the family and/or neighbouring coffee producers).

Because coffee cultivation is very labour intensive and the mechanisation of production is difficult, the economies of scale for coffee production are weak in comparison to other agricultural products¹⁰⁹.

Production that is becoming polarised to respond to demand

Coffee production is highly concentrated in about ten of the 54 coffee producing countries.¹¹⁰

¹⁰⁶ The cherries reach maturity at different times, so it's necessary to return to a coffee tree several times to harvest all of the coffee (ten passes may be necessary). Still, the majority of cherries are harvested during a window of a few weeks

¹⁰⁷ D. Allier, *Dynamique du café au Pérou et marché internationaux*, 2011

¹⁰⁸ D. Allier, *Dynamique du café au Pérou et marché internationaux*, 2011

¹⁰⁹ Hivos, *Coffee Barometer*, 2018

¹¹⁰ USDA, 2018

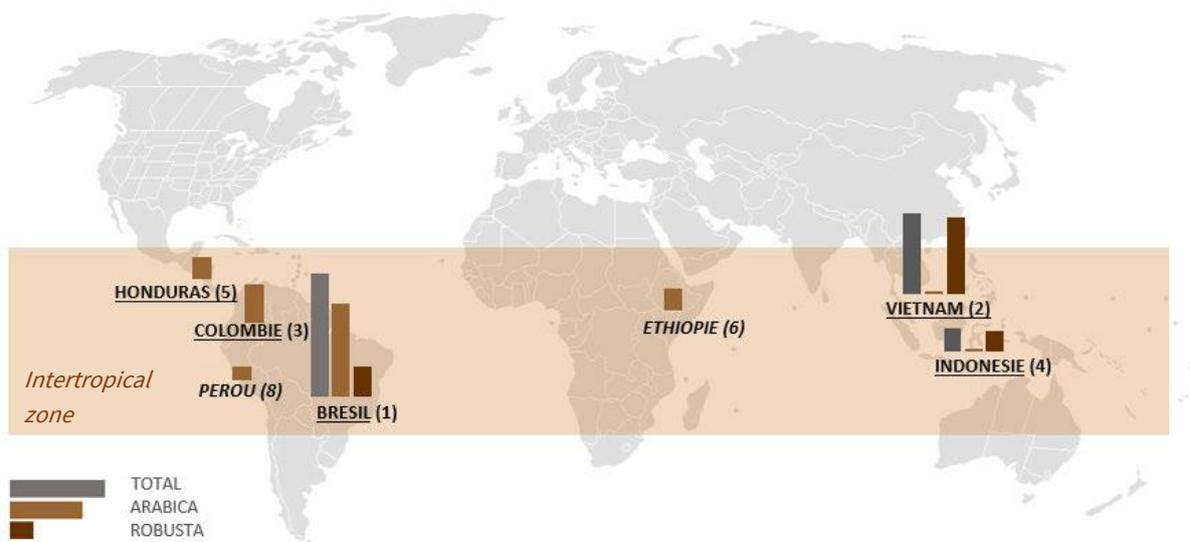


Figure 20: Geographical distribution of coffee production. Source: BASIC per USDA, 2018

In 2017, Brazil alone accounted for almost a third of global coffee production. Along with Vietnam and Colombia, the top 3 coffee-producing countries make up almost two thirds of global production¹¹¹. The principle countries are specialised in the production of one or two varieties of coffee: Vietnam and Indonesia in Robusta; Colombia, Honduras, Peru and Ethiopia in Arabica. Breaking the mould, Brazil has recently diversified (75% Arabica and 25% Robusta).¹¹²

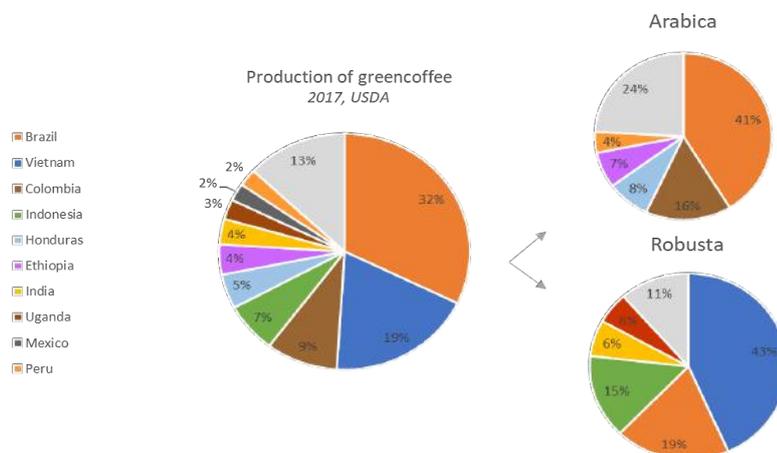


Figure 21: Distribution of total coffee production in 2017 for the 10 main producing countries, and for the 5 main countries by coffee variety. Source: BASIC per USDA

Actually, the concentration of production is more notable by variety: Brazil dominates the production of Arabica with 41% of global production (and is the second largest producer of Robusta) while Vietnam is the uncontested leader for Robusta (43% of global production).¹¹³

¹¹¹ USDA, 2018

¹¹² USDA, 2018

¹¹³ USDA, 2018

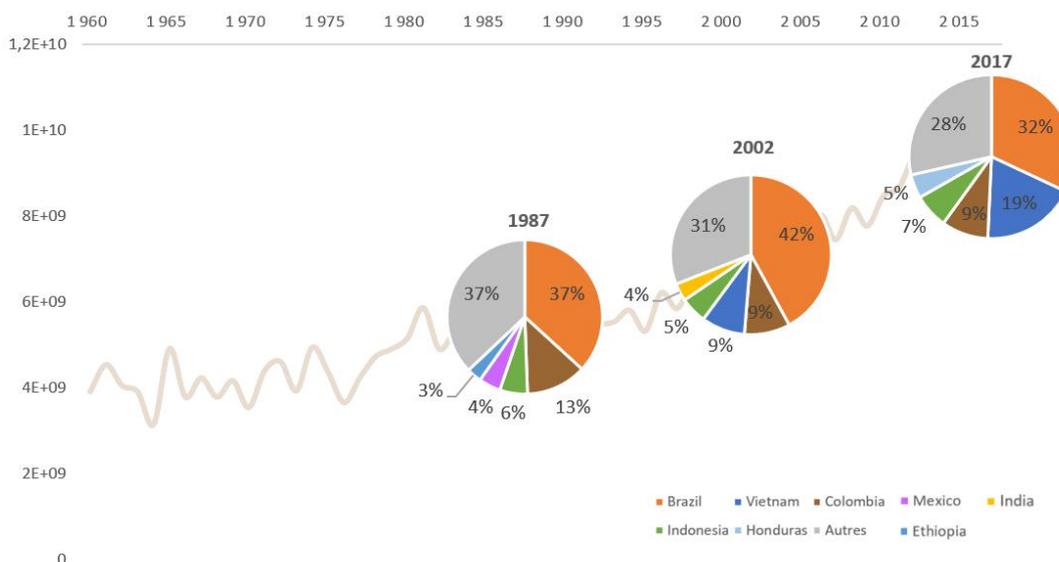


Figure22: Distribution of coffee production among the 5 main producers in 1987, 2002 and 2017 (Source: BASIC per USDA, 2018)

The current situation in coffee production follows considerable changes.

The main upheaval of the last 30 years comes from the increase in Vietnamese production, which altered the global equilibrium: the 28th largest producer worldwide in 1987 - it produced barely 0.5% of global volume at the time - it became the second largest producer in 2017 and produces 19% of global volume. In comparison, Brazil has maintained a dominant position in the market despite its slow erosion, especially thanks to the development of Robusta production since the end of the 1970s.¹¹⁴

Aside from these two world leaders, we have seen the recent emergence of some producing countries like Peru or Honduras that have managed to make their sector more dynamic and are now big players in the global market.¹¹⁵

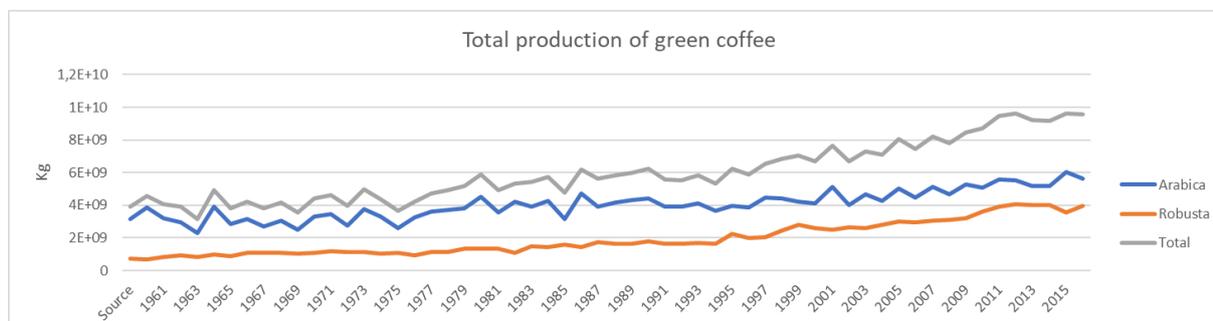


Figure23: Evolution of coffee production, 1961-2017 (Source: BASIC per USDA, 2018)

The increase in volume resulting from this is mainly due to the increase in global Robusta coffee production (+141% between 1995 and 2017) and to the increase in Vietnamese production.

This strong growth of Robusta is explained by 2 main factors¹¹⁶:

- The surge in mass consumption of coffee – particularly instant coffee - in emerging and producing countries (see part 1.1 on consumption trends).
- Technical progress allowed roasters to decrease the bitterness of Robusta and to use more of it in blends (thus reducing their raw material costs, Robusta being much cheaper than Arabica).

¹¹⁴ USDA, 2018

¹¹⁵ USDA, 2018

¹¹⁶ D. Allier, Dynamique du café au Pérou et marché internationaux, 2011

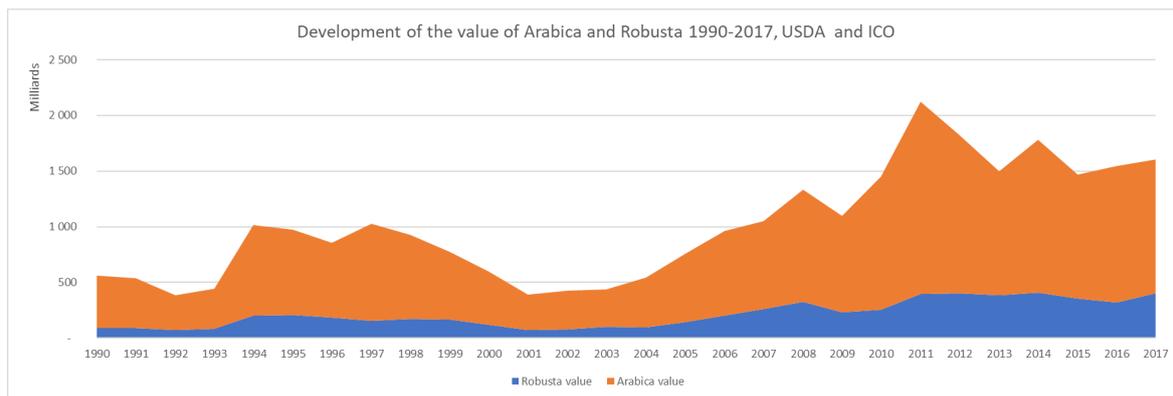


Figure 24: Evolution of coffee volumes, in value: comparison between Arabica and Robusta, 1997-2017 (Source: BASIC per USDA and ICO, 2018)

Although Robusta is greatly increasing in volume, the value created at the level of producing countries has remained based on trade in Arabica for about twenty years (Arabica representing 67% of the value in 2017).¹¹⁷ Therefore, we see higher valorisation of the different Arabica coffee origins and their quality, but Robusta is still generally considered a standard raw material, selected because it is cheaper. These trends reflect the polarised situation in the consumption of different coffee varieties (Arabica coffee, specialty or certified coffee, etc.) and standard coffee (made up of blends with a high proportion of Robusta) which was examined in the first section.

Two dominant strategies: focusing on cost or quality

Faced with this polarisation of the consumer market, we see two major strategies being adopted by producing countries:

- one focused on producing quality coffee (particularly in the case of Peru, Colombia and Ethiopia),
- the other more focused on reducing coffee production costs by unit produced (the case of Vietnam and Brazil).

The two strategies are applied differently, however, depending on the country and its characteristics: species and varieties grown, how institutionalised they are, land ownership, method of treatment, historic background, political choices, promotional activities in international markets, etc.

In particular, countries base their strategies on decisions regarding intensity (in the sense of turning increasingly towards chemical and/or mechanical processes and to improved varieties), whether they are focused on quality or reducing costs.

¹¹⁷ USDA, 2018 and ICO, 2018

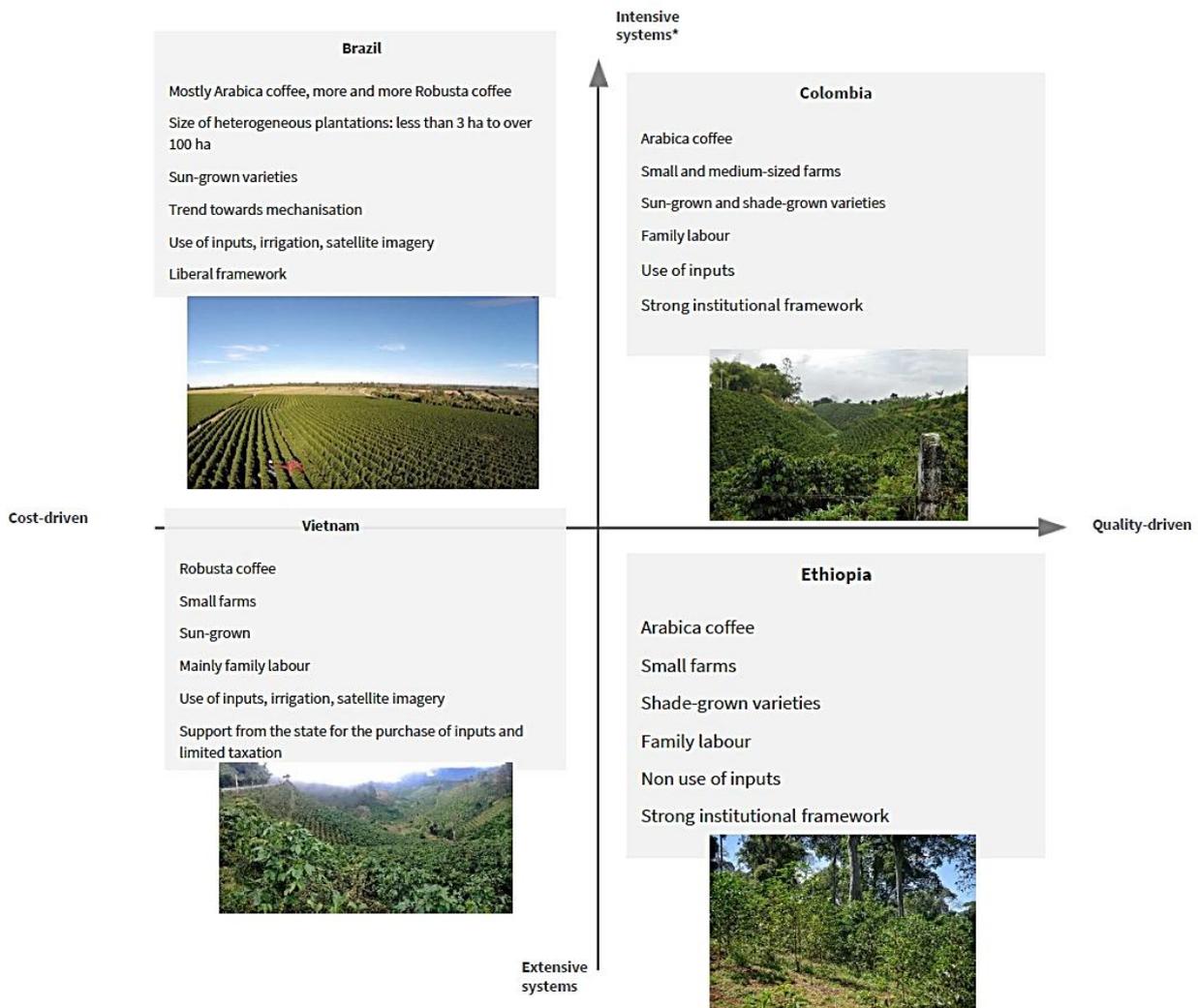


Figure 25: Comparison of 4 producing countries according to producing country strategy and level of intensification (Source: BASIC)

So, Brazil and Vietnam, focused on reducing costs, have implemented very distinctive production systems: in Brazil, using large scale and the latest mechanised production methods; in Vietnam, based on the family workforce and in both cases, using phytosanitary products and chemical fertilisers.¹¹⁸

Likewise, for Colombia and Ethiopia, both focused on producing quality coffee, we observe increased intensification in Colombia (chemical input and a low density of trees providing shade), especially through the intervention of a very powerful institutional actor, the National Federation of Coffee Growers; while Ethiopian production has remained quite extensive (see detailed case study in Part 2).

Brazil and Vietnam: two leaders focused on cost strategies

In 2017, Brazil and Vietnam make up more than a half of global coffee production. While they both use a cost reduction strategy, the comparison of some of the means used to implement this strategy is particularly revealing in illustrating the diversity in coffee production models.

¹¹⁸ D. Allier, Dynamique du café au Pérou et marché internationaux, 2011

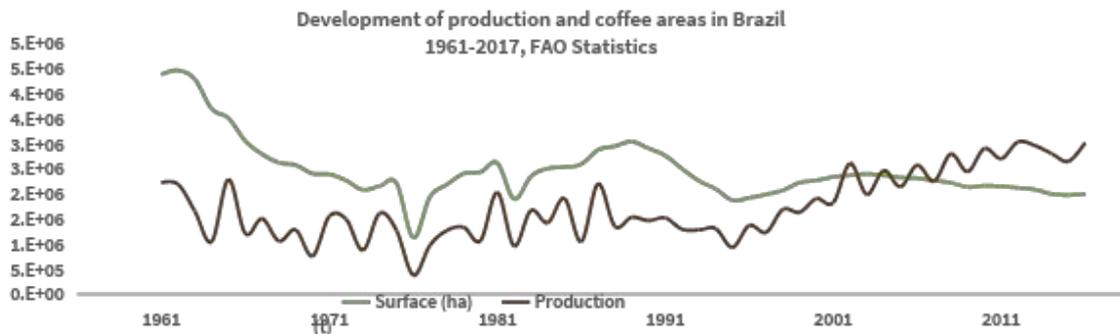


Figure26: Evolution of production and of the coffee surface area of Brazil, 1961-2017 (Source: BASIC per FAOStat)

Brazil benefits from soil and climatic advantages that result in some savings: the mechanisation of work, the increase in farm size, the cultivation of varieties that adapt to the sun, the use of phytosanitary products and synthetic fertiliser. Thus, Brazil is one of the few countries where the increase in production over the last 20 years is more about the increase in labour productivity and yields than an increase in surface area. This trend is reinforced by an increase in production of Robusta, which offers higher yields.

Industrialisation does not only concern producers, because Brazil has developed a sector for the transformation to instant coffee, which has boosted the production of Robusta in the country.

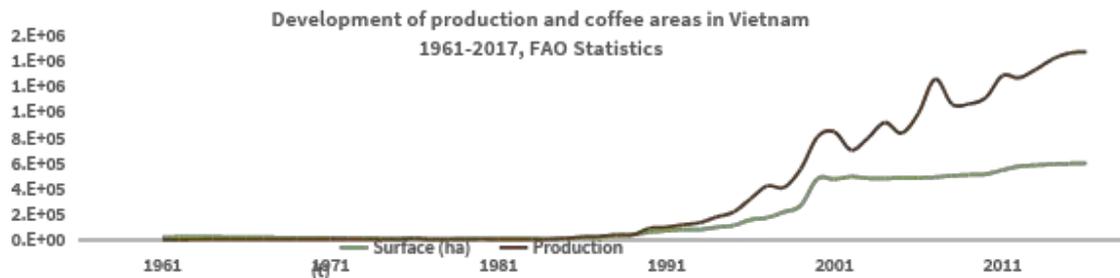


Figure27: Evolution of production and of the coffee surface area of Brazil, 1961-2017 (Source: BASIC per FAOStat)

Vietnam is a more recent actor specialising directly in the production of Robusta coffee, which offers better yields. Since the year 2000, it has managed to greatly increase its production, especially with the government's incentive for massive use of subsidised chemical input. Added to the low cost of land and ridiculously low taxation on coffee exports, the combination of these conditions has made the coffee growing sector particularly attractive for the Vietnamese, which explains its growth.

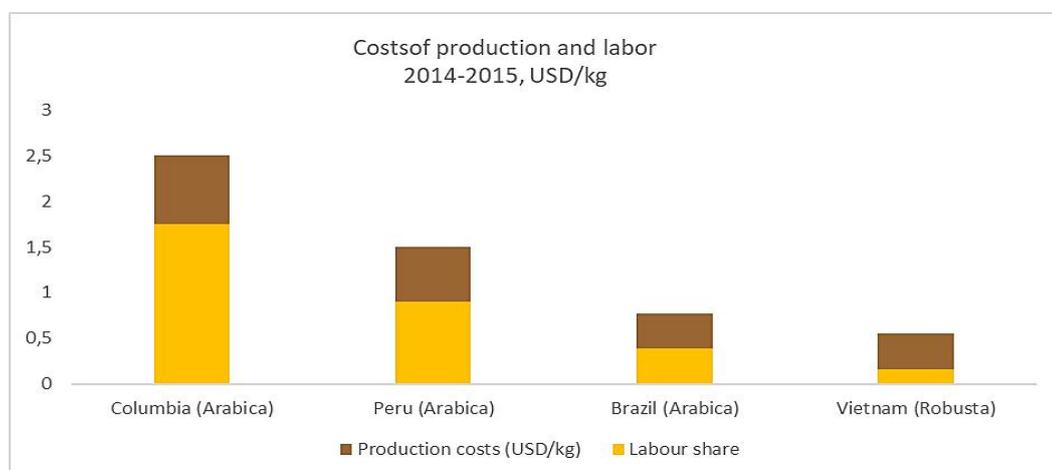


Figure28: production costs and share of labour, 2014-2015, USD/kg (Source: BASIC per GCP data 2017)

The development of these different strategies in producing countries has direct consequences in terms of production costs: focusing on quality, Colombia and Ethiopia have costs that are about 3 times higher than those of Brazil.

The success of cost-reduction strategies in Brazil and Vietnam has allowed them to acquire a dominant position in the supply of the mass standard coffee market.

Other countries, in particular those who don't meet all the conditions to be competitive on cost (because of their mountainous topography, the increase in property costs, weak institutional support and the access to capital and to innovations in other industrial sectors) have chosen a strategy of growth via quality, which is reflected in the export price of their coffee.

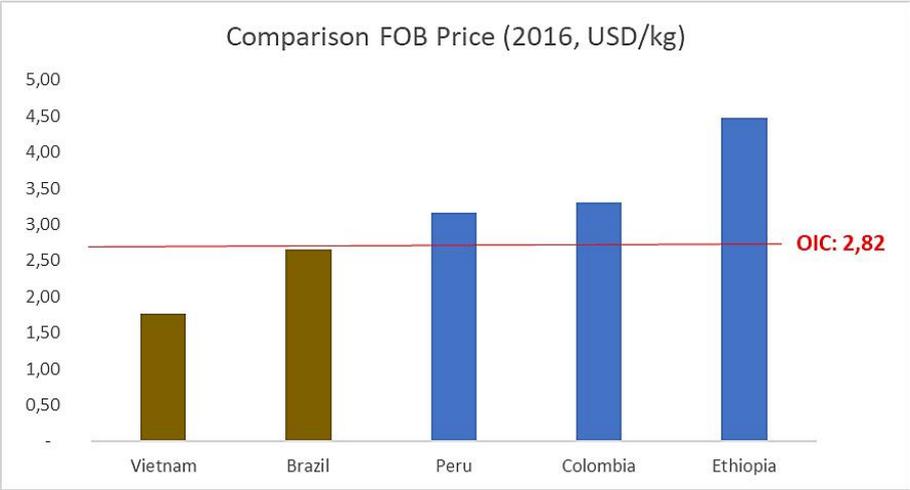


Figure29: Comparison of coffee export price in Vietnam, Brazil, Peru, Colombia and Ethiopia, 2016
 Source: BASIC per USDA and ICO

The result: on global markets, Brazil values its coffee at an FOB price (export price of green coffee) that is 6% lower than the ICO¹¹⁹ (International Coffee Organisation) global reference price, and Vietnamese Robusta is sold at 40% below the ICO price, whereas the countries focusing on quality are valuing it at a higher price: +12% for Peru, +17% for Ethiopia and up to +59% for Colombia.¹²⁰

Apart from these trends, we find within the majority of countries a huge diversity in producers and systems of production that supply very different markets and sectors. Even in Brazil, the standard-bearer of a cost reduction strategy, production ranges from Robusta for bulk instant coffee to very high quality Arabica on small farms that are not very technically advanced to respond to growing niche markets.

However, on a global scale, if certain producers have managed to implement a quality strategy, many others have suffered from low price competition boosted by the low cost models implemented by Brazilian and Vietnamese producers.

¹¹⁹ indicative of coffee's price on the different stock markets

¹²⁰ USDA, 2018 and ICO, 2018

1.4. An ever more unequal global value chain creates significant social and environmental challenges.

1.4.1. Value chains that have grown more unequal since the end of the ICA, and the growth of new forms of consumption (pods and capsules).

The coffee value chain is an emblematic model: upstream, it groups millions of small farmers who have very weak negotiating power in comparison to that of the traders and large coffee roasters downstream (as well as the distributors to a lesser degree).

More than 40% of coffee sales are made by the 5 leaders on the market, whether for roasted coffee (Nestlé, JDE, Tchibo, JM Smuck and Lavazza) or for green coffee (Neumann, ECOM, Olam, Louis Dreyfus and Volcafé). In many producing regions, the structure of the supply chains is determined by the combined influence of these two key actors, in particular through the introduction of barriers to entry (minimum volumes, management of supplier stocks, etc.) and sourcing among small producers, who have become dependent because of the asymmetry of the balance of power¹²¹. This corresponds to a governance model that economists call "relational".

Upstream from the supply chains, coffee growers are generally obliged to accept the terms of trade imposed on them by their buyers, unless they can collectively organise themselves into cooperatives.

Since the end of the ICA and the liberalisation of the coffee market in 1989, the sector has been subjected to the roasters' growing influence, which has surpassed that of the traders. Now, the roasters have become the actors who generate the most added value within the sector (see previous graph). They don't exert this influence directly, but rather in close coordination with international traders, with whom they have often been building privileged relationships for decades¹²².

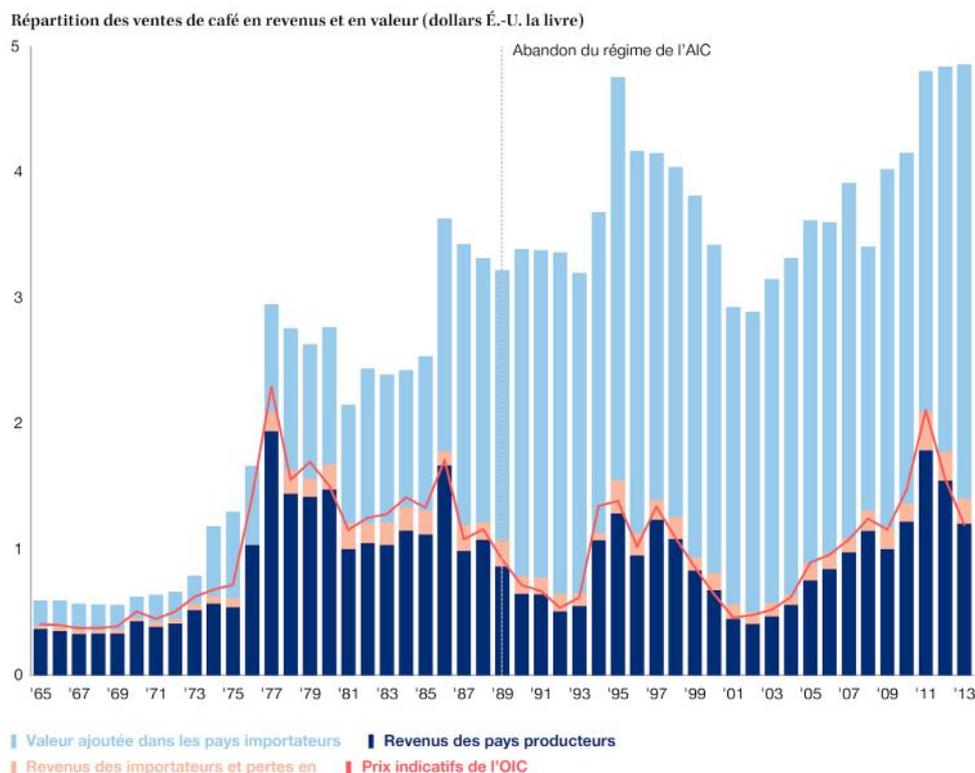


Figure 30: Changes in value distribution in the global coffee chain since the 1970s.
Source: L.F. Samper and X.F. Quinones-Ruiz, 2017

¹²¹ Ibid.

¹²² B. Daviron and S. Ponte, *The Coffee Paradox: Global Markets, Commodity Trade & the Elusive Promise of Development*, 2005

The dominant position reached by roasters has allowed them to increase their share in value, thanks to the development and control of the "intangible" quality of the coffees that they sell. In the late 1980s, early 2000s and since 2011, this situation repeatedly led to a revealing "coffee paradox" crisis¹²³ in which producing countries faced very low prices and a drastic reduction in the value they managed to obtain, while at the same time the value of finished products in consumer countries rose.

International Coffee Agreement - ICA

A coffee sector in demand of a stabilising regulation: 1962 implementation of the ICA and its consequences

The global coffee market underwent its first transformation in the 1930s, when government institution regulations on exports and prices were implemented in producing countries¹²⁴.

In the mid-1950s, due to a crisis of massive overproduction and collapsing stock prices¹²⁵, negotiations were held among producing countries to find a solution that would ensure price stability before the signing of the International Coffee Agreement (ICA) in 1962. These signatories were both producer countries in need of regulations and consumer countries eager to ensure a steady supply of products of a consistent quality¹²⁶.

Spearheaded by the International Coffee Organisation (ICO), this agreement instituted a target price range for coffee¹²⁷ and export quotas for each producer country (which the latter then divided internally)¹²⁸.

These mechanisms have generated relative stability in world prices (despite both peaks in 1976/77 and 1985/86 because of climatic variations causing a drop in production in Brazil¹²⁹), a safeguard for a balanced distribution of profits over a long period¹³⁰. On a broader level, the agreement contributed to the economic development of producing countries; coffee was thus a relatively stable and attractive source of income for them. However, the latter have gradually tried to distinguish themselves through divergent strategies, challenging the unity and understanding required for its operation¹³¹.

ICA's structural limitations that led to its downfall in 1989

In the late 1980s, producing countries challenged the quota distribution key¹³² (the most productive countries complained about limitations on their sales during high price periods¹³³), and a quota-free parallel market developed, no longer allowing Brazil to regulate supply through its stocks¹³⁴.

For their part, consumer countries deplored the utter disregard for coffee quality¹³⁵ and challenged the prices they had to submit to. These prices were higher than those they would have obtained if the ICA had not existed¹³⁶.

Overwhelming criticism led to the repeal of the ICA in 1989, depriving the ICO of its regulatory function that has since been confined to a supporting role for product quality, promoting coffee and providing information on the market¹³⁷.

And afterwards?

¹²³ Ibid.

¹²⁴ Daviron B. and Ponte S., *op. cit.*

¹²⁵ Daviron B. and Ponte S., *op. cit.*

¹²⁶ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

¹²⁷ WIPO, Intangible Capital in Global Value Chains, 2017

¹²⁸ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007; WIPO, Intangible Capital in Global Value Chains, 2017

¹²⁹ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

¹³⁰ Sorbonne University, Dynamique du café au Pérou et marché int, 2011

¹³¹ Sorbonne University, Dynamique du café au Pérou et marché int, 2011

¹³² Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

¹³³ WIPO, Intangible Capital in Global Value Chains, 2017

¹³⁴ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

¹³⁵ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

¹³⁶ WIPO, Intangible Capital in Global Value Chains, 2017

¹³⁷ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

1989 sounded the death knell for a period dating back to 1900 when producer countries profited from a real capacity to influence international prices due to their control of the supply factor. They are now in tune with the worldwide market whose prices are highly volatile¹³⁸, and inventory stocks were transferred to the private companies of traders¹³⁹. The prevailing balance among producing regions has been disrupted. In particular, the share of African countries in world production has woefully shrunk, with the notable exception of Ethiopia¹⁴⁰. The repeal of ICA followed by the liberalising wave of the 1990s marked the beginning of a new dynamic, where consumer country stakeholders, especially coffee roasters, are now in control of the supply chain¹⁴¹.

This unequal growth dynamic between upstream and downstream elements of the coffee value chain is amplified by an ever-increasing market polarisation over the last fifteen years. This last year alone has indeed allowed roasters, and therefore distributors, to increase their margins, as shown by the example of the French market.

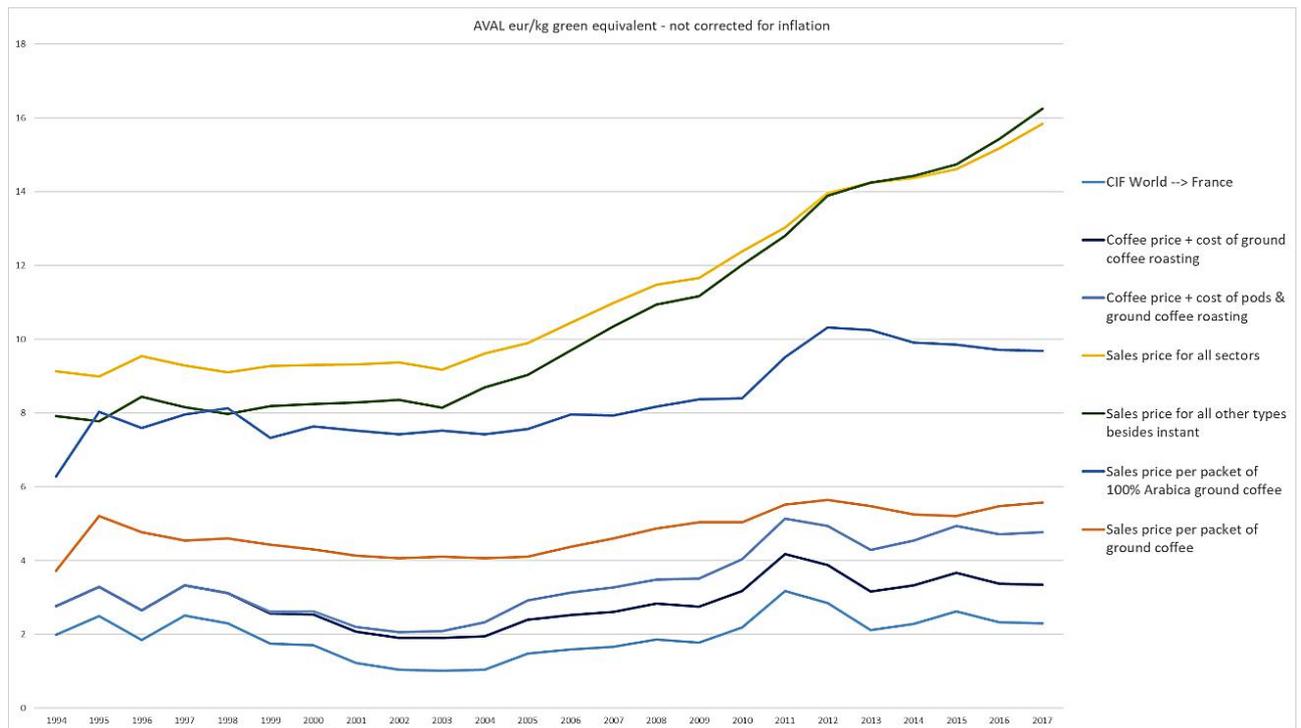


Figure 31: Changes in the distribution of the value of ground coffee sold in 250 g packets in France. Source: Basic

Analysis of the distribution of the value of the producer to the French consumer for roasted ground coffee shows a sharp price increase for the consumer for coffee sold in all formats combined (packets, pods and capsules) since 1994.

Thus, the average price was equivalent to €9.10/kg in 1994 (no adjustment for inflation); the year when the consumption of single-serve coffee was still in its early stages (see section 1.1.2). However, it rose to more than €15.80/kg in 2017 due to the growth in single-serve coffee consumption (soft pods and capsules), an increase of €6.70/kg (+66%) over that period.

In this regard, we have consolidated statistics on the price of green coffee imported into France (all origins combined) and estimated the direct costs of processing coffee (roasting, logistics and packaging) on the basis of interviews with sector stakeholders (traders and roasters).

¹³⁸ Daviron B. and Ponte S., *op. cit.*

¹³⁹ Sorbonne University, Dynamique du café au Pérou et marché int, 2011

¹⁴⁰ Sorbonne University, Dynamique du café au Pérou et marché int, 2011

¹⁴¹ Daviron B. and Ponte S., *op. cit.*

These estimates show that the additional cost linked to the growth of pods and capsules only reflects a small part of retail price inflation: it should be €1.40/kg in 2017 (if compared to a situation where coffee were only sold in 250 g packets) while the retail price actually surged by €6.70/kg.

The stakeholders who were interviewed, in particular distributors, reported "higher costs linked to the management of a great number of references of coffee pods and capsules" - but without quoting any figures, the latter seem insignificant if we break them down to kg of coffee sold.

Thus, with the state of the information obtained, the additional profits reaped by roasters and supermarkets on the French market could have reached over €1 billion per year in 2017 compared to 1994, without knowing exactly how the profits are distributed between the two stakeholders.

Focus: Nestlé, iconic example of sector development since the early 2000s

Origin of a revolutionary concept

For several decades, Nestlé S.A. has been the leader in the global coffee sector, representing around 22% of global sales of coffee consumed at home and purchasing just over 10% of worldwide coffee production.

What distinguishes this company is that it unites from within the two extremes of coffee consumption with two brands that, during their respective times, revolutionised the market: Nescafé (representing almost half the sales of instant coffee worldwide) and Nespresso (global leader in the sale of coffee capsules).

Launched in 1986, Nespresso first built its business model around an offer from Grand Cru Coffee along with professionals¹⁴². Dealing with a lacklustre performance in the early 1990s, a Nestlé subsidiary proposed a new offer to professionals and private individuals which included its own machines in addition to Grand Cru capsules¹⁴³.

Nespresso has gradually consolidated in opposition to Nestlé S.A.'s historic instant coffee brand: where Nescafé is sold in supermarkets to the general public, Nespresso is unique for its novel experience in tasting high quality coffee and the service provided¹⁴⁴.

Complementary sales channels were built: in addition to Club Nespresso created as of 1989, whose restricted access to brand consumers of the brand plays on the exclusive luxury dimension, a commercial website was launched in 1996¹⁴⁵ and specialist shops opened in upscale neighbourhoods of large cities¹⁴⁶.

After a difficult start, Nespresso enjoyed steady and rapid growth throughout the 1990s and 2000s: +30% annual growth in revenues in 2010 reaching CHF 3 billion¹⁴⁷. But Nespresso entered a rather delicate period in 2011 when several of its key patents expired, opening the door to its competitors to develop capsules compatible with the Swiss brand's machines: between 2011 and 2015, its share of the coffee capsule market dropped from 41% to 37%¹⁴⁸. Nevertheless, capsule sales continued to grow even during this period, since Nespresso invariably attracted more consumers than its competitors and successfully continued to increase its market. Nestlé S.A.'s new "billionaire brand"¹⁴⁹ seems thus poised to win a risky bet: to bring quality coffee to the mass market while offering consumers a sense of exclusivity.

Investing upstream in the chain to secure supplies

To achieve its ambitious objectives of +20% of yearly sales set at the start of the 2000s¹⁵⁰, Nespresso identified two significant obstacles: only 1 to 2% of coffee production met its quality criteria, and the lack of profitability in coffee growing

¹⁴² Nespresso, "The Nespresso History: From a Simple Idea to a Unique Brand Experience", 2016

¹⁴³ Nespresso, "The Nespresso History: From a Simple Idea to a Unique Brand Experience", 2016

¹⁴⁴ KPMG 2017

¹⁴⁵ Nespresso, "The Nespresso History: From a Simple Idea to a Unique Brand Experience", 2016

¹⁴⁶ The first Nespresso shop opens in Paris around the corner from the Palais Garnier (Nespresso, "The Nespresso History: From a Simple Idea to a Unique Brand Experience", 2016)

¹⁴⁷ INCAE, "Nestlé Nespresso: Creating Shared Value through Real Farmer Income", 2010

¹⁴⁸ Euromonitor in Les Échos, "Nespresso : la machine et ses capsules ont déjà 30 ans", 10 September 2016, <https://www.lesechos.fr/10/09/2016/lesechos.fr/0211271040926, nespresso---la-machine-et-ses-capsules-ont-deja-30-ans.htm#>. Accessed 11 July 2018.

¹⁴⁹ INCAE, "Nestlé Nespresso: Creating Shared Value through Real Farmer Income", 2010

¹⁵⁰ INCAE, "Nestlé Nespresso: Creating Shared Value through Real Farmer Income", 2010

was steadily pushing growers towards other crops, risking the durability of production in some key regions for the group's supplies¹⁵¹.

To meet these challenges, Nespresso partnered with Rainforest Alliance in 2003 to launch the Nespresso AAA Sustainable Quality™ Coffee Program and has been on a mission to help coffee growers become more and more efficient in the production of very high quality coffee while increasing their productivity and the viability of their farms¹⁵². The first objective of this programme is to ensure the quality required by Nespresso¹⁵³ at affordable costs thanks to improved yields. This objective is combined with compliance with international labour standards and the adoption of good agricultural practices to better preserve the environment¹⁵⁴. It is not about a risk management system, but rather a mechanism to continually improve the conditions of coffee production on farms. It is taken on as an "interventionist" strategy by the company, who defines the criteria of farming practices to be implemented by producers, adapted to conditions of each country and centred on ensuring coffee quality¹⁵⁵. This internal approach is not independently certified; but monitoring and evaluation is conducted every year by Rainforest Alliance auditors on behalf of Nespresso¹⁵⁶.

Since 2017, over 90% of Nespresso's supplies would be AAA certified¹⁵⁷ and the programme would include more than 75,000 producers spread out over 300,000 hectares in 12 countries¹⁵⁸. In return for implementing continued improvement approaches defined by Nespresso, producers receive a price 30% to 40% higher than the standard coffee market price and 10-15% above the local market price for coffees of equivalent quality¹⁵⁹. Added to this is deployment in partner organisations of around 300 agronomists employed by Nespresso¹⁶⁰, available year-round to monitor with producers the implementation of programmes designed to improve agricultural practices and yields and to put into effect the application of Rainforest Alliance specifications¹⁶¹.

One of the historic partners of Nespresso AAA Sustainable Quality™ Coffee is Expocafé¹⁶² in Colombia. In 2017, the Colombian producer members of the approach would represent on their own more than half of the producers involved in the AAA approach worldwide (40,000 out of a total of 75,000¹⁶³. Nespresso's commitment to build a long-term relationship¹⁶⁴ appears to have benefited Expocafé, which explains them moving from "simple" exporter to a company that provides high value-added services to producers¹⁶⁵. However, even if mutual trust prevails¹⁶⁶, the established governance relationship is still a "quasi-hierarchical" structure,¹⁶⁷ since it is based on extremely precise criteria and a fixed-price structure¹⁶⁸. Physical and economic traceability appears guaranteed by Expocafé and producers receive a minimum

¹⁵¹ Thus, Nespresso writes, "Nespresso soon realized that its requirement for long-term sustainable sources of green coffee overlapped completely with the farmers' own need to improve their long-term economic prospects and a wider societal need to improve the effectiveness of coffee farming in conserving natural resources," (INCAE, "Nestlé Nespresso: Creating Shared Value through Real Farmer Income", 2010).

¹⁵² INCAE, "Nestlé Nespresso: Creating Shared Value through Real Farmer Income", 2010

¹⁵³ Interview with a representative from Nespresso's "Sustainable Development" department conducted on 24 August 2018

¹⁵⁴ Interview with a representative from Nespresso's "Sustainable Development" department conducted on 24 August 2018

¹⁵⁵ Interview with a representative from Nespresso's "Sustainable Development" department conducted on 24 August 2018

¹⁵⁶ Interview with a representative from Nespresso's "Sustainable Development" department conducted on 24 August 2018

¹⁵⁷ It should be noted that only 40% are Rainforest Alliance-certified (Nespresso, "The Positive Cup: Because Coffee Can Have a Positive Impact", *Creating Shared Value Report*, 2016).

¹⁵⁸ Nestlé, "Nestlé in society. Creating Shared Value and meeting our commitments", 2017. In 2005, there were 1500 producers in the programme and in 2009 there were only 10,000 ha (Nespresso, "The Positive Cup: Because Coffee Can Have a Positive Impact", *Creating Shared Value Report*, 2016)

¹⁵⁹ INCAE, "Nestlé Nespresso: Creating Shared Value through Real Farmer Income", 2010

¹⁶⁰ Nespresso, "The Positive Cup: Because Coffee Can Have a Positive Impact", *Creating Shared Value Report*, 2016

¹⁶¹ INCAE, "Nestlé Nespresso: Creating Shared Value through Real Farmer Income", 2010

¹⁶² ILO, "Nespresso's AAA Program. High Quality Coffee Sourcing in Colombia", 2017

¹⁶³ Interview with a representative from Nespresso's "Sustainable Development" department conducted on 24 August 2018

¹⁶⁴ INCAE, "Nestlé Nespresso: Creating Shared Value through Real Farmer Income", 2010

¹⁶⁵ ILO, "Good Procurement Practices and SMEs in Supply Chains: Nespresso AAA Sustainable Quality Program Impact of Procurement Practices in an SME in Colombia", 2017

¹⁶⁶ ILO, "Good Procurement Practices and SMEs in Supply Chains: Nespresso AAA Sustainable Quality Program Impact of Procurement Practices in an SME in Colombia", 2017

¹⁶⁷ Gereffi et al. 2005

¹⁶⁸ ILO, "Good Procurement Practices and SMEs in Supply Chains: Nespresso AAA Sustainable Quality Program Impact of Procurement Practices in an SME in Colombia", 2017

of 80% of the sales value from Nespresso¹⁶⁹ in line with the broader policy of the Colombian Coffee Growers Federation (FNC)¹⁷⁰. There is no information on the visibility that is given to producers in terms of commitment to purchasing coffee over time. Nespresso could play one supplier against another. For their part, the suppliers are dependent on Nespresso for their sales while they are part of the AAA programme¹⁷¹.

At the level of coffee growers, it would appear that the cumulative effects of a purchase price higher than that on the market (see below) as well as a guarantee of 80% of the value, very strongly encouraged by the FNC, allows them to earn higher-than-average incomes. AAA producers' net incomes could thus reach up to 46% higher than conventional incomes¹⁷². Nonetheless, even if producers obtain a higher price than that on the market for (the part of) their harvest certified by AAA, in the end, they gain a smaller share of the created value, since Nespresso capsules are sold at an average of 6.5 times higher in price per kilo than 100% Arabica ground coffee. It should be noted that this can be explained in part by the extra costs involved in capsule packaging (estimated at 14 USD/kg green coffee equivalent¹⁷³) and the development of shop networks.

Average purchase price of green coffee in 2016	USD/kg
In Colombia	2.70
In the AAA programme with Expocafé	3.78
Average sale price for consumers in France in 2016	USD/kg green coffee equivalent
100% Arabica ground coffee	10.92
Nespresso coffee capsule	65.07
Share of the value passed on to producers in France in 2016	% of consumer sale price
For a 100% Arabica ground coffee packet	25%
For an AAA certified Nespresso coffee capsule	6%

Table 1. BASIC, based on Nestlé 2016 data, INCAE 2010

In addition, only a part of each producer's total harvest benefits from the AAA programme criteria¹⁷⁴: the percentage varies depending on the country, but on average around 78% of an AAA coffee grower's harvest is accepted under the programme¹⁷⁵. It would appear that no information is available on the remainder of the production. Similarly, no public information is available today on the potential extra costs associated with cultivating coffee under AAA programme conditions.

More generally, despite Nespresso's considerable efforts to get involved upstream, information on the impact on producers is relatively sparse. The company conducted a follow-up intended only as internal information, but there is no public, independent study of its impact (except in Colombia in 2016)¹⁷⁶.

Although the company claims it invested almost 200 million Swiss francs between 2014 and 2017, or 50 million Swiss francs (about €45 million) per year, the vast majority of this amount is the premium paid by Nespresso beyond the conventional price of coffee and the salaries of the agronomists deployed in the field (only 5% of this amount would be invested in farming infrastructures¹⁷⁷).

¹⁶⁹ ILO, "Good Procurement Practices and SMEs in Supply Chains: Nespresso AAA Sustainable Quality Program Impact of Procurement Practices in an SME in Colombia", 2017

¹⁷⁰ Although this rule is not formalised, it would seem that the FNC is able to respect a tacit rule according to which at least 80% of the FOB price must be returned to the producer (Source:?).

¹⁷¹ ILO, "Good Procurement Practices and SMEs in Supply Chains: Nespresso AAA Sustainable Quality Program Impact of Procurement Practices in an SME in Colombia", 2017

¹⁷² Third World Centre for Water Management, "Creating Shared Value from Bean to Cup: The Role of Nestlé in Colombia's Coffee Sector", 2015

¹⁷³ Interview with a French coffee roaster

¹⁷⁴ INCAE, "Nestlé Nespresso: Creating Shared Value through Real Farmer Income", 2010

¹⁷⁵ Third World Centre for Water Management, "Creating Shared Value from Bean to Cup: The Role of Nestlé in Colombia's Coffee Sector", 2015

¹⁷⁶ Interview with a representative from Nespresso's "Sustainable Development" department conducted on 24 August 2018

¹⁷⁷ Nespresso, The positive Cup, Creating shared value report, 2017

This amount should be compared with the net income generated by Nespresso on its coffee capsule sales, estimated at 15% of its annual sales according to the Credit Suisse analysis¹⁷⁸, or a total of €600 million per year.

In addition, the AAA programme seems to create a situation of dependence for its partners, even more pronounced than in the conventional market place. This may be beneficial for as long as it lasts, but detrimental on the day when Nespresso decides to obtain supplies from alternative sources.

The lacklustre impact of Nespresso's AAA programme poses all the more a challenge since Nestlé has increased the communication tools dedicated to its quality brand while according to our estimates, it would only represent around 7% of the value of Nestlé S.A.'s global sales¹⁷⁹.

An example followed by competitors

In the face of Nespresso's success on the market, particularly in France where its sales represented 20% of the sales of home-consumption coffee, other sector leaders have developed competing offers since the coffee capsule patent fell into the public domain several years ago. At the forefront, JDE countered by developing a mirror-image strategy of Nespresso, but in supermarkets: it created a dedicated compatible capsule brand called L'OR Espresso, with a very wide variety of 100% UTZ-certified blends¹⁸⁰. Nowadays, the brand probably represents 40% of compatible capsule sales in supermarkets (or less than a third of Nespresso sales in France). It is closely followed by Carte Noire capsules, which were also developed by JDE and have since been acquired by the Lavazza Group¹⁸¹.

The most recent arrival is the Café Royal brand created by distributor Migros (Swiss sector leader). It built an advertising strategy similar to Nespresso's, but quirky, with singer Robbie Williams as a figurehead, and a Fairtrade certification on some blends. It likely already represents 15% of capsule sales in supermarkets¹⁸².

An even greater responsibility for Nestlé on the remainder of its coffee business

As previously mentioned, Nestlé coffee purchases as compared to Nespresso's transactions would only represent 10% of its total procurement; the rest is vested in its Nescafé brand, much of which is used to manufacture instant coffee. This product, which is in high demand in emerging countries, is at least as cost-effective for the company as Nespresso's transactions, according to Credit Suisse estimates¹⁸³. Upstream in the supply chain a large portion of the coffee purchased is Robusta, for which producers are paid a price considerably lower than for Arabica (see section 1.3).

Nestlé has also allocated resources for a programme called "Nescafé Plan" on this portion of its business, which is essentially focused on the coffee plan provision for higher yields, combined with support for land provided by Nestlé-employed agronomists¹⁸⁴. In contrast to the AAA programme, Nescafé does not commit to paying coffee growers a higher-than-market price as part of its approach. The coffee growers are supposed to improve their economic viability solely by way of their yields¹⁸⁵.

As with the AAA approach, there are (almost) no independent, public studies to gauge the impact of this programme for producers. However, as an industry leader with a very strong influencing capacity, Nestlé has a great responsibility to address the social and environmental challenges it faces, and a duty to be more transparent on the impact of its commitments in this matter.

1.4.2. Major social and environmental impacts are concentrated in the producing countries, but still exist in consumer countries.

¹⁷⁸ Crédit Suisse, Nestle Company Profile, 2013

¹⁷⁹ Crédit Suisse 2012

¹⁸⁰ www.lorespresso.com accessed on 8 August 2018

¹⁸¹ https://www.challenges.fr/challenges-soir/cafe-royal-s-invite-dans-les-machine-nespresso-des-bureaux_29850 accessed on 8 August 2018

¹⁸² https://www.challenges.fr/challenges-soir/cafe-royal-s-invite-dans-les-machine-nespresso-des-bureaux_29850 accessed on 8 August 2018

¹⁸³ Crédit Suisse, Nestle Company Profile, 2013

¹⁸⁴ <https://www.dolce-gusto.fr/pages/systeme/un-cafe-cultive-avec-respect/> accessed on 24 August 2018

¹⁸⁵ <https://www.dolce-gusto.fr/pages/systeme/un-cafe-cultive-avec-respect/> accessed on 24 August 2018

Upstream, producers and workers are in highly precarious situations with serious environmental effects

Upstream in the coffee chain, most producers do not benefit from the high value created with consumers.

Since the end of the International Coffee Agreement (AIC) and the liberalisation of the market, the prices at which coffee growers sell their coffee have been increasingly volatile and regularly suffer significant lows. The largest one, in the early 2000s, led to a crisis named "the coffee paradox", where producers obtained the lowest prices in a century, while at the same time the value of coffee-based products in consumer countries rose.¹⁸⁶ This downward trend has been back in action in last few years. World coffee prices were cut by 2.5 times after 2011, reaching \$1.05 per pound in August 2018.

An aggravating phenomenon is that coffee growers have been caught between this price evolution and a notable increase in production costs for more than 20 years (connected with the increased price of labour and fertiliser). The low margins they generate discourage short and long term investments, leading to lower productivity and quality and *ultimately* obtaining lower prices for their coffee¹⁸⁷. The most vulnerable producers are often the least organised collectively, meaning they have weaker negotiation power and no integration in the first stage of processing which would allow them to control the quality and obtain higher prices.¹⁸⁸

For most coffee growers, the situation is not currently viable from an economical point of view¹⁸⁹. The families that cultivate coffee often suffer from malnutrition and high levels of illiteracy, causing social problems such as migration and drug trafficking¹⁹⁰. The use of child labour is still a solution for certain growers (e.g. in Kenya and Honduras) in order to contain their costs in the face of a rise in agricultural wages or difficulty finding workers¹⁹¹. The latter have very precarious working conditions and often live below the poverty line. In parallel, they are exposed to many risks, respiratory diseases and deficiencies due to being exposed to chemicals without protection¹⁹².

Finally, it is documented that women are the most affected by the inequalities within this sector: although they perform around 70% of the work maintaining the plots and harvesting the coffee, most of the time they are the lowest paid workers and are very rarely owners themselves.¹⁹³

In this context, only a (small) minority of producers benefit from having their production supported by major brands such as Nespresso¹⁹⁴ and specialty coffee distributors. These companies look for very specific coffee qualities and are willing to pay (well) above the market price, thus increasing the inequality gap between coffee growers.¹⁹⁵

Coffee production has also a strong impact on deforestation, a growing issue resulting from both the expansion of coffee growing and the modernisation of farming operations which is often accompanied by the

¹⁸⁶ Daviron B. and Ponte S., *The Coffee Paradox*, 2007

¹⁸⁷ Hivos, *Coffee Barometer*, 2014

¹⁸⁸ Oxfam, *Poverty in your Cup*, 2002

¹⁸⁹ ICO, 6th consultative forum on coffee sector sustainability, 2017

¹⁹⁰ ICO, 6th consultative forum on coffee sector sustainability, 2017

¹⁹¹ University of Connecticut, *The Coffee Bean A Value Chain and Sustainability Initiatives Analysis*, 2014

¹⁹² University of Connecticut, *The Coffee Bean A Value Chain and Sustainability Initiatives Analysis*, 2014

¹⁹³ SCAA, *A blueprint for gender inequality in coffee lands*, 2016

¹⁹⁴ For example, the entire coffee production sold by Nespresso is created by 75,000 producers for a sales revenue around \$5 billion, or a ratio of 14,000 producers per billion dollars of sales revenue generated. In contrast, the whole global market of coffee at home, which represents \$100 billion, would be supplied by around 20 million producers, or a ratio close to 15 times higher (200,000 producers per billion dollars of sales revenue generated).

¹⁹⁵ Hivos, *Coffee Barometer*, 2018; BioScience, *Evolution Coffee Production Systems and Market*, 2014; Oxfam, *Poverty in your Cup*, 2002

cutting of trees that provide shade and a loss of the associated ecosystem benefits (temperature control, fight against erosion, maintenance of soil fertility and moisture).¹⁹⁶

This modernisation thus disrupts agroforestry practices by moving towards systems based on the monoculture of coffee, without shade. This allows a higher production of coffee per hectare, but with plantations of various fast growing hybrid varieties that require the increased use of synthetic chemicals, leading to decreased soil and water quality, a loss of biodiversity, etc.¹⁹⁷

Downstream, significant impacts on the environment

The environmental impacts are not confined to the upstream part of the sector: in addition to water and energy consumption in coffee-making factories - specially to make instant coffee - the development of pods and capsules generates increasing concern about their environmental impact due to excess packaging and (non) recycling at the product's end of life.¹⁹⁸

In fact, life cycle analyses carried out to date show that the manufacture of aluminium or plastic pods generates 3-4kg of greenhouse gases for each kilogram of packaging produced, or the same as coffee (which creates 2-4kg of CO₂ for every kilogram produced) - bearing in mind a standard pod is made up of about 5g of coffee and 1.5g of packaging. This negative impact can be reduced by a quarter to a third if the aluminium or plastic is recycled¹⁹⁹. To date, we have not found any analyses pertaining to the vegetable fibre pods marketed by some companies on the French market.

Beyond the issue of climate change, aluminium poses additional problems related to the consumption of natural resources: as a matter of fact, it takes twice as much water to manufacture an aluminium pod than a standard pod²⁰⁰.

Advocates of pods say that they limit the amount of coffee used per cup, which would offset by 50% the additional emissions related to packaging in the event of an overdose²⁰¹.

Lastly, the available studies indicate that the energy consumption of filter and pod coffee machines left switched on generates greenhouse gas emissions equivalent to those associated with excess coffee packaging.

Regarding social issues in the downstream of the coffee sector, we have not found any data showing problems related to work in processing plants over the last 10 years (major trade union mobilisations against precarious employment having taken place in the early 2000s in Nestlé instant coffee plants in emerging countries).

The diagram below summaries the main impacts previously detailed along the value chain:

¹⁹⁶ BioScience, Evolution Coffee Production Systems and Market, 2014

¹⁹⁷ Oxfam, Poverty in your Cup, 2002

¹⁹⁸ Center for Sustainable Systems, University of Michigan, Food Product Environmental Footprint Literature Summary: Coffee, 2017

¹⁹⁹ Center for Sustainable Systems, University of Michigan, Food Product Environmental Footprint Literature Summary: Coffee, 2017; Hicks, University of Wisconsin, Environmental Implications of Consumer Convenience: Coffee as a case study, 2017; Quantis, Life Cycle Assessment of coffee consumption: comparison of single-serve coffee and bulk coffee brewing, 2015

²⁰⁰ Quantis, Life Cycle Assessment of coffee consumption: comparison of single-serve coffee and bulk coffee brewing, 2015

²⁰¹ Quantis, Life Cycle Assessment of coffee consumption: comparison of single-serve coffee and bulk coffee brewing, 2015

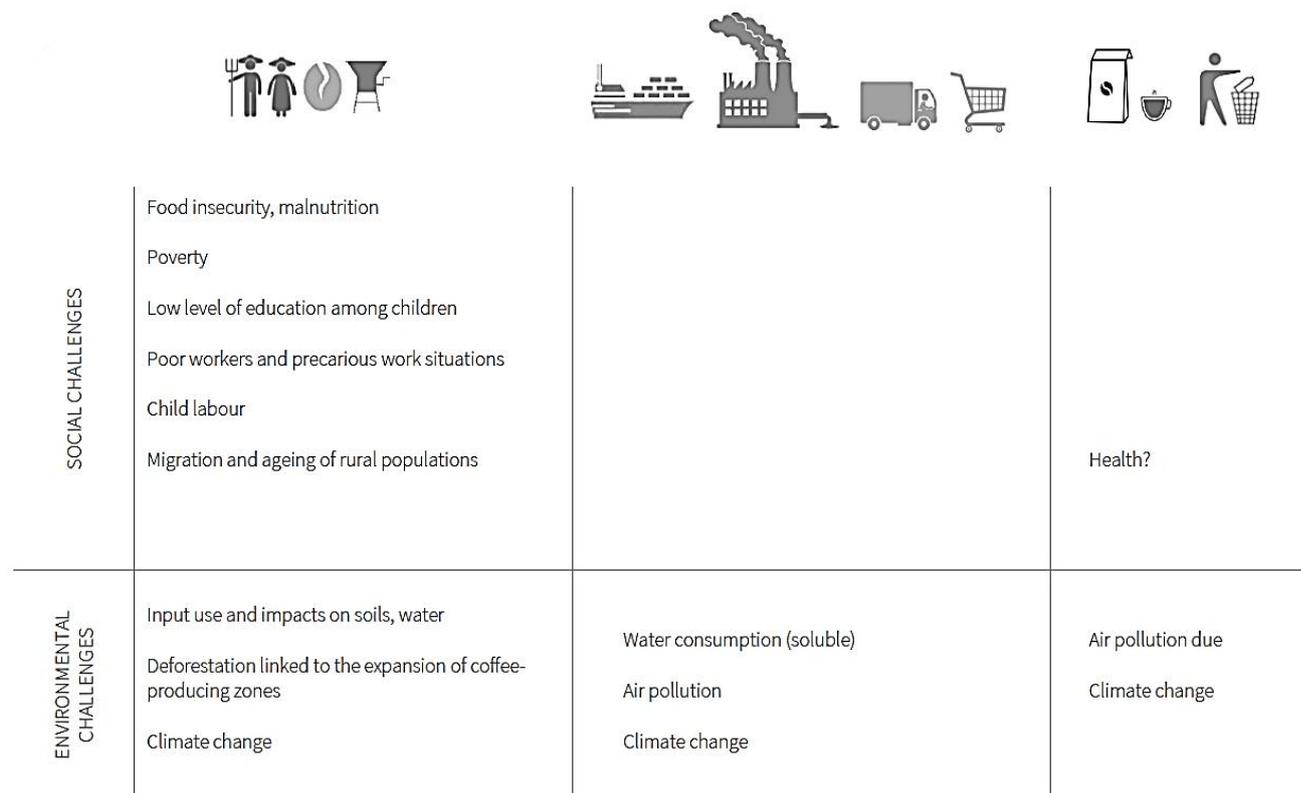


Figure 32: Main social and environmental impacts along the coffee value chain. Source: Basic

1.4.3.A situation set to worsen as result of global warming

Because it requires very specific climatic conditions, coffee growing - especially Arabica²⁰² - is already affected by climate change: lower quality and productivity due to changes in temperature and rainfall levels as well as their seasonality²⁰³, rust outbreaks which affected more than 50% of surfaces in Latin America and the spread of resistant pests such as the coffee berry borer in Africa²⁰⁴.

Crop yields and the quality of harvests are affected, with an increase in production costs that can significantly reduce income for the coffee producers.

Due to the interconnected nature of the effects of climate change on farmers' incomes and access to essential services, existing problems of food security, access to water resources and the quality and quantity of agricultural production are exacerbated.

Producers who depend on their small coffee plantations to survive, and who have little or no additional sources of income, are the most vulnerable. For many, the effects of climate change are already too much for them to handle. There are few proven solutions today to deal with this phenomenon in the coffee sector.²⁰⁵

The situation in 2050: a warmer, more humid and more uncertain climate for coffee growing regions, contributing to a fall in coffee production

²⁰² Earth Institute, Evaluating impacts of climate change on coffee, 2015

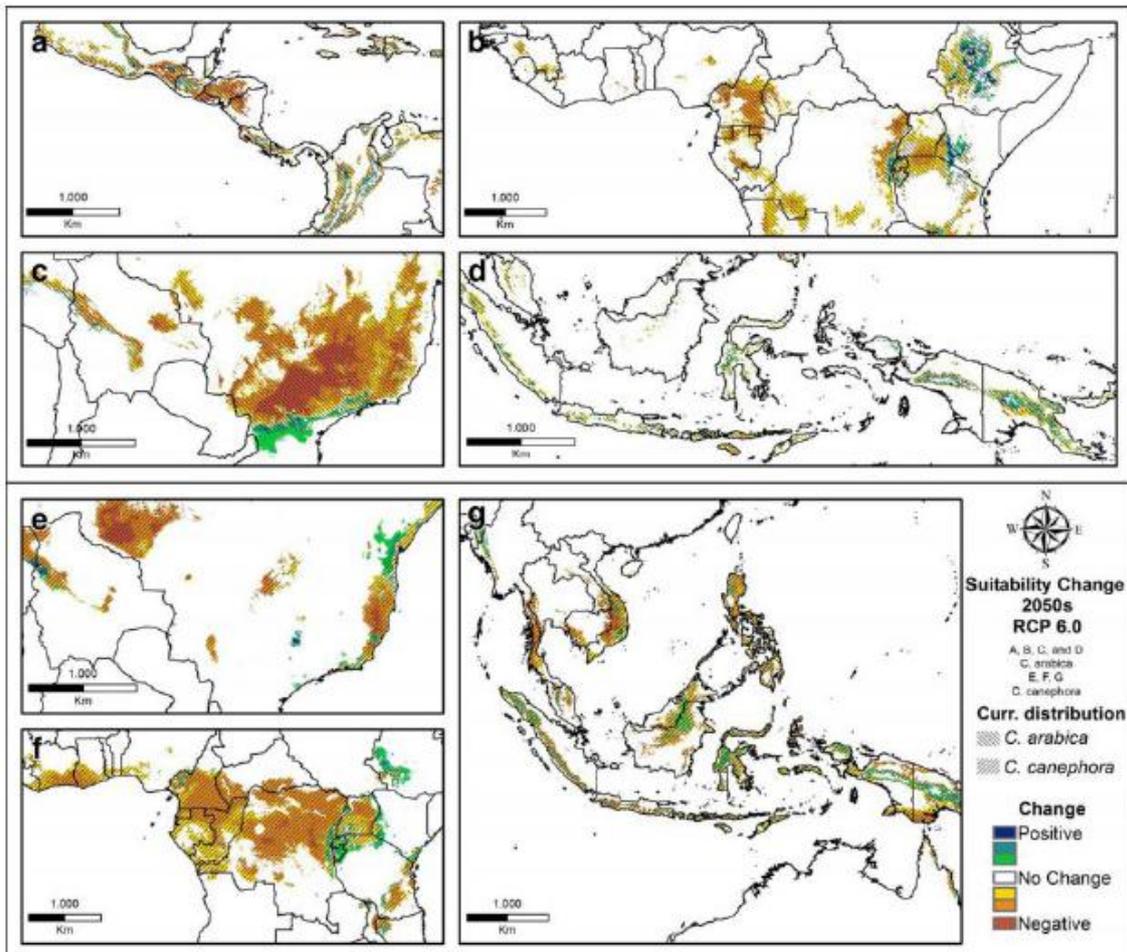
²⁰³ Earth Institute, Evaluating impacts of climate change on coffee, 2015 and AJAR, Impact Climate Change Ethiopian Coffee, 2017

²⁰⁴ Earth Institute, Evaluating impacts of climate change on coffee, 2015

²⁰⁵ Hivos, Coffee Barometer, 2014

Between now and 2050 the trends of the last few decades are expected to persist or even worsen. These may lead to a rise in temperature in the intertropical zone of +2.1°C and a +1.7% increase in rainfall, with stronger rains and prolonged dry seasons that become increasingly arid.²⁰⁶ Extreme weather events are also expected to become more frequent, notably through the intensification of the El Niño/La Niña phenomena, which proliferate diseases and pest attacks in coffee-growing areas²⁰⁷. These kinds of changes could result in a 20% decrease in crop yields between now and 2050²⁰⁸ and may reduce the overall quality of coffee.²⁰⁹

Figure 1: Suitability changes by the 2050s in the RCP 6.0 scenario; A-D: Arabica, E-G: Robusta



Source: Bunn et al. (2015)

² The IPCC selected four Representative Concentration Pathways (RCPs) defined by their total radiative forcing (cumulative measure of human emissions of greenhouse gasses from all sources expressed in Watts per square meter) pathway and level by 2100. The RCPs were chosen to represent a broad range of climate outcomes, based on a literature review, and are neither forecasts nor policy recommendations. In their article, the authors use the projections of RCP 2.6, RCP 6.0, and RCP 8.5.

Figure 33: Impact of climate change on coffee production, average GHG emissions scenario (RCP 6.0) Source: C. Bunn, 2015²¹⁰

As a result, the phenomenon of climate change is expected to have a very strong impact on the spatial distribution of coffee production worldwide: around 50% of the area currently used for coffee production

²⁰⁶ Earth Institute, Evaluating impacts of climate change on coffee, 2015

²⁰⁷ Earth Institute, Evaluating impacts of climate change on coffee, 2015

²⁰⁸ Earth Institute, Evaluating impacts of climate change on coffee, 2015

²⁰⁹ CJAR, Projected Shifts in Coffea Arabica Suitability, 2015

²¹⁰ C. Bunn, Modelling Impact Climate Change on Coffee, 2015

would no longer be suitable by 2050²¹¹, with variations depending on the country, the studies and the methods used.²¹²

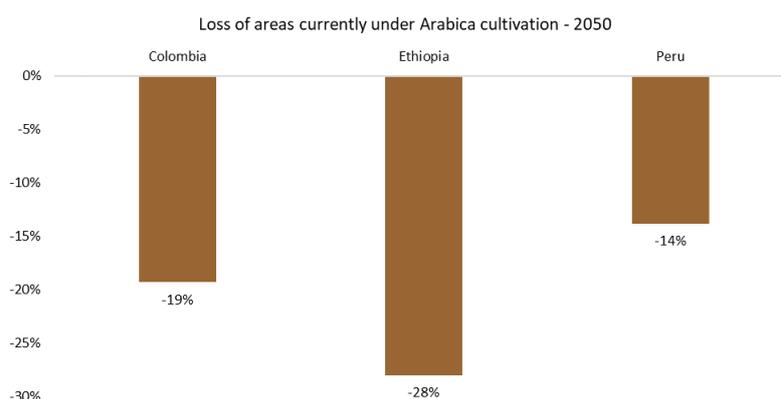


Figure 34: Loss of surfaces currently growing Arabica. Source: BASIC, based on The Earth Institute, 2015²¹³

Even for the countries for which prospective studies forecast the lowest surface losses- such as Peru, Colombia and Ethiopia - between 15% and 30% of the land currently used for growing coffee would no longer be suitable for this crop in 2050. From the countries most affected, Brazil, India or Uganda could lose more than 60% of their coffee growing land. Overall, we predict the low altitude and low latitude zones will be the most affected.²¹⁴

In parallel, some countries may benefit from an increase in areas suitable for coffee production, especially Robusta²¹⁵. This could happen in parts of East Africa, south Brazil, Indonesia, Papua New Guinea and some areas of the Andes.²¹⁶

We can expect a relatively large migration of coffee production towards the poles and high altitude areas on mountainous slopes²¹⁷.

Reducing coffee production and quality will impact the entire value chain by reinforcing certain impacts

While half of the coffee-growing surfaces are likely to become unsuitable for this crop in 2050, the prospective studies foresee a sustained increase in coffee consumption (especially quality coffees²¹⁸) due to population growth, changes in consumption habits and the development of emerging economies. To meet this growth forecast, it is estimated we would require 2.5 times the current surface area available for coffee growing.²¹⁹ As a result, pressure on coffee production is likely to increase, leading to increased volatility and price levels; and the new coffee areas developed to meet the growing demand may amplify the phenomenon of deforestation that is already occurring.

These changes will affect industry stakeholders in a different way. In particular, producers and workers, who are the most vulnerable stakeholders in the chain, risk seeing their current socio-economic situation deteriorate further, especially as they do not have the financial, human and technical capacities to adapt to such changes (especially for those who rely on coffee as their main source of income and liquidity).²²⁰

²¹¹ Climate Institute, A Brewing Storm, 2016

²¹² Coffee, barometer, 2018

²¹³ Earth Institute, Evaluating impacts of climate change on coffee, 2015

²¹⁴ Earth Institute, Evaluating impacts of climate change on coffee, 2015 and Coffee, barometer, 2018

²¹⁵ ICO, 75th-review-studies-climate-change, 2017

²¹⁶ Climate Institute, A Brewing Storm, 2016

²¹⁷ Climate Institute, A Brewing Storm, 2016

²¹⁸ coffee, barometer, 2018

²¹⁹ AJAR, Impact Climate Change Ethiopian Coffee, 2017

²²⁰ Climate Institute, A Brewing Storm, 2016

These shocks could also amplify the environmental damage associated with coffee production, particularly in terms of deforestation and loss of biodiversity, with major risks identified for the coming years. In fact, the existing prospective studies foresee that 60% of the terrains that will be adapted to coffee culture in 2050 are at present still forest areas sheltering particularly fragile and complex ecosystems.²²¹

Given the current trends, one of the strategies could be to accelerate the modernisation of farms (as in Brazil), with significant environmental impacts due to the increased use of synthetic inputs.²²²

In the longer term, climate change could even lead to the extinction of Ethiopian forest coffees, depriving the industry of a very rich genetic resource when it is likely to need it most.²²³

In conclusion, the main upheavals related to climate change which all stakeholders in the sector will need to adapt by 2050 can be summarised as follows²²⁴:

- An increasingly weak and irregular supply:²²⁵
 - *Decrease in cultivation surfaces, lower yields, more and more frequent pests and diseases, extreme weather events.*
- Lower quality of life (in the broader sense):²²⁶
 - *Changes in climatic conditions degrade the harvested coffee, for example with smaller grains at the lowest altitudes and overly fast growth that prevents the development of organoleptic qualities. At the same time, the usage of improved varieties and the replacement of Arabica coffee with Robusta, which is already seen in some areas, may also lead to an overall deterioration in quality.*
- Increasingly volatile prices with higher and higher peaks:²²⁷
 - *The discordance between supply and demand will probably lead to a continual rise in prices with high volatility and unrivalled peaks.*

1.5. Faced with rising stakes, alternative models have been developed (fair trade, organic & 'sustainable' labels)

In the coffee sector, the main social and/or environmental specifications (or standards) are organic farming, fair trade (the main one being the system run by Fairtrade International) and 'sustainable' labels developed by Rainforest Alliance and UTZ Certified (who merged in 2018)²²⁸. There are also internal private standards set by companies, such as the 4C Code of Conduct, Nespresso's AAA programme or Starbucks' C.A.F.E. Practices²²⁹.

²²¹ Coffee, barometer, 2018

²²² ICO, 75th-review-studies-climate-change, 2017

²²³ Climate Institute, A Brewing Storm, 2016

²²⁴ Climate Institute, A Brewing Storm, 2016

²²⁵ CJAR, Projected Shifts in Coffea Arabica Suitability, 2015

²²⁶ AJAR, Impact Climate Change Ethiopian Coffee, 2017 and Climate Institute, A Brewing Storm, 2016

²²⁷ Earth Institute, Evaluating impacts of climate change on coffee, 2015

²²⁸ In June 2017, Rainforest Alliance and UTZ Certified announced their merger under the name Rainforest Alliance. A new certification programme is in the process of being developed, notably open to public consultation, with a planned completion date of 2019 (<https://www.rainforest-alliance.org/faqs/rainforest-utz-merger#new-program>, accessed online on 4 June 2018).

²²⁹ Hivos 2018

1.5.1. Evolution of certifications in the global market for coffee consumption

In response to the social and environmental challenges of the coffee sector, a number of NGO alternative sector initiatives emerged, first on a small scale in the 1960s and then on a larger scale in the 1980s²³⁰.

Schematically, certifications can be characterised according to the criteria listed below in the table:

Mandatory/progress criteria	Conventional sector	Sustainable sector	Fair trade sector
Environmental			
Reduction of environmental impacts	X	✓	✓
Prohibition of dangerous products (at the very least, those listed by the WHO)	X	✓	✓
Protection of biodiversity	X	✓	✓
Social			
Compliance with the fundamental conventions of the ILO	X	✓	✓
Non-discrimination (convention no. 111 of the ILO)	X	✓	✓
Accessibility to marginalised workers and stakeholders	X	✓	✓
Economic			
Fair price/Fair remuneration for workers	X	X	✓
Premium for quality	X	✓	X
Premium for group projects	X	X	✓
Easier access to financing/Pre-financing	X	X	✓
Organisation of the chain			
Document traceability	X	✓	✓
Physical traceability	Partial	Partial	✓
Sustainable commitment of buyers	X	X	✓
Development of skills/capabilities			
Technical assistance and training for producers	X	✓	✓
Existence of a formal, collective structure and support for its development	X	X	✓
Democracy, participation and transparency in producers' organisations	X	X	✓
Creation of autonomous networks and local development processes	X	X	✓
Consumer awareness on international trade issues	X	X	✓

Table 2. Comparison of conventional, sustainable and fair trade sectors. Source: BASIC

Consumer expectations are mainly concentrated in the so-called mature markets (Europe and North America account for more than 85% of sales), where the average purchasing power is higher²³¹. They have influenced the major brands of coffee, who now make use of several certification labels and/or have implemented their own internal sustainability programs²³².

²³⁰ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

²³¹ Calculations based on the demand for coffee certified by Ecobank and figures from the chart in section 1 regarding the global consumption of coffee in 2007 (130,000,000 bags or 7,800,000 tonnes) and 2011 (140,000,000 bags or 8,400,000 tonnes).

²³² Hivos, Coffee Barometre, 2018

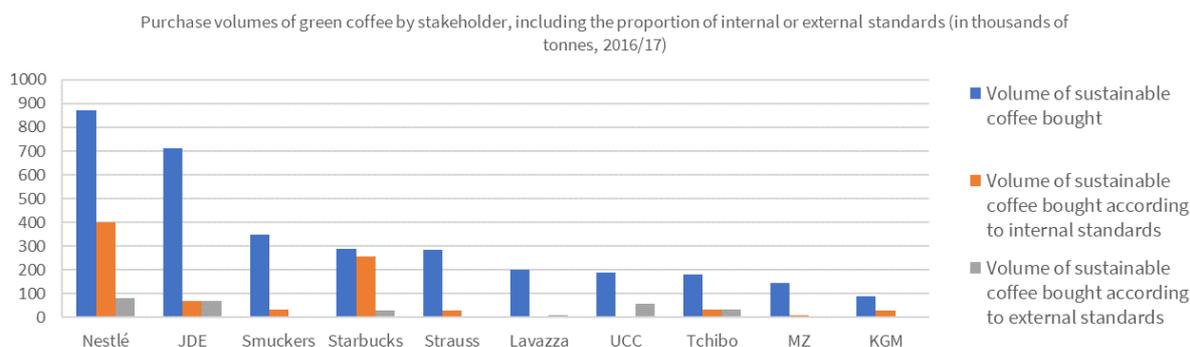


Figure 35. Comparison of purchase volumes of green coffee (total and certified). Source: BASIC, based on Hivos 2018 data

For example, almost all of the coffee purchased by Starbucks in 2017 was audited: 90% through its internal C.A.F.E. Practices programme (the details of which have not been made public; the last available estimations are from 2014) and about 7% by the fair trade certification Fairtrade²³³.

As for Nestlé, the company with the second highest level of involvement, 75% of its audited coffee was done so in accordance with the 4C Code of Conduct, 25% following its internal AAA standard developed with SAN (of which slightly over half is also certified by Rainforest). Only 1% was certified by Fairtrade.

Its direct competitor, JDE, has a lower audited supply level. At JDE, 50% of its procurement followed the 4C Code of Conduct in 2014. The other half was certified by UTZ or Rainforest (making JDE the largest customer of these two certifications).

Certifications in the fair trade sector

The 1960s saw the development of the first actions in opposition to existing agri-food sector models, with fair trade and organic farming movements at their head. Both were built on the premise of questioning conventional globalised agri-food chains²³⁴.

Fair trade is based on sector stakeholders' commitment to enabling producers and workers to earn a living from the work they do and invest collectively for the long term. In doing so, it met the expectations of consumers wanting to make a difference with their purchases.

More precisely, its basic principles are as follows:

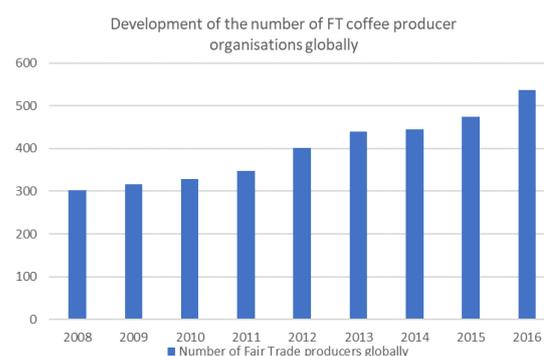
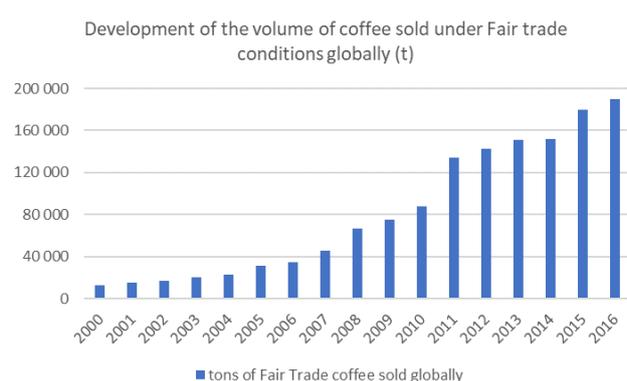
- By organising themselves collectively and democratically, producers and workers have stronger management and negotiation power. They can claim their rights, gain a better position in supply chains and be seen as credible interlocutors by other stakeholders. They can also develop long-term strategies to ensure a sustainable standard of living for their communities and to better protect the environment. This organisational dynamic goes beyond the local level. The coordination of producers and workers nationally and continentally via platforms and networks allows them to share knowledge and expertise, support and strengthen the capacities of member organisations in different countries and regions, and advocate with their governments and sectoral institutions to make their voices heard and defend their visions.
- A minimum price guarantee is implemented to act as a 'security net' for producers. It offers protection against the excessive volatility of raw material prices. It not only has a stabilising effect, but also stimulates the income of small farmers. Combined with longer-term contracts and pre-financing, it allows producers to plan and ensure the sustainability of their production.

²³³ Hivos, Coffee Barometre, 2014

²³⁴ B. Daviron and I. Vagneron, Les cafés dans la jungle des standards de durabilité environnementale et sociale, 2012

- The fair trade premium, the use of which is collectively decided by organisations of small producers and workers, can enable them to develop income-generating activities, improve their standard of living and reduce their vulnerability to poverty. While it is invested in productivity, quality, collective infrastructure or certification, the fair trade premium can allow farmers to obtain better market prices and to reduce their production costs, thereby increasing their available income.
- In return, producers who are members of fair trade organisations are committed to upholding the fundamental conventions of the ILO (International Labour Organization) and to reducing their impact on the environment through the adoption of good agricultural practices.
- Lastly, through their awareness and information campaigns, fair trade movements encourage consumers to be concerned about the origin of the products they buy and the social and environmental conditions in which they have been made. In this way, they aim to create consumer demand for greater transparency in the agricultural sectors.

From the start, fair trade has valued a bridging between consumer and producer, particularly based on the promotion of the farmer's work and product itself, as differentiated from standard products²³⁵. In 1988, coffee was the first product labelled by Max Havelaar as a fair trade product and widely sold in Holland, and then quickly in several Western European countries (France marketed the first packet of coffee sold with the label in 1993)²³⁶.



In 2018, the Fairtrade/Max Havelaar approach, pioneer of large-scale distribution of the fair trade certification, is the most developed in the coffee sector (in comparison to other types of products) with 537 organisations certified in 2016 (+78% since 2008) and 190,000 tonnes sold in 2016 (tripled since 2008 and a 15-fold increase since 2000).

In recent years, other complementary approaches have emerged, such as external SPP labels (originally initiated by CLAC Latin American producers), Bio Partenaire and Fair for Life (initiated by Ecocert), as well as internal approaches such as that of coffee roaster Lobodis (we have not found consolidated figures on approaches other than Fairtrade in the coffee sector).

Within the coffee sector, we have only found public information on the number of producer organisations certified by these external labels: 1 coffee plantation in India by Bio Partenaire; 18 producer organisations by Fair for Life (8 in Guatemala, 3 in Honduras, 3 in Peru, 1 in Ethiopia, 1 in Kenya and 2 in India); and 102 producer organisations by SPP (in Peru, Guatemala, El Salvador, Mexico, Bolivia, Colombia, Ethiopia, Indonesia, Nicaragua, DRC, India, Ecuador, Honduras). These data show that the Bio Partenaire and Fair for Life labels are, at present, much less developed than the Fairtrade label in the coffee sector. The SPP label covers a

²³⁵ B. Daviron and I. Vagneron, *Les cafés dans la jungle des standards de durabilité environnementale et sociale*, 2012

²³⁶ Lise Duval, *Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine*, 2007

greater number of producer organisations, especially in Latin America. The majority of these are also certified Fairtrade (which is explained by the origin of this label, historically created by the CLAC, and also a member of the FTI).

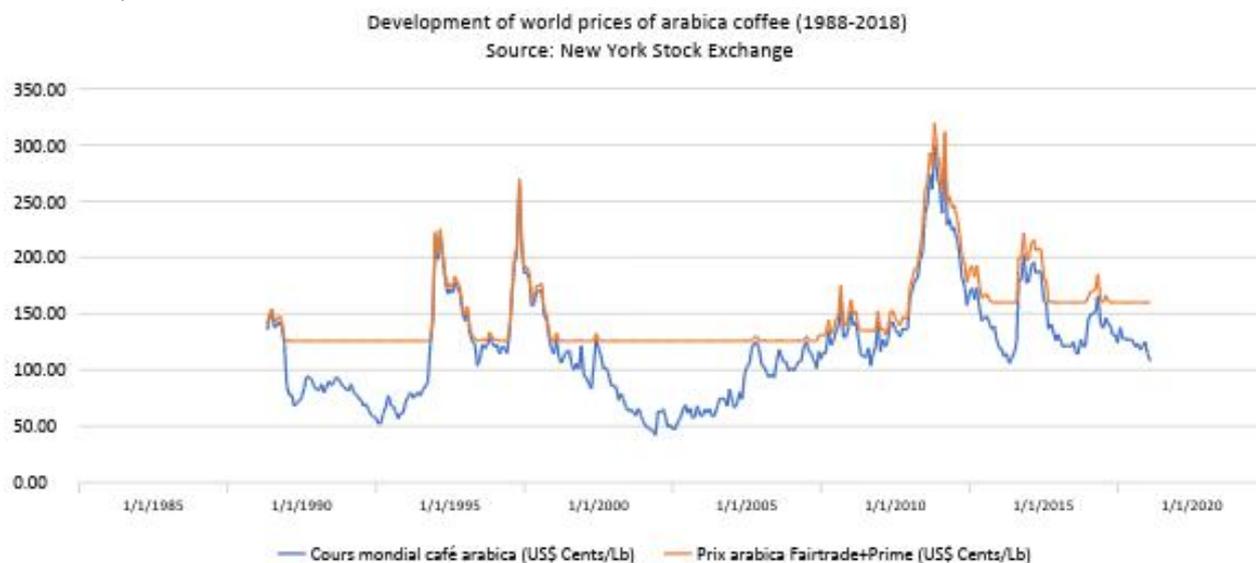


Figure 36. Comparison of Arabica prices and minimum price + Fairtrade premium. Source: BASIC, as defined in ICO & FTI data

The issues raised by fair trade approaches are more current than ever, as shown by the fluctuation of Arabica prices on the New York Stock Exchange. Rates fell to 1.07 dollars per pound in August 2018, their lowest levels since November 2013, and almost equivalent to the historically low prices of the early 1990s and early 2000s, taking into account subsequent inflation, particularly in producing countries.

The development premium, which is added to the minimum price, surpassed 50 million euros for the Fairtrade system in 2015 (according to data consolidated by FLO-CERT).

Certifications in the sustainability sector

In response to consumer expectations concerning ethics and sustainability, several other certification initiatives have been launched in partnership with industry leaders (UTZ Certified and Rainforest Alliance, etc.), making coffee one of the first agricultural products marketed in so-called "ethical" sectors²³⁷.

These approaches share several common principles with the fair trade labels:

- The reduction of environmental impact and the protection of biodiversity through the adoption of good agricultural practices
- Respect for the core conventions of the ILO (freedom of association, non-forced labour of children, non-discrimination, etc.)

They differ, however, from fair trade in their approach to economic issues: whilst they agree with the finding that coffee farmers are underpaid, they consider that increased productivity can allow producers to earn more. Therefore, they do not require regulation of prices nor strengthening of producers' bargaining power by their collective organisation (instead they provide payment of a non-systematic "quality bonus" which is 3 to 4 times lower than the fair trade premium).

These sustainability certifications are often used by large corporations²³⁸: by adopting the certification of a third-party NGO for its products, the company gains legitimacy with its customers, whilst outsourcing the risk

²³⁷ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007; Hivos 2018

²³⁸ B. Daviron and I. Vagneron, Les cafés dans la jungle des standards de durabilité environnementale et sociale, 2012

and investing in new profitable niche markets²³⁹. Recourse to several certifications, both sustainable and fair trade, thus allows manufacturers within the sector to respond to two challenges: constructing a respectable image for consumers whilst continuing to be supplied with large volumes, without interruption, by having access to several potentially interchangeable suppliers²⁴⁰.

In terms of producing countries, 4C and UTZ certifications have a distribution profile that is very close to the global average for the sector, which can be explained by the fact that these certifications are mainly supported by the large corporations within the sector. The Rainforest Alliance certification has a slightly different distribution, with a larger share of the volume produced on the African continent. In contrast, fair trade and organic certifications present a very different profile; the share of production certified in the two main exporting countries (Brazil and Vietnam) is very weak.

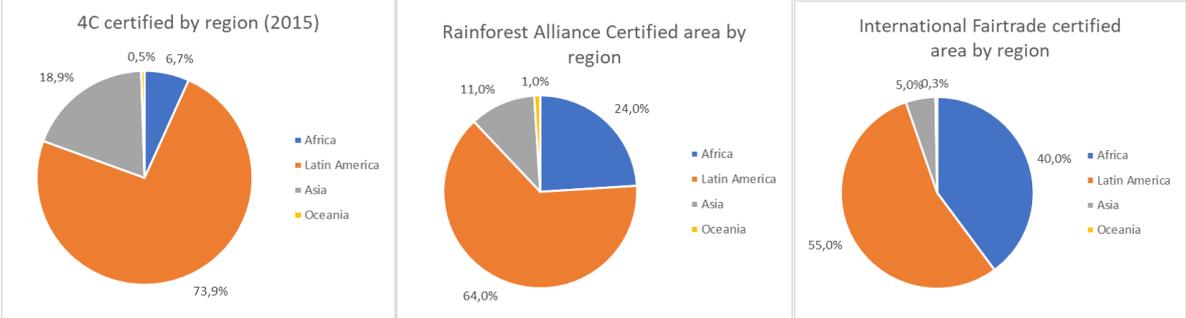


Figure 37. Origin of productions certified by Fairtrade, Rainforest Alliance and 4C. Source: IISD (2017)

It is important to note that the entirety of this production (sustainable or fair trade) is not sold under the labels indicated: a part of the volume produced is marketed as conventional coffee, which explains the difference between the volume produced and the volume sold under the certifications (see graph below).

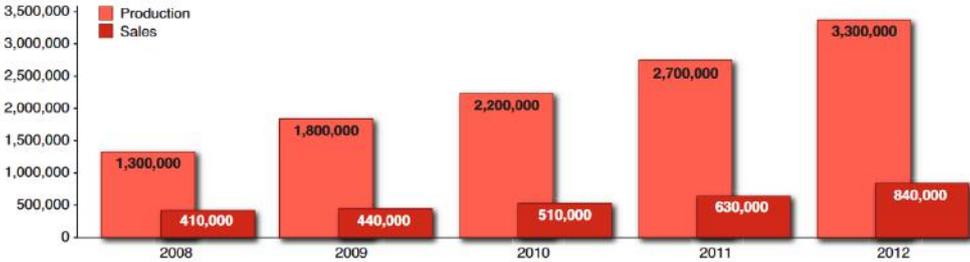


Figure 38. Estimations comparing the volumes produced under certification and the volumes sold under the conditions of the certifications (AAA, 4C, C.A.F.E. Practices, Fairtrade, Organic, Rainforest Alliance and UTZ Certified). Source: IISD (2014)

For example, within fair trade, around 19% of production certified by Fairtrade/Max Havelaar is certified with the label, an additional 9% is bought in accordance with their specifications but not certified with the label, and 72% is sold on the conventional market²⁴¹. The same applies to the other certifications (see table below).

Roasters' internal procedures

In addition to the aforementioned steps, large roasters also have several years of codes of conduct and internal specifications that are intended to improve their purchasing and procurement practices. The most important are the 4C approach developed in collaboration with the main manufacturers in the sector, as well as the

²³⁹ B. Daviron and I. Vagneron, Les cafés dans la jungle des standards de durabilité environnementale et sociale, 2012
²⁴⁰ B. Daviron and I. Vagneron, Les cafés dans la jungle des standards de durabilité environnementale et sociale, 2012
²⁴¹ In-house document at Max Havelaar France

following programmes: Nespresso AAA, Starbucks' C.A.F.E. Practices and Lavazza's 'Voix de la Terre' (Voice of the Earth)²⁴².

The first objective of these internal procedures is to ensure the required quality of coffee at acceptable costs, through improved yields by producers. These technical requirements are often supplemented by criteria adhering to ILO conventions and the adoption of good agricultural practices, which are inspired by those of the 'sustainable' labels and fair trade²⁴³.

These procedures differ from previous certifications, in terms of their approaches to risk management and continuous improvement, with a lower requirement of mandatory criteria, and the absence of external audits of their commitments (except in the case of Starbucks).

The table below gives a general overview of the relative weights of the different approaches at global level.

	Approaches	Production (in tonnes)	Number of producers	Market share of global production	Market share of global exports	Sales (in tonnes)	Market share of total sales
External approaches	Fairtrade	430,000	83	5%	6%	128,000	2%
	Organic	248,767		3%	4%	133,163	2%
	Rainforest Alliance	265,565	218,610	3%	4%	129,846	2%
	UTZ Certified	715,648	188,627	9%	11%	188,096	3%
Internal approaches	4C Association	1,782,052	504,820	22%	26%	152,708	2%
	AAA	247,114	75,000	3%	4%	-	-
	C.A.F.E. Practices	457,339		6%	7%	222,550	3%
	Total, adjusted for multiple certifications	3,300,000		40%	49%	840,000	12%

Table 3. Data on the volumes produced and sold, according to certification. Source: BASIC, based on IISD (2014) data.

²⁴² Hivos, Coffee Barometre, 2018

²⁴³ Hivos, Coffee Barometre, 2018

Fair trade certifications in France

In keeping with international consumption trends, the French are buying more and more products labelled as fair trade²⁴⁴.

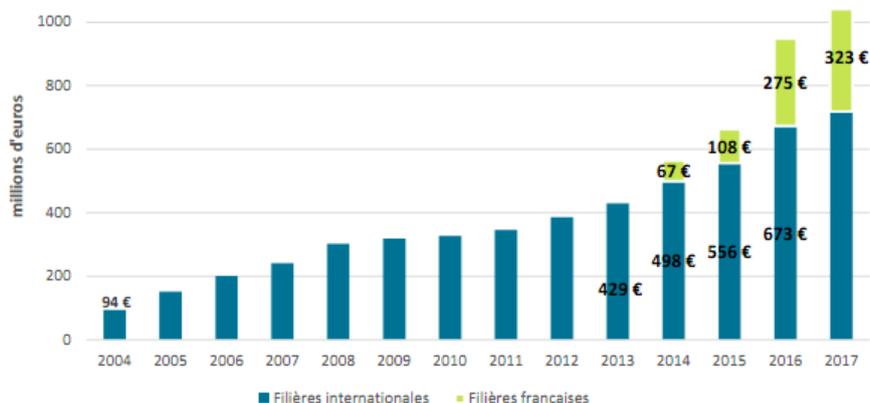


Figure 39. Developments in sales of fair trade products between 2004 and 2017. Source: CEF (2017)

In France, sales of these products reached a turnover of 1 billion euros in 2017, representing a 10% increase compared with the previous year (which drops to 7% if we only consider products from international sectors)²⁴⁵.

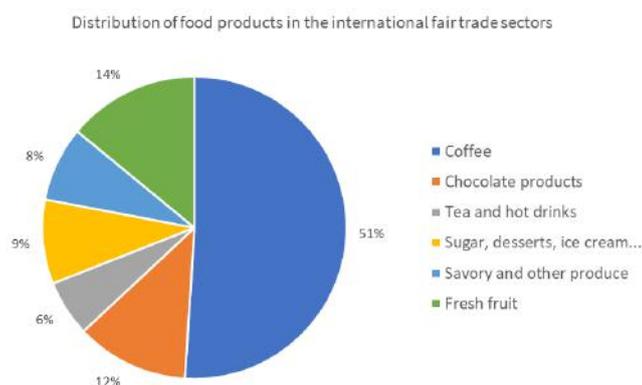


Figure 40. Breakdown by food product, of sales of products from international fair trade sectors. Source: BASIC, according to CEF (2017) data

Of this total, coffee was the best-selling fair trade product in France, with 51% of sales in value of international sectors in 2017²⁴⁶. Four fair trade labels are seen on the coffee products marketed in France: 'Fairtrade/Max Havelaar' (the principal), 'Fair for Life' (used by Ecocert, the leader in organic certification), the 'Símbolo de los Pequeños Productores [Small Producers Symbol]' (SPP), and World Fair Trade Organization (WFTO). In total,

²⁴⁴ "Following the law in 2014 on a social and solidarity-based economy, fair trade is now a legal definition. This recognition has contributed to the credibility of fair trade, revitalising sales and enabling the development of fair trade business channels capitalising on "Origine France". The main principles of fair trade as defined by law are: fair and profitable prices for the producers, a long-term commercial partnership, the consolidation of producers' organisations and democratic governance, the payment of an extra amount to fund projects and collective initiatives, the transparency and tracking of supply chains, and consumer awareness of socially and environmentally sustainable production. Commerce Équitable France, *op. cit.*

²⁴⁵ Commerce Équitable France, *Les chiffres clefs du commerce équitable en France, 2017*

²⁴⁶ Commerce Équitable France, *op. cit.*

there are 745 coffee products labelled in France, of which 532 carry the double certification, fair trade, and organic²⁴⁷.

The Max Havelaar France label alone represents 654 coffee products, of which 442 have the double certification, fair trade, and organic. Then 72 products with the SPP, all double-certified, and lastly the 14 WTFO products, of which 13 have double certification²⁴⁸. It should be noted that outside of home, some of the coffees sold by Starbucks are labelled as Fairtrade²⁴⁹. In terms of revenue, coffee labelled as fair trade has a turnover of nearly 300 million euros, of which around 235 million comes from the double-certified fair trade and organic sector²⁵⁰. The main countries that supply the certified fair trade coffee sold in France are Peru, Mexico, Guatemala, Colombia, Ethiopia, and Indonesia.

Sustainable Certifications

"Sustainable" certifications are also present in the French market, although very little consolidated information on them exists. The Rainforest Alliance label is for example present in major supermarkets on certain Lavazza formats²⁵¹. Outside the home, the coffee sold in McCafés and McDonald's bears the certification label,²⁵² as do certain products available in Selecta Vending machines²⁵³. Regarding Nespresso capsules, 40% of the coffee used is certified Rainforest Alliance²⁵⁴. As for the UTZ Certified label, in France it works with JDE, Lavazza²⁵⁵ and Café Royal, including on a new range of cold drinks²⁵⁶.

2. Analysis of three specific value chains and the changes resulting from alternative approaches

In order to understand the extent to which alternative approaches allow a response to the social and environmental challenges faced by the coffee sector, we have analysed the situation of 3 value chains in greater detail: Peru > France, Colombia > France, Ethiopia > France. This allowed a comparison of the different impacts on conventional sectors; "sustainable" sectors (UTZ and Rainforest Alliance, now merged); and fair trade sectors (in relation, or not, to organic farming).

The choice of the 3 producing countries is linked to the place they have in the French market, and the significant and long-standing implementation of alternative approaches, allowing us to specify their respective impacts.

²⁴⁷ Commerce Équitable France internal data.

²⁴⁸ Commerce Équitable France internal data.

²⁴⁹ Lentschner K., "Starbucks se convertir au café équitable", 2 March 2010, accessed online on 17 June 2018 <http://www.lefigaro.fr/societes/2010/03/02/04015-20100302ARTFIG00010-starbucks-se-convertit-au-cafe-equitable.php>

²⁵⁰ It should be noted that consumer sales figures are mainly compiled from distributor margins (Commerce Équitable France internal data).

²⁵¹ Le Monde, "Dans la jungle des labels", 6 February 2007, accessed online on 17 June 2018 https://abonnes.lemonde.fr/a-la-une/article/2007/02/06/dans-la-jungle-des-labels_864179_3208.html; Rainforest Alliance website <https://www.rainforest-alliance.org/lang/fr/shopthefrog?country=100&category=178&subcategory=185>

²⁵² McCafé and McDonald's coffee is Jacques Vabre coffee (SOURCE)

²⁵³ Rainforest Alliance website <https://www.rainforest-alliance.org/lang/fr/shopthefrog?country=100&category=178&subcategory=185>

²⁵⁴ Rainforest Alliance website <https://www.rainforest-alliance.org/find-certified/nestle>

²⁵⁵ UTZ, "Faire la différence au quotidien. C'est mieux.", 2017

²⁵⁶ UTZ Certified website <https://utz.org/better-business-hub/marketing-sustainable-products/new-on-the-shelves-5/>

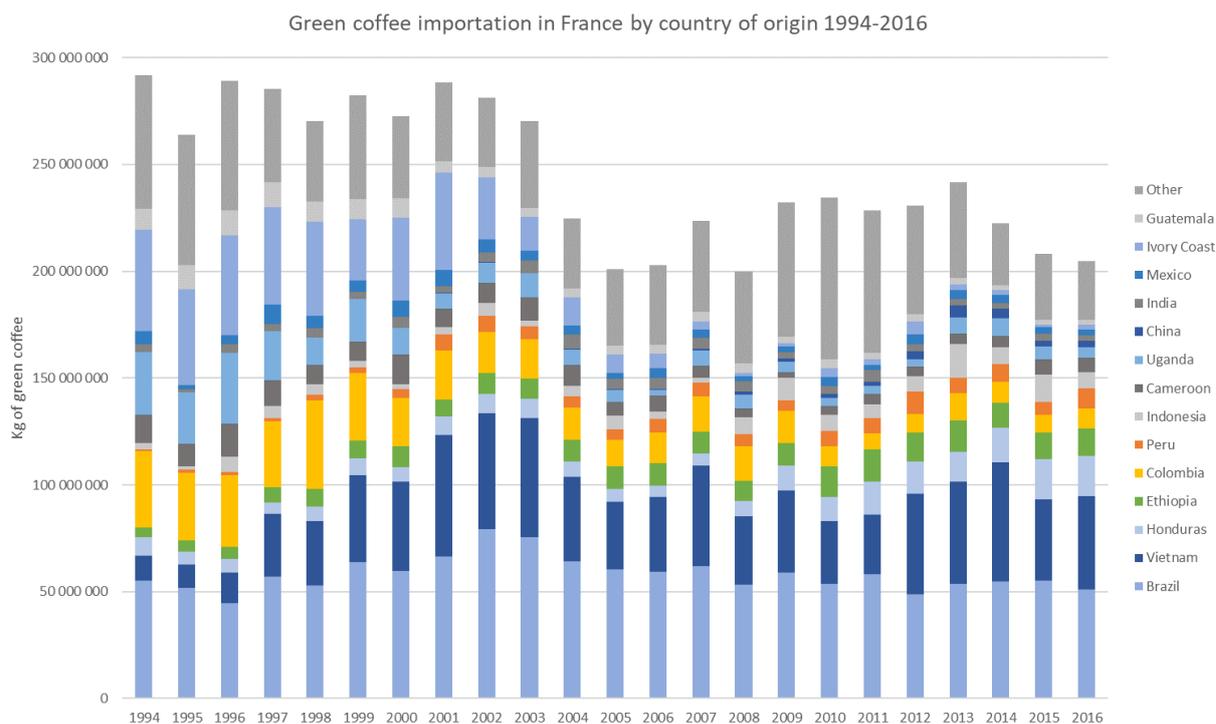


Figure 41. Distribution of green coffee imports in France by country of origin.
Source: BASIC, according to ComTrade data

Ethiopia is the fourth producing country of green coffee imported to France, with volumes of approximately 12,700 tonnes in 2016, compared with only 5,150 tonnes in 1994²⁵⁷. As the historic cradle of Arabica, the country produces coffees with particular aromas and quality that is recognised worldwide; these are valued in two different ways on the French market: some of its coffees classed as 'speciality' are sold at high prices on the markets for upmarket/niche products (in particular coffees designated as Sidamo, Harar and Yirgacheffe in origin), whereas some others are destined to be mixed with coffees of other origins in standard coffee products²⁵⁸.

Colombia is in fifth place among the producing countries of directly imported coffee in France (9,592 tonnes in 2016), a significant decline over the past 20 years (for comparison 36,000 tonnes were imported in 1994). Esteemed for the quality and aromas of its coffee, Colombia has succeeded in developing and stamping its "national brand" on the international market. So much so that its coffee sells at a higher price than other Arabicas. Given its price and reputation, Colombian coffee is a high-quality product that is sold on the French market primarily as single-origin, 100% Arabica, but it may also, more rarely, be used in more standard coffee blends²⁵⁹.

Peru is the sixth producing country of green coffee imported to France, almost in joint place with Colombia (but was only the 15th country of origin for imports in 1994)²⁶⁰. Its coffee has the advantage of being of good quality and cheaper than its direct competitors, particularly Colombia. Therefore, in France it is mainly sold in

²⁵⁷ Note that this concerns only the importation of green coffee in France, equal to about 50% of the total volume of coffee consumed in France. The remaining 50% is imported as roasted coffee whose origin corresponds to that of the roasting country and not to the country of production.

²⁵⁸ Interview with a specialist in speciality coffees and the French coffee market

²⁵⁹ Interview with a female harvester of speciality coffee

²⁶⁰ Note that this concerns only the importation of green coffee in France, equal to about 50% of the total volume of coffee consumed in France. The remaining 50% is imported as roasted coffee whose origin corresponds to that of the roasting country and not to the country of production.

coffee blends of different origins, in which the aromas of the Peruvian Arabica can complement the body given by coffees of other origins²⁶¹.

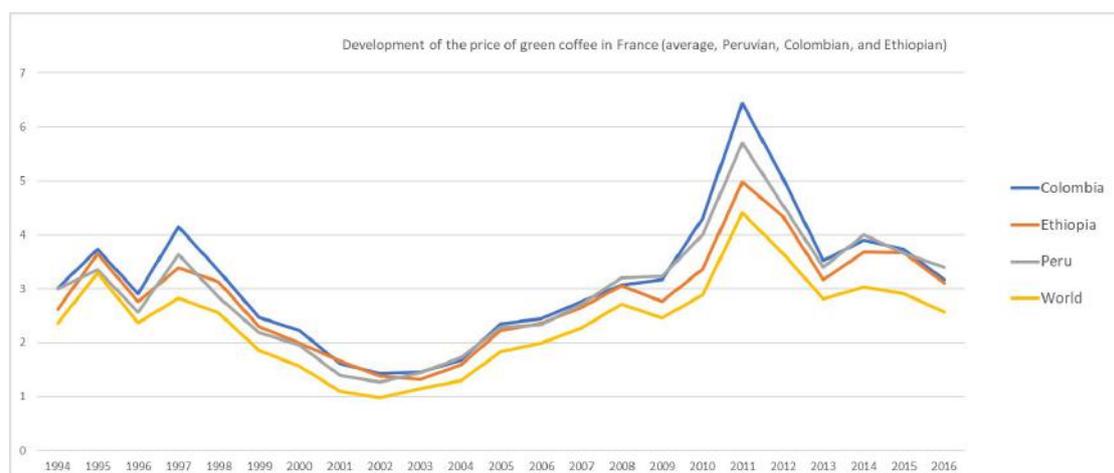


Figure 42. Development of import price of green coffee in France (average, Peruvian, Colombian, and Ethiopian).
Source: BASIC, according to ComTrade data

In terms of price, the analysis of France's importation figures shows that the 3 origins are more valued than the average green coffee imported into France, the strongest differential belonging to Colombia (around + 0.50 USD/kg compared with the average price of all other so-called "World" origins combined), closely followed by Peru and Ethiopia. The differentials of these three countries have been increasing over the last 20 years.

2.1. Analysis of the Peru to France value chain

2.1.1. *is a country geared towards export, which has succeeded in enhancing the value of its quality potential*

In 2017, Peru was the world's 10th biggest coffee producer²⁶². Peru exclusively produces Arabica, with a total of 228,000 tonnes in 2017, over an area of more than 380,000 hectares.²⁶³

The sector involves around 2 million people. From producers who draw all or part of their revenue from coffee production (about 224,000 families), to workers, small-scale intermediaries, cooperatives, trading groups, processing plant, etc.²⁶⁴

²⁶¹ Interview with a female harvester of speciality coffee

²⁶² USDA, 2018

²⁶³ FAOSTAT

²⁶⁴ USDA-IICA, Trade opportunities, coffee chain Peru USA, 2016



Figure 43: Areas of altitude and areas of coffee production in Peru

Peruvian coffee farms are situated on the slopes of the Andes, which offer particularly good conditions for the cultivation of Arabica (around 75% of the coffee is cultivated at an altitude of between 1000 and 1800 metres)²⁶⁵. The coffee plots are small in size, fairly enclosed and on steep terrain, which makes coffee cultivation difficult to mechanise and does not allow producers to easily lower their production cost (in comparison with countries such as Brazil).²⁶⁶

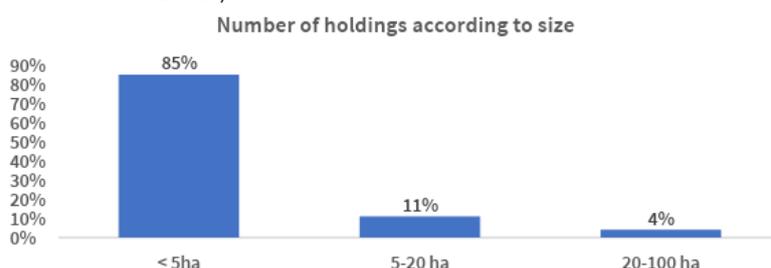


Figure 44: Number of farms according to size (Source: BASIC according to SECO 2018)

Coffee has been cultivated in Peru since the beginning of the 18th century, but for a long time, it did not have a major role in the country's economy²⁶⁷, particularly due to the lack of available workforce²⁶⁸. Its history has strong connections with the first coffee cooperatives²⁶⁹. These emerged with the onset of regulation of the global sector by the ICA, which then provided an effective framework for price stability²⁷⁰. Their objective was to take back direct control of product marketing from the traders, who only put back 30% of the value of exports²⁷¹. At this time, the government encouraged the creation of cooperatives to support producers in exporting their coffee²⁷², and it supported them by allocating them quotas (to the detriment of private exporters)²⁷³ and through the creation of an agrarian bank to ensure their financing²⁷⁴.

²⁶⁵ USDA, Coffee Report Peru, 2017

²⁶⁶ USDA, Coffee Report Peru, 2017

²⁶⁷ NRI, Coffee Evaluation Impact Fairtrade, 2016

²⁶⁸ Allier D. 2011

²⁶⁹ The first Maranura cooperative was founded in 1961 (D. Allier 2011)

²⁷⁰ Allier D. 2011

²⁷¹ Allier D. 2011

²⁷² Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

²⁷³ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

²⁷⁴ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

Like other producing countries, Peru was deeply affected by the abandonment of the ICA in 1989, which coincided with the liberalisation of the economy and the implementation of structural adjustment plans by the World Bank²⁷⁵.

It was the start of a crisis period for the cooperatives: public regulation mechanisms were abandoned, the agrarian bank was dissolved²⁷⁶ and the liberalisation of the economy was pursued by Fujimori's governments²⁷⁷. The cooperative and umbrella organisations, until then supported by the State, bore the brunt of the change in direction by the government. They also had to face the rise of the drug trade in the production zones. Many producers turned to the more profitable coca cultivation (in 1992, 129,000 hectares of coca were cultivated in the country, that is as much as rice or maize)²⁷⁸. In this now liberalised context, several cooperatives disappeared²⁷⁹, and those which survived decided to reorganise around a new entrepreneurial vision, becoming cooperatives of services for the benefit of producers who owned their land²⁸⁰.

In contrast, the period of liberalisation which followed the end of the ICA was also the take-off period for coffee in Peru. The new economic context encouraged private actors to invest in the sector, and thus seize the new opportunities offered by coffee for export.

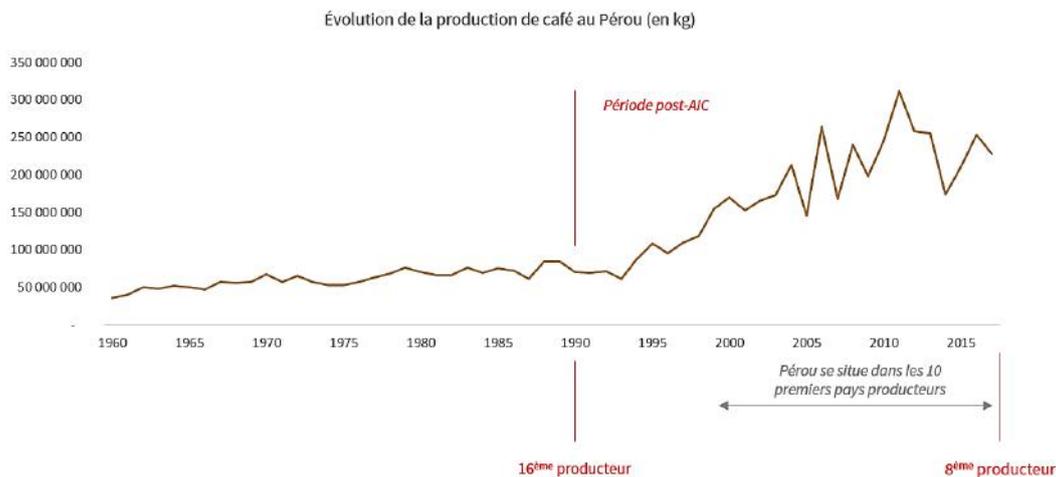


Figure 45 Growth of coffee production in Peru, 1960-2017 (Source: BASIC according to USDA, 2018)

The 2000s marked a turning point in coffee production: the actors decided to strategically position themselves in regards to quality, in order to not only differentiate themselves from other producing countries but also to respond to the emerging consumption trends (Peru's very fragmented production makes it difficult for the country to be competitive on the standard coffee market)²⁸¹.

Since then, Peru has maintained a focused strategy with respect to the production of quality coffee for export. It is renowned for its organoleptics and relatively favourable prices on the global markets (but it remains less expensive than Colombian or Ethiopian coffee, two of the origins most valued by buyers).²⁸²

²⁷⁵ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

²⁷⁶ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

²⁷⁷ D. Allier, Dynamique du café au Pérou et marché internationaux, 2011

²⁷⁸ D. Allier 2011

²⁷⁹ D. Allier 2011

²⁸⁰ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

²⁸¹ D. Allier, Dynamique du café au Pérou et marché internationaux, 2011

²⁸² ICO, 2018

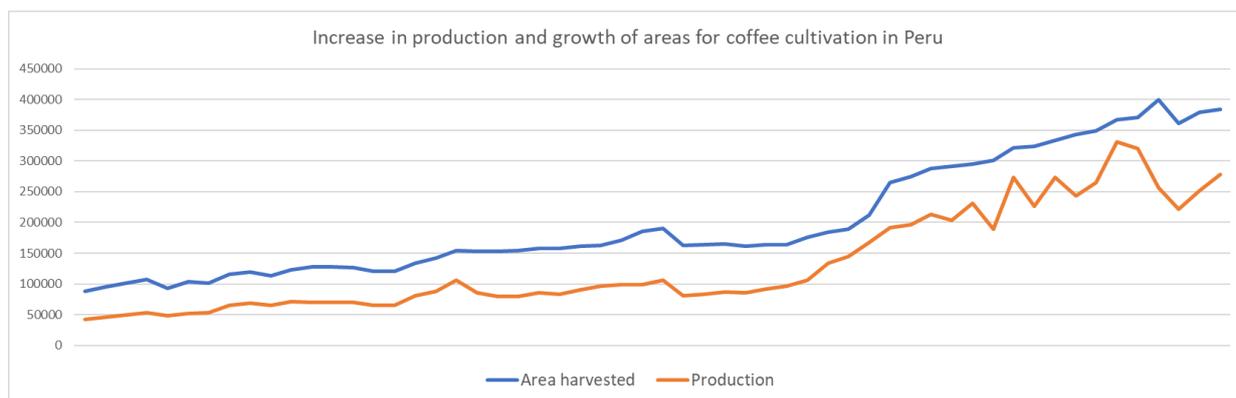


Figure 46: Evolution of production and of the coffee surface area of Peru, 1961-2016 (Source: BASIC per FAOStat)

With neither a true national coffee policy nor the support of producers²⁸³, production growth occurs mainly through the expansion of surface area (the few public actions that sought to improve productivity were too weak and the results were criticised)²⁸⁴.

Domestically, consumption remains very low (650 g per person per year). However, this market is growing and, like current consumer trends, it is fragmented: on the one hand, mass consumption of soluble coffee (75%) dominated by sale in small neighbourhood shops (60% of sales); and on the other hand, the emergence of coffee shops in Lima and in large Peruvian towns that promote quality Peruvian coffee.

2.1.2. Some conventional Peruvian coffee channels to France are very unequal, to the detriment of producers and for the benefit of players further down the supply chain.

In Peru, some channels are organised mostly by private exporters, so the producers are the adjustment factor.

The large majority of volume produced is destined for export, and only 30% of producers are members of organisations (cooperatives or associations)²⁸⁵. The main configuration of channels is shown below:

²⁸³ D. Allier, Dynamique du café au Pérou et marché internationaux, 2011

²⁸⁴ D. Allier, Dynamique du café au Pérou et marché internationaux, 2011

²⁸⁵ USDA-IICA, Trade opp coffee chain Peru USA, 2016

Green coffee exports (95% of volumes produced in Peru)



Figure 47. Diagram of Peruvian green coffee export channels (95% of volume produced). Source: BASIC

70% of isolated and non-organised Peruvian producers grow coffee on small agroforestry plots. Once the ripened cherries are harvested from the coffee tree, they often complete the first drying stage themselves. These beans are then collected by intermediaries - les *acopiadores* - up to the second transformation and collection points (*centro de acopio*). In these collection points, a first quality control process takes place, seeking to evaluate size, appearance, density and moisture content.²⁸⁶ Finally, the coffee is taken to the warehouses of green coffee exporting companies.

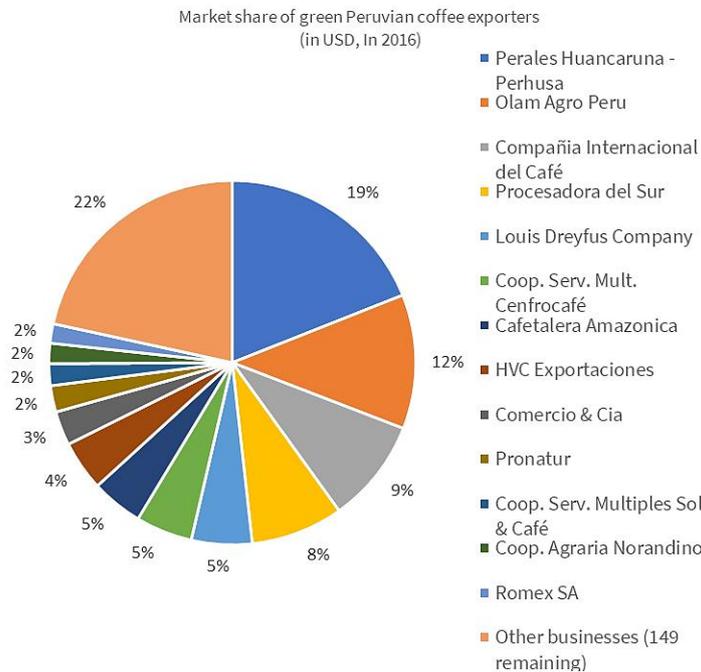


Figure 48. Market share of Peruvian green coffee exporters (value USD, in 2016). Source: BASIC, per data from SECO 2017

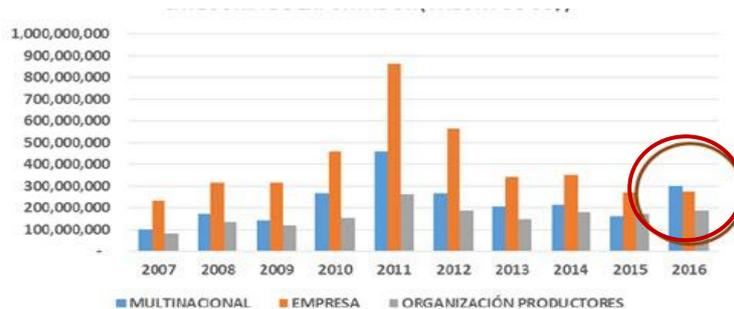


Figure 49. Share of exports by type of actor: multinationals, businesses and producer organisations (value FOB in USD). Source: Sintercafé 2017

In Peru, export activity in recent years has condensed: multinational traders grew their share by 70% between 2015 and 2016²⁸⁷ and the five top exporting companies - among which can be found the leading coffee traders: Volcafe through its subsidiary company Huancaruna, Olam and Louis Dreyfus - now represent 54% of value and 56% of exported volumes²⁸⁸.

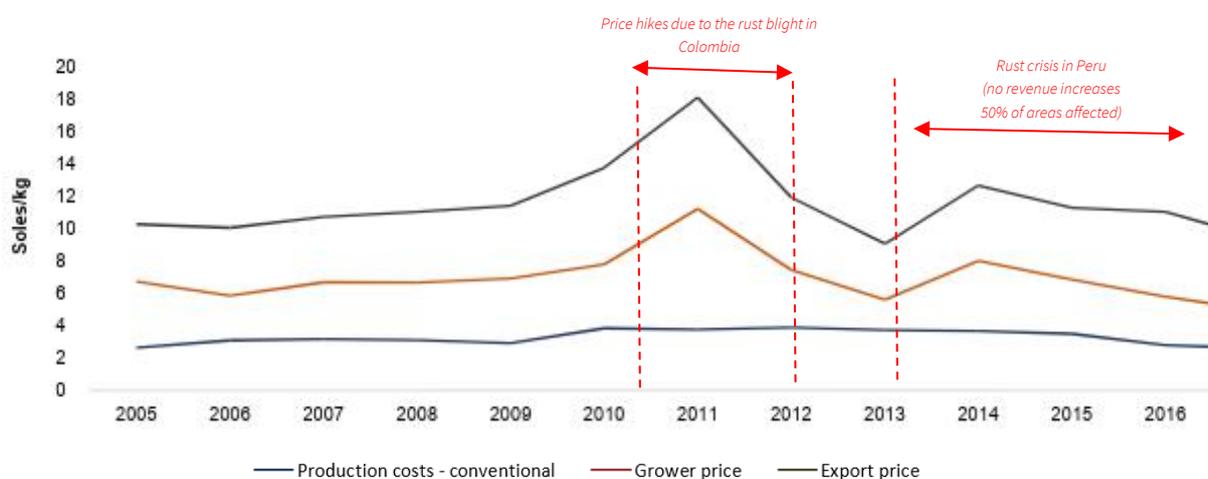


Figure 50. Evolution of the drop in coffee value until FOB in Peru. Source: BASIC.

In terms of value share in Peru, the margin obtained by producers in 2017 (i.e. the difference between their sale price and their production costs) is of the same order of magnitude as at the time of the coffee pricing crisis in 2013, after having experienced a period of upturn between 2005 and 2012.

Beyond increased production costs due to labour shortages (thus the increased costs), this development is explained by the gross margin increase by exporters, the producers earning little more than 52% of the export price in 2017, versus 56% in 2003 (and up to 62% in 2011). This trend is linked to the growing importance of multinationals in Peruvian coffee exports, particularly during recent years, their size and their concentration serving to reinforce the imbalance of power in the channels, with a direct impact on the price paid to producers, which decreased 28% between 2015 and 2017 while the export price diminished by less than 17%. In general, producers stand out as the adjustment variable of other sector players: they endure the price variations linked to more and more prevalent climate hazards along with rising production costs.

²⁸⁷ Sintercafé, Coffee Production Outlook and Growth, 2017

²⁸⁸ SECO 2017

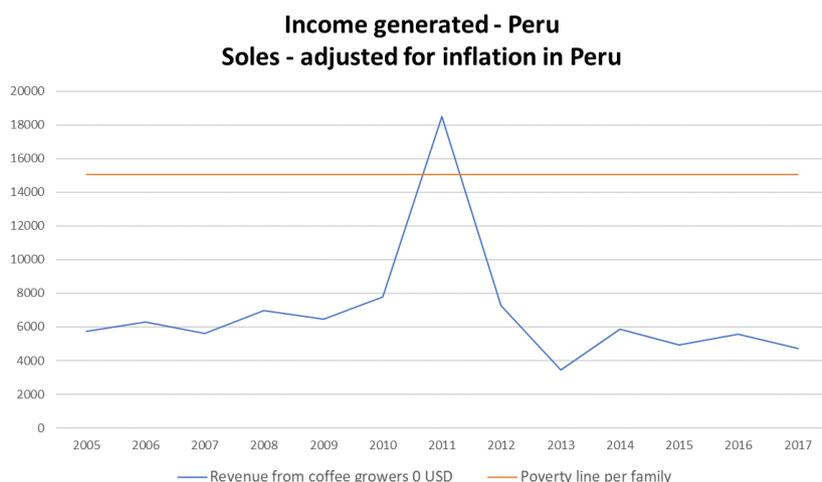


Figure 51. Revenue development of Peruvian coffee farmers and comparison with the poverty threshold. Source: BASIC.

As illustrated below, the low margins earned by Peruvian coffee producers translate into incomes that are significantly lower than the poverty threshold over the past 12 years (with the notable exception of 2011, when producers had momentarily surpassed this level due to the upsurge in global prices). Coffee farmers' circumstances seem to be even more problematic since the rust blight crisis in 2013, their income barely reaching a third of the poverty threshold (versus more than 40% before 2011).

In France, Peruvian coffee is essentially integrated into blends so the value depends brand format and positioning.

Peruvian coffee is imported to France by the same national or multinational businesses described in the general specification in part 1 of the global analysis (the investigation carried out did not allow for identification of distinctive characteristics of the supply chains from Peru).

For coffee roasters who market in France, Peruvian coffee has the advantage of being of good quality and less expensive than the direct competitors, in particular Colombian coffee. It is thus an essential part of products blending different origins - in particular standardised coffee products such as L'Or by JDE or Carte Noire by Lavazza - where the flavours of Peruvian Arabica supplement the body given by coffee of different origins²⁸⁹.

We did not find public statistics on the price of the products sold in supermarket retail, so we have produced end of July 2018 price data in nine supermarkets of six different brands, in Paris and elsewhere in France.



Figure 52. Consumer pricing data for coffee blends sold in France. Source: BASIC.

The data indicate the consumer pricing of blends containing (a priori) Peruvian coffee essentially varies according to:

- the format of the sale, the average price per kilogram of flexible pods being 30% to 65% higher than 250 g packets of equivalent brands; with respect to the capsules, they are four times more

²⁸⁹ Interview with a female harvester of speciality coffee

expensive per kilogram than the 250 g packets. These differences illustrate the increased capability of brands to create (much) more value thanks to the development of new formats.

- market positioning, the brands of distributors being sold for 15% to 30% less per kilogramme than the equivalent national or international big brand products (with the same differentials between the packets/flexible pods/capsule formats).

Furthermore, in-store surveys allowed the identification of "single origin Peruvian" coffee marketed in 250 g packets by some private labels, but none by the national brands. Their price level - €13.15 per kilogram - is higher than the coffee blends sold by these same private labels. According to our surveys, the latter seems to deploy a strategy of differentiation and movement towards the high-end range, via the creation of origin coffees which have been historically initiated by fair trade brands.

To go further, we have produced some estimates of the value share of blends containing Peruvian coffee, based on information on logistical costs and consolidated processing costs of different French players (merchants and coffee roasters).

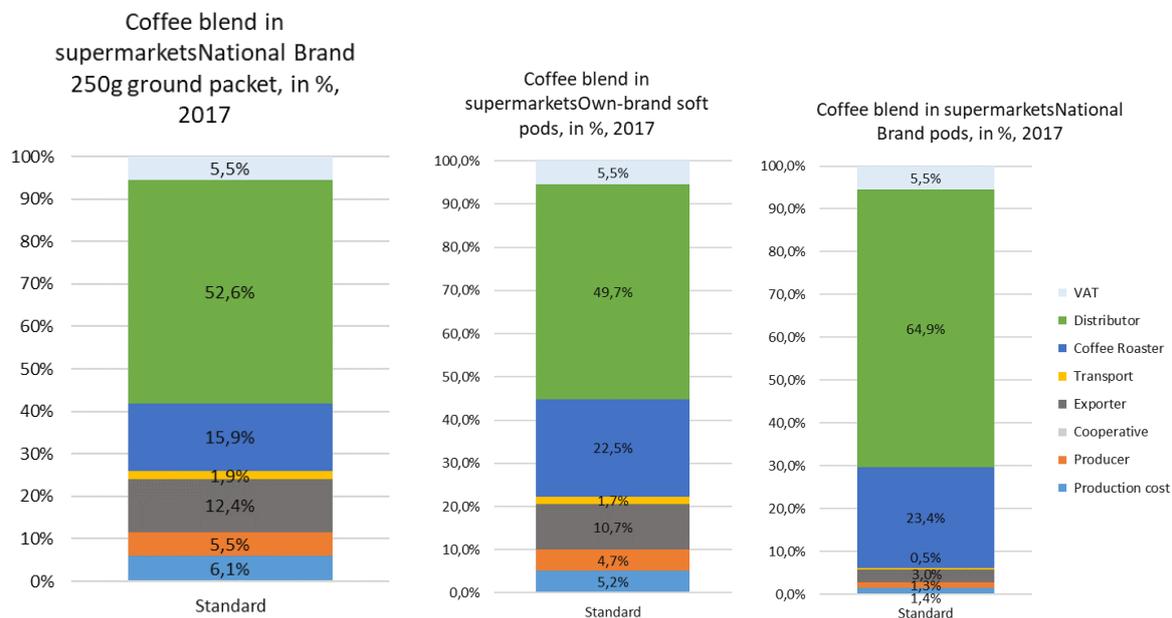


Figure 53. Reduction of coffee value excluding discounts from the Peruvian producer to the French consumer. Source: BASIC.

Of the final price of a 250 g packet of ground coffee, only 5.5% of the value returned to the Peruvian producers in 2017 (the lowest share of our three case studies), the country of production recovering 24% of the total value, versus 76% for the remainder of the channel²⁹⁰.

In comparison, the share received by the coffee's country of origin is barely more than 20% in the case of the flexible pods, and in sharp decline in the case of Nespresso compatible capsules: for the latter, the producer country only recovers 5.7% of the value (including 1.3% for coffee farmers), more than four times less than that for a 250 g packet of coffee.

2.1.3. The key negative impacts of the conventional value chain

Some producers trapped in circumstances of poverty and hardship

²⁹⁰ Value shares for coffee roasters and distributors are only indicative on account of the lack of available data in these links. The coffee roaster's share is a minimum figure calculated from the estimated direct costs of the coffee processing and logistics obtained from professionals, and of the added value declared in the accounts of French establishments which produce coffee. The value share of distributors is what is still needed to reach the price stated for the consumer.

The creation of increased value garnered by the stakeholders further down the supply chain (coffee roasters and distributors) contrasts with the circumstances of Peruvian coffee farmers who find themselves trapped in a production model that doesn't pay, which doesn't allow them to rise above the poverty line. In the context of the Peruvian liberalised sector, producers are in effect caught between volatile global coffee pricing and in decline these last three years, and the increasing production costs in the long run.

Impact chains for the traditional sector: isolated producers (70%)

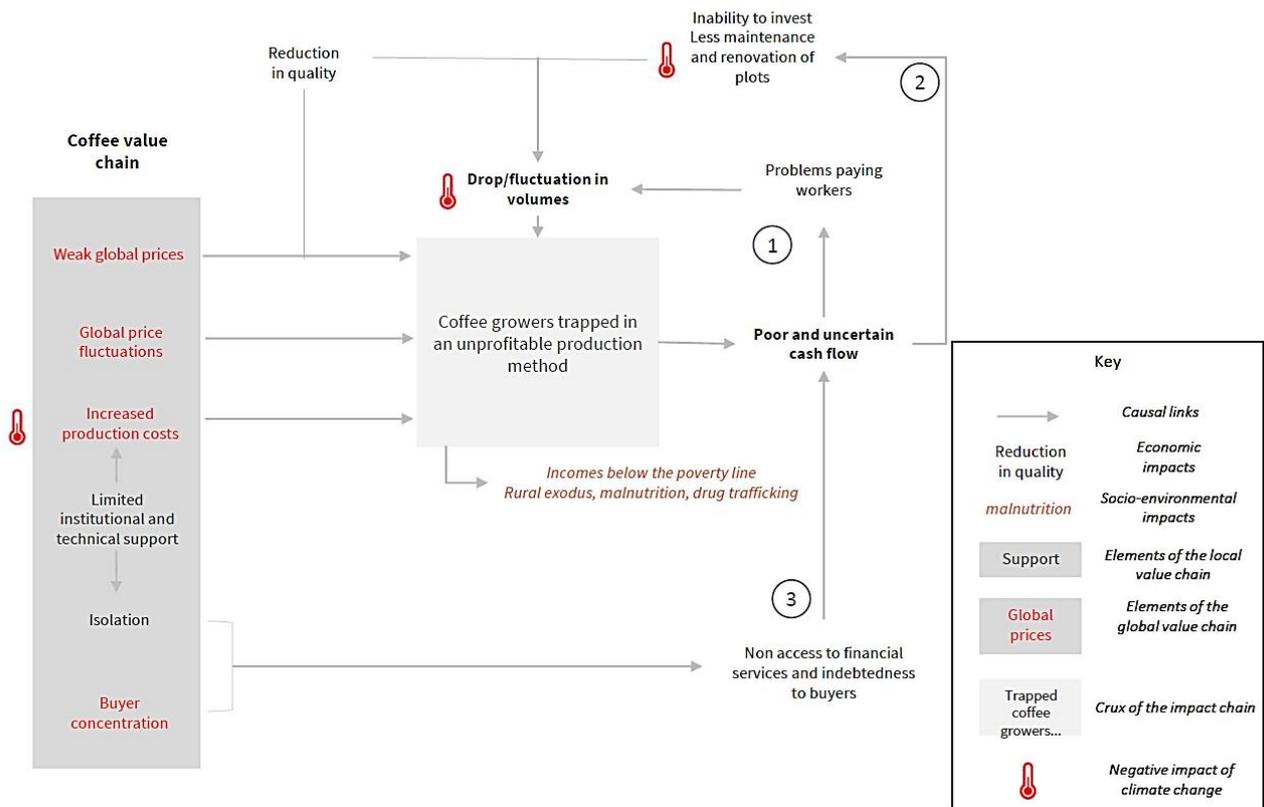


Figure54: Impact diagram of Peruvian coffee farmers, conventional sector (Source: BASIC)

Coffee farmers find themselves in this situation, primarily because of a lack of cash flow during annual production (cycle 1 above): caused by insufficient means to cover their total spending, in particular workers' wages²⁹¹, certain producers do not harvest all of their coffee and face declining revenues.²⁹²

This impact cycle is quite common in coffee producing countries and is strongly connected to the difficulty of access to finances for producers. It is intensified in Peru by the depletion of labour: due to the low wages offered, there are fewer and fewer workers who migrate to the coffee zones during the harvest. Despite this labour shortage, it appears that the use of underage workers is quite rare in Peru, according to available studies.²⁹³

The uncertainty and weak cash flow also has long term effects on investments essential to the maintenance of the coffee production: this cycle of impacts no. 2, illustrated above.

These investments, which require a great deal of cash, comprise of both:

- the costs of maintaining plantations (estimated at 1200 USD per hectare per year²⁹⁴ - purchase of tools, fertilizers, weed killers, maintenance workforce, etc.)

²⁹¹ Most of the time, the workers are paid per task and do not earn enough to provide for their families, the same as for the producers.

²⁹² Interview with a Peruvian coffee sector, the ...

²⁹³ CEVAL, Assessing the impact of Fairtrade on poverty reduction through rural development, 2018

²⁹⁴ USDA, Peru Coffee Annual Report, 2017

- the costs of renewal made necessary when the yield from the coffee trees becomes too low (around 3000 USD per hectare²⁹⁵ once every 20 years).

Due to insufficient cash flow, producers cannot commit to these costs, and the coffee trees become, while ageing, more sensitive to climate shocks, pests and diseases. The volumes and coffee quality decline and become haphazard, which negatively impacts their income.

This vicious cycle causes the phenomenon of decapitalisation, which weakens the autonomy of families (to handle their costs, the producers are forced to sell their cattle, some subsistence plots...)²⁹⁶

The third and last impact cycle, more complex, comes from the circumstances of producers' isolation, which drives them to specialise in coffee due to the absence of any other better paid work, coffee being one of the only sources of cash in the region²⁹⁷. This phenomenon leaves producers particularly dependent on the international market and susceptible to fluctuations of global prices.

Furthermore, it prevents the producers from having access to banking services to take out a loan during critical periods (a situation aggravated by the near absence of land titles being used as security). Thus, they often find themselves obliged to borrow at high rates of interest from their buyers, to whom they are indebted, which reduces their capability to negotiate a good price for their coffee.

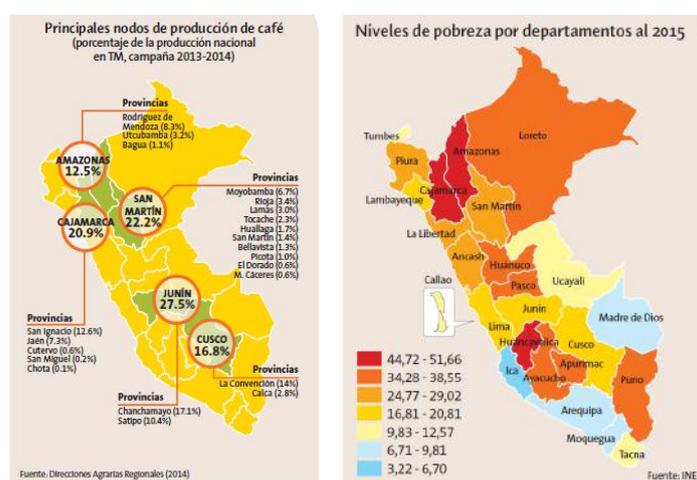


Figure 55: Comparison of coffee producing areas and areas of poverty in Peru (Source: SECO, 2017)

These dynamics induce a (very) difficult social context for the coffee sector in Peru: the producing regions have the highest poverty level in the country, knowing that coffee is the key source of income in the Andean foothills (between 800m and 2000m) where this crop is planted.²⁹⁸

The poverty that characterises many producers manifests as numerous cases of malnutrition and a particularly low level of education for the producers, as well as for their children. The coffee regions offer very few other forms of economic opportunity, and this situation fosters the development of drug trafficking areas, as is confirmed in recent reporting.²⁹⁹

²⁹⁵ USDA, Peru Coffee Annual Report, 2017

²⁹⁶ Interview with expert, 11/07/2018

²⁹⁷ CEVAL, Assessing the impact of Fairtrade on poverty reduction through rural development, 2018

²⁹⁸ CEVAL, Assessing the impact of Fairtrade on poverty reduction through rural development, 2018

²⁹⁹ RLCHAC, Caficultura AL retos y sost eco-Cost prod, 2017 and CEVAL, Assessing the impact of Fairtrade on poverty reduction through rural development, 2018

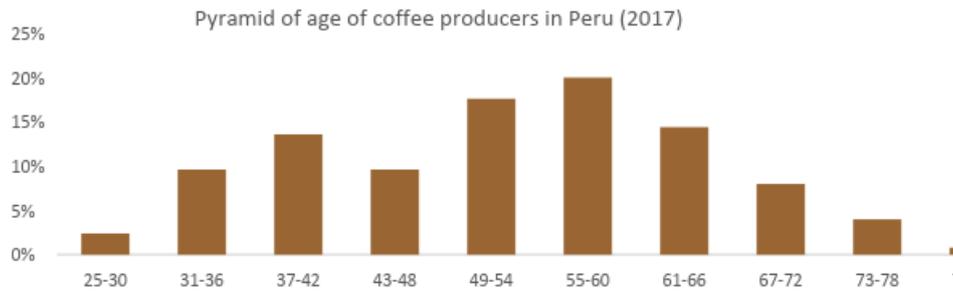


Figure 56: Age distribution of Peruvian coffee producers, Centre (Source: BASIC according to Ecoselva, Café & Cacao, 2017)

In addition, the Peruvian coffee sector is marked by strong inequalities between men and women. While the latter carry out around 55% of tasks linked to coffee production, female producers are not considered as proprietors or decision makers on a par with men. Only 10% of them report experiencing an equal share of housework with their husbands in their homes. Moreover, they face much larger obstacles than men to attain land ownership.³⁰⁰

Coffee work is rarely attractive to younger generations, and Peru confronts a tough issue of ageing coffee farmers (almost half are more than 55 years old). Many of their children migrate to city centres, which offer more employment opportunities. In the medium term, it is production sustainability itself which is questioned by some experts.³⁰¹

Increasing deforestation issues

In spite of this difficult social context, the coffee areas continue to expand through the arrival of new coffee farmers, former producers of other crops in the areas unsuitable for planting coffee - often at (very) high altitude - who are seeking new income sources.³⁰²

Yet their arrival is often preceded by a phase of deforestation (and sometimes burning) to then plant the coffee trees and other trees in combination (fruit trees, for example, like banana trees).³⁰³

In some regions of the country, among the most dynamic in terms of coffee production, the phenomenon of deforestation is a major issue. Thus, in the San Martín region, where 25% to 30% of Peruvian coffee is produced on 90,000 hectares, the latest available studies indicate that 10,000 hectares could be deforested each year for agriculture in general, one section - unquantified - due to the expansion of the coffee areas.³⁰⁴

To fight against this phenomenon, different initiatives have been launched to promote best agricultural practices, in particular agroforestry, and raise awareness of the conservation of some species of trees and certain habitats³⁰⁵.

However, we also note a trend for the increased use of chemical fertilisers and agrochemical products to improve yield and curb the quest for new land. Even if this use remains low in comparison to other countries like Colombia, it could constitute a major water and soil pollution issue in the years to come, in the light of rapid development of diseases correlated to climate change.

³⁰⁰ CIAT-CGIAR, Coffee and cocoa value chains: Gender dynamics in Peru and Nicaragua, 2016

³⁰¹ NRI, Coffee Evaluation Impact Fairtrade, 2016

³⁰² Interview with expert, 12/07/2018

³⁰³ SECO, Coffee industry in Peru, 2017

³⁰⁴ SECO, Coffee industry in Peru, 2017

³⁰⁵ SECO, Coffee industry in Peru, 2017

Impacts are amplified due to climate change, which already significantly affects the country

Climate change strengthens the impact cycle described previously.

The seasons are less and less marked, and the hot and humid seasons more and more frequent, which disrupts the coffee tree growing cycle and causes sharp declines in productivity.

Over the past ten years, very strong rains degraded the crops, and fostered the appearance and propagation of diseases (for plants, but also for people), notably that of the fungus responsible for coffee rust.

In Peru, this disease has since affected 20% of the area between 2013 and 2015, around 300,000 hectares, giving rise to a significant loss of volume: up to 37% less production between 2011 and 2014.³⁰⁶

All of these phenomena have negative impacts on the coffee producer's income:

- The need for investment (redevelopment and maintenance of plots) grows due to the damage caused to plantations and essential prevention measures to combat the consequences of exceptional events.
- If we add a general rise in labour costs because the crisis periods cause a number of workers to find work that is more lucrative than coffee.

To confront the consequences of climate change, a significant number of producers start using more fertilisers and agrochemicals.

In this context, some producers, more often than not collectively organised, make a different choice: to consolidate their agroforestry and organic models by using the more lucrative certified coffee markets to be able to make their strategy profitable.

Social costs almost equal to the export value of Peruvian coffee

The previously analysed socio-environmental impact causes societal spending, which is borne by individuals and public authorities to confront the consequences of the sector's operation. We call this spending societal costs.

The first component concerns producers' inability to earn enough income to permit them - as well as their family - to live in dignity. In the absence of studies on the living wage, we can estimate this income on the basis of the absolute poverty threshold calculated by the statistical institute of Peru (INEI).

It has been estimated at around 882 dollars per person per year in rural areas in 2015 (and 923 dollars in 2017 updated for the inflation rate in Peru over the last 2 years)³⁰⁷.

Considering that the 224,000 rural families who depend on coffee have an average of 5 members, the coffee production for export should be raising around 602 million dollars at the country level to allow them to surpass the poverty threshold (pro rata exported volumes of the total product).

Yet, in the same year, exported coffee brought producers 188 million dollars, a societal cost of 414 million dollars.

Moreover, the workers employed in coffee production find themselves in a similar state: the minimum daily salary in the rural zone is 10 dollars, almost 40% less than the living wage calculated by a recent study (around 16 dollars per day)³⁰⁸. However, available data has not allowed an estimation of the societal cost associated with a lack of information of the number of workers and their actual working conditions.

³⁰⁶ USDA, Coffee Report Peru, 2017

³⁰⁷ INEI, Mapa de pobreza provincial y distrital (Map of provincial and district poverty), 2015

³⁰⁸ True Price and Trucost, The external costs of banana production: A global study, 2017

The second component of societal cost concerns Peruvian government spending on ensuring essential public services (education, healthcare, social affairs, water/electricity, transportation, justice, support for agriculture and environmental protection) in the provinces where coffee is produced (San Martin, Cajamarca, Amazonas, Cusco, Junin).

In 2017, this amounted to 232 million dollars (pro rata, for families earning a living from coffee in the total population of these provinces).

On the other hand, the government does not raise any taxes on the coffee sector, which is totally liberalised (other than exporters' and cooperatives' profit tax and producers' income tax, which was estimated at 43 million dollars).

In 2017, the societal cost was therefore 189 million dollars, a shortfall for the state, which must meet its public service obligations, which must be financed from other sources, whether national or international.

In terms of the environment, the nitrate pollution of water and soil pollution can be considered as negligible - even non-existent - due to the very low levels of chemical additives used by producers.

The final component of societal costs concerns the emission of greenhouse gases all along the chain, from the grower to the final consumer in France. This amounts to approximately:

- Upstream: 3 kg of CO2 per kg of green coffee produced for coffee growing (on the basis of an average production very low in additives in Peru).
- Downstream: 25 kg of CO2 for each kg of coffee roasted, packaged into capsules or packets, marketed and consumed (the additional emissions linked to capsules are potentially compensated by an overload of coffee used in filter machines).

Bearing in mind that current global expenditure in fighting climate change amounts to around 300 billion dollars per year (CO2 emissions having consequences on an international scale), we can estimate that each kilo of CO2 emitted costs around 0.8 cents. For coffee exported from Peru in 2017, this represents a total cost of 72 million dollars.

Societal costs linked to other impacts previously analysed (in particular the working conditions of seasonal workers and deforestation linked to coffee growing) could not be put into numbers due to a lack of available data to quantify the extent of the problem and identifying associated expenses.

The total estimated societal cost of the conventional coffee sector therefore amounts to \$675.5 million in 2017 (see following summary), an amount almost equivalent to the value of Peruvian green coffee exports (\$753 million in 2017).

Societal cost	Amount in 2017
Shortfall to be bridged in order to ensure a decent standard of living for coffee producers	\$414 million
Shortfall to cover State expenditure for essential public services infrastructure within coffee-producing provinces	\$189 million
Expenditure generated by greenhouse gas emissions	\$72.5 million
TOTAL SOCIETAL COST	\$675.5 million
<i>for comparison, total FOB value of coffee exports</i>	<i>\$753 million</i>

2.1.4. Important positive impacts generated by the fair trade and organic sector, undocumented, for "sustainable" labels

Fairtrade certification and organic agriculture were introduced to Peru³⁰⁹ from the late 1990s onwards, whereas the UTZ and Rainforest sustainable labels were developed more recently (since 2002), promoted by the main players in the sector³¹⁰. Since 2011, the country has become one of world's main exporters of sustainable Fairtrade coffee, but especially the world's biggest producer and exporter of organic coffee. The country produces almost half of the world's organic coffee.³¹¹

In 2016, over 47,000 tonnes were exported from Peru under Fairtrade conditions, which was equivalent to 25% of the country's total exports. (We couldn't find any consolidated data concerning other fair trade labels, in particular SPP and Fair for Life)³¹².

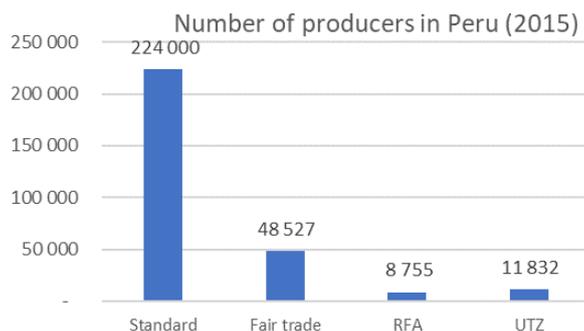


Figure 57. Distribution of the number of producers in Peru in 2015/2016. Source: BASIC, based on data from IISD, Fairtrade and UTZ-Rainforest

Fairtrade is better established in Peru than UTZ and Rainforest: from a total of 224,000 producers, over 48,500 belong to Fairtrade certified organisations (without counting other fair trade labels, for which we couldn't find any statistics), against 11,832 and 8,755 for UTZ and Rainforest respectively.



Figure 58. Area and productivity averages in Peru 2015/2016. Source: BASIC, based on data from IISD, Fairtrade and UTZ-Rainforest

Certified Fairtrade producer organisations appear to be slightly higher than the country average in terms of surface and productivity (and in a slightly less precarious situation): their farms are around 3 hectares (compared to the 2 hectares for conventional producers) and their productivity is around 20% higher. They are all organised into cooperatives or associations, and conversely, the vast majority of the country's producer organisations are certified Fairtrade. The amount that they sell under Fairtrade conditions (approximately 47,000 tonnes) represents 18% of the country's coffee exports in 2017 (261,000 tonnes according to the ICO). They are therefore no longer a niche sector and the associated organisations have crossed a threshold, allowing them to exert a much stronger influence on the sector.

Furthermore, according to statistics of the FLO Cert, over 70% of their coffee volume capacity was also certified organic (approximately 80,000 tonnes), with productivity levels similar to the country's average, which is

³⁰⁹ The first container of certified Max Havelaar coffee was exported in 1994

³¹⁰ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

³¹¹ Université de la Sorbonne, Dynamique du café au Pérou et marché international, 2011

³¹² Fairtrade/Max Havelaar data

explained by a generally low level of chemical additives use, at least up until the coffee rust crisis of the last few years³¹³. Considering that approximately half of all Peruvian coffee produced is certified organic, we can deduce that two thirds of it is also certified fair trade, demonstrating an intrinsic and important connection between the two approaches.

Certified UTZ and Rainforest producers have larger surfaces and higher productivity levels than fair trade producers. This situation hides 2 different realities:

- A significant proportion of those producer organisations that are Fairtrade certified are also UTZ and Rainforest certified (more easily accessible due to their fair trade certification being more demanding) in order to diversify their opportunities. This is the case of Cenfrocafe, the largest certified Fairtrade cooperative in Peru (although we did not find any statistics on the exact number of organisations that have this triple certification).
- Furthermore, many producers are only certified UTZ and/or Rainforest. These coffee cultivators, even before certification are above the average: they are more productive and grow coffee on plots at least twice as big and are rarely collectivised. As they have more means at their disposal, they are able to access these expensive certifications in order to diversify their opportunities and increasing their already-higher-than average revenues.

Value chains of fair trade pay more in Peru, with lower margins in France

In terms of value chains, fair trade producer organisations channel over 30% of coffee production in Peru, and generally involve all the intermediate steps, from harvesting to quality control, the first processing steps up to the exportation of green coffee³¹⁴.

Certain producer organisations may stop at the intermediate processing stage and sometimes sell their coffee to private, national or international exporters³¹⁵.

On the basis of different impact studies of Fairtrade in Peru, it is possible to estimate the reduction in value from the producer to export over the last 12 years:

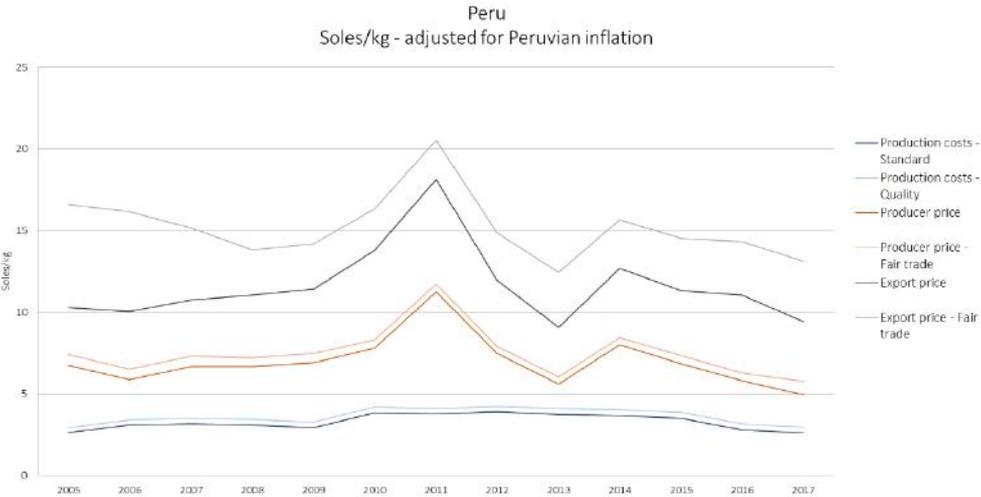


Figure 59. Evolution of the reduction in value of Fairtrade coffee, up to FOB Peru. Source: BASIC.

The prices obtained by certified producer organisations appear to be higher than those of conventional producers, thanks to improved practices and a valorisation of their coffee. On their level, the producers therefore get the best price for their coffee, around 0.14 USD/kg on average, according to impact studies

³¹³ Interviews with representatives of certified producers' organisations in Peru and Peruvian fair trade stakeholders conducted in May, June and July 2018

³¹⁴ WB 2016

³¹⁵ Interview with a coffee expert in Peru

carried out over the last few years³¹⁶. These figures are just national general averages, the situation of producers varies considerably depending on the cooperative and how effective their strategies are.

Furthermore, the maximum price guaranteed by the Fairtrade system had a notable effect from 2005 to 2008 (amplified by Peru's high inflation since then), and again since 2017, periods during which the average price of Peruvian coffee exported has reduced below that level³¹⁷. This effect is, a priori, even more notable for the SPP system whose minimum price is higher than that of Fairtrade (\$1.60 vs \$1.40 per pound). However, impact studies on the ground would be necessary to evaluate what share of this price is given to producer members of SPP certified cooperatives.

In comparison, production costs are (very) slightly higher for conventional producers due to the quality workmanship (additional workers post-harvest...). There are other costs in addition to those shown in the diagram above - at the level of producers and their organisations - linked to meeting standards of production specification and the payment of certification costs (the information gathered does not allow these additional costs to be quantified, in comparison to conventional production). In conclusion, the higher prices obtained by producers compensate for their additional costs and allow them to raise their incomes by more than a third.

The structured chains of certified producer organisations distinguish themselves by their work on improving coffee's organoleptic quality³¹⁸. Over the last 10 years, cooperatives have succeeded in selling their coffee for approximately \$50 more per hundredweight on average than those in the traditional chain³¹⁹. A development premium of USD 0.20/lb is added to this differential³²⁰.

Producers benefit from this premium indirectly, most of which is invested by the cooperatives in infrastructure and support³²¹ (technical advice, training, sharing of agricultural practises, collective organisation of the work schedule) in order to improve producers' performance and the quality of their coffee.

After exportation, which is managed most of the time by cooperatives, Peruvian green coffee marketed as Fairtrade (mostly under the Fairtrade label) is imported into France by players of all sizes (from small businesses to multinational subsidiaries) then processed by the roasters, who are essentially SME or even micro-enterprises³²².

In-store, Peruvian coffee marketed as fair trade has added value partly due to its "single origin Peruvian" label but may also be added to blends (principally with the Fairtrade label, but also with others such as SPP or sometimes unlabelled 100% fair trade consumer brands such as Lobodis). Data collected in the supermarkets visited within the framework of the study have estimated an average price paid by the consumer according to format type and product type (blended or single origin).

³¹⁶ Oréade Brèche, Etude d'impact du commerce équitable sur la filière café au Pérou: le cas de Cocla, 2007
NRI, Coffee Evaluation Impact Fairtrade, 2016

³¹⁷ According to the interviews carried out with representatives of the network of fair trade producers and fair trade coffee channels, even if the fair trade statement of work indicates that the minimum price should be taken into account as soon as the coffee prices in New York fall below \$1.40 (USD) per pound, in practice the buyers compare this minimum price to the purchase price of coffee in the country which is higher for the countries being considered because it includes the "quality differential" linked to the origin. In periods of significant downturns in global pricing, as is the case since the beginning of 2018, producer organisations themselves tend not to demand payment of the "quality differential" in addition to the minimum price, for fear of reaching prohibitive price levels.

³¹⁸ D. Allier, Dynamique du café au Pérou et marché internationaux, 2011 and Sintercafe, Coffee Production Outlook and Growth, 2017

³¹⁹ Sintercafe 2017

³²⁰ At the beginning of the 2010s, in a period of elevated global prices, several cases of non-payment of the quality differential in addition to the collective premium were reported. The FLO Cert certifier has since modified its procedures to control this phenomenon in collaboration with Fairtrade International, who do follow-up and research work on quality differentials.

³²¹ The rest of the premium is used both to finance the management of the cooperative and for investments not directly concerned with coffee production which benefit member organisations and their community (e.g. social investments in the areas of education or health).

³²² Interviews with representatives of Max Havelaar France and brands selling fair trade coffee, held in May 2018.

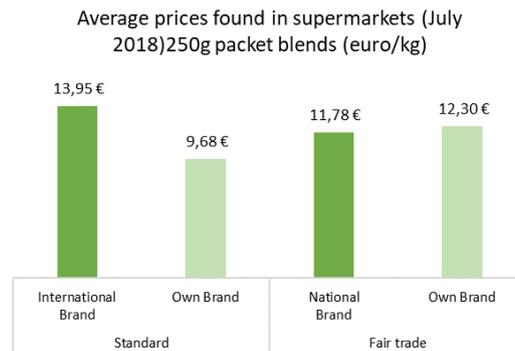


Figure 60. Consumer prices for blended fair trade and conventional coffee sold in 250 g packets in France. Source: BASIC.

Concerning ground coffee blends sold in 250 g packets, the data show different effects of the Fairtrade label according to the type of brand:

- For national brands, the average price per kilo of a Fairtrade labelled blend is approximately 15% lower than equivalent blends sold without the label.
- On the other hand, for private brands, Fairtrade labelled blended coffee is 27% more expensive than private brand blends without the Fairtrade label. However, the survey doesn't allow this inflationist effect to be attributed to the Fairtrade label, because the products are not directly comparable (the chains are different and the marketing position of private brands is different, Fairtrade labelled products are linked to higher quality product ranges).



Figure 61. Consumer prices for blended fair trade and conventional coffee sold in 250 g packets in France. Source: BASIC.

Regarding the coffees of "single origin Peruvian" marketed in 250 g packets of ground coffee, the data does not permit to come to a conclusion on the Fairtrade label effect: private brands are sold at an equivalent price with or without the label and the 20% increase over national brand-name products can be explained by its "premium" marketing position.

During the survey, we did not identify any product sold in portion format (pod or capsule) that was fair trade but was not labelled organic (for the details of these doubly-certified products, see the next section).

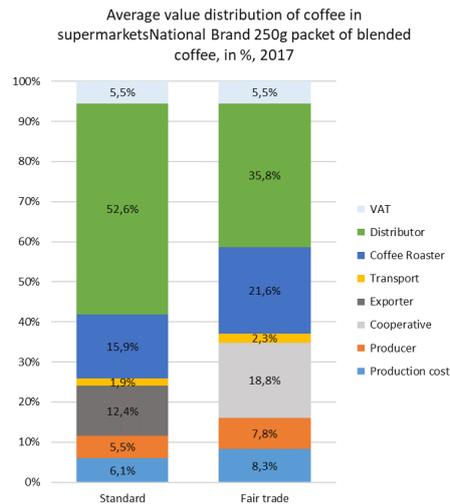


Figure 62. Drop in value of fair trade coffee excluding promotional discounts from the producers in Peru to the consumers in France. Source: BASIC.

On the basis of this data we have estimated the distribution of value for blends sold by national brands (with and without the Fairtrade label), the only comparable products in our sample³²³.

Producers receive more of the final sale price: 7.8% compared to 5.5% for conventional producers. Other notable effects of fair trade in producer countries: certified Fairtrade cooperatives gain a larger share of the value (18.8% compared to 12.4% for conventional coffee exporters).

At the other end of the chain, roasters and distributors seem to earn a smaller share of the value: 57.4% for labelled products against 68.5% of unlabelled products.

The impact of sustainable commerce is linked to work undertaken on quality, initiated by the cooperatives

Sustainable commerce markets have allowed producer organisations to adopt a differentiation strategy in order to commercialise their coffee under better-paying conditions. Their control of the chain to the exporter has transformed relations between the players.

Whereas non-organised producers in the conventional coffee industry are in a very unfavourable negotiating position faced with export companies, particularly multinational subsidiaries, the chain structured by the cooperatives have allowed them to attain a high degree of independence, to improve the quality of coffee produced by their members and internalise part of the added-value that they have created³²⁴.

The certified producer organisations have even become important players in the export sector in their country, one of them (Cenfrocafe) was among the top 10 exporters of Peru.

³²³ Value shares for coffee roasters and distributors are only indicative on account of the lack of available data in these links. The coffee roaster's share is a minimum figure calculated from the estimated direct costs of the coffee processing and logistics obtained from professionals, and of the added value declared in the accounts of French establishments which produce coffee. The value share of distributors is what is still needed to reach the price stated for the consumer.

³²⁴ Oréade Brèche, Etude d'impact du commerce équitable sur la filière café au Pérou: le cas de Cocla, 2007
NRI, Coffee Evaluation Impact Fairtrade, 2016

Coffee sector in Peru

Fair trade

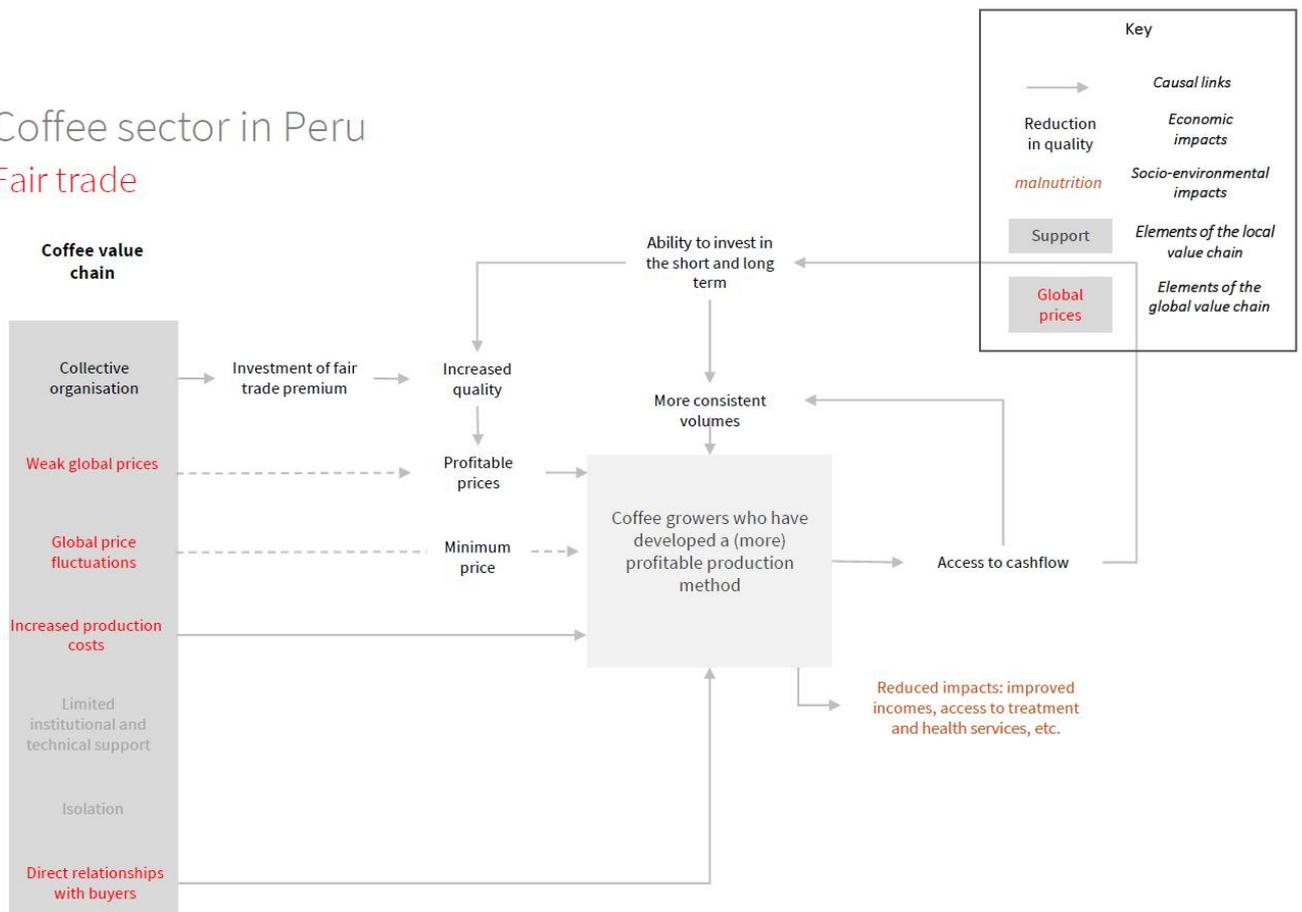


Figure 63: Impact trail on Peruvian coffee cultivators, fair trade sector (Source: BASIC)

According to available impact studies on certified Fairtrade organisations, this positive dynamic has generated a virtuous cycle of producers who are members:

- The use of the Fairtrade premium by cooperatives who have used this premium to implement their quality strategy: providing technical support to producers, financing the infrastructure for the 1st phase of processing (pulpers, wet processing...).
- More stable business relations with importers (although contracts are still negotiated annually with little prefinancing).

Several organisations have also benefited from international development programs because they were Fairtrade certified or in the process of undergoing certification ³²⁵.

Producers have therefore improved their farms' profitability³²⁶, raised their incomes and better met their essential needs (although not completely - see section on social costs).

Furthermore, mechanisms put in place by producer organisations, have allowed them to improve their cash flow (advances, credit, coffee payments in several instalments) a point often criticised in the coffee sector. They are therefore able to ensure a better regularity of volumes harvested, and to invest in the medium-long term to retain the productivity of their plot and ensure the quality of their coffee.

In social terms, producers also benefit from social protection: 70% of fair trade producers are covered by social security, against 30% for non-certified producers, to which can be added aid provided by organisations to help

³²⁵ Oréade Brèche, Etude d'impact du commerce équitable sur la filière café au Pérou: le cas de Coclac, 2007
NRI, Coffee Evaluation Impact Fairtrade, 2016

³²⁶ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

deal with health expenses. In addition, cooperatives also invest part of the development premium in local development infrastructure: schools and training centres for producers' children, health centres.³²⁷

At an environmental level, impact studies document the positive impact of fair trade certification on the shade preservation of plots and the development of a specific model of agroforestation which has a positive impacts better climatic conditions (higher humidity, lesser temperature differences), fight against soil erosion and biodiversity preservation.³²⁸

Furthermore, producers are more aware of climate change issues or the arrival of diseases (sharing information, adaptive measures...).

The producer organisations have also had a positive impact beyond their own circle, by sometimes influencing a rise in the price at which local intermediaries buy coffee from conventional producers, and by institutionally structuring the country's coffee cooperatives at the heart of the Junta del Cafe, acknowledged by both public authorities and private traders³²⁹. At a continental level, certified Fairtrade producer organisations have grouped together throughout Latin America within the CLAC³³⁰. They have built a network of experts by sector, the oldest and most developed of which is the coffee sector, with a paid team that works very closely with certified cooperatives in different countries on training managers, sharing good practice between cooperatives, consolidating knowledge on the challenges of coffee production (measuring the price of production, market information, adapting to climate change)...

From these results, is it possible to estimate the effect of Fairtrade certified organisations on previously evaluated social costs (prorata to the number of producers concerned):

- The societal cost linked to the underpayment of producers is reduced by approximately one third for certified Fairtrade organisations compared to the situation of conventional producers.
- The Fairtrade development premium reduces the need for funding essential services by about 40% compared to conventional means.
- There are no documented differential social costs regarding greenhouse gas emissions (due to the context of agricultural input use in the country and in the absence of information on cooperatives that are fair trade certified and non-organic).

Major limitations still exist, particularly resulting from the recent crisis suffered by coffee cooperatives

These impacts are nevertheless mitigated by several factors:

- The lack of opportunities due to the oversupply of fair trade coffee (only 45% of coffee volumes were sold under fair trade conditions in 2016).
- The level of the minimum price guaranteed by the Fairtrade system which seems insufficient in the context of the rust crisis and investment needs resulting from climate change.

Furthermore, impact studies conducted in Peru do not document the effects on seasonal workers and tend to show that producers with the smallest plots have more difficulty benefiting from fair trade because of the difficulty of adapting to organisational quality standards and the costs of complying with the specifications. Finally, the impacts on good corporate governance practices vary according to the studies.

³²⁷ CEVAL, Assessing the impact of Fairtrade on poverty reduction through rural development, 2018

³²⁸ See Hivos, Shade Grown Coffee-Biodiversity & Small Scale Farmers Peru, 2015

³²⁹ Lise Duval, Etude des effets et de l'impact du commerce équitable labellisé au Pérou et en République Dominicaine, 2007

³³⁰ Latin American Network of Fair Trade Small Producers

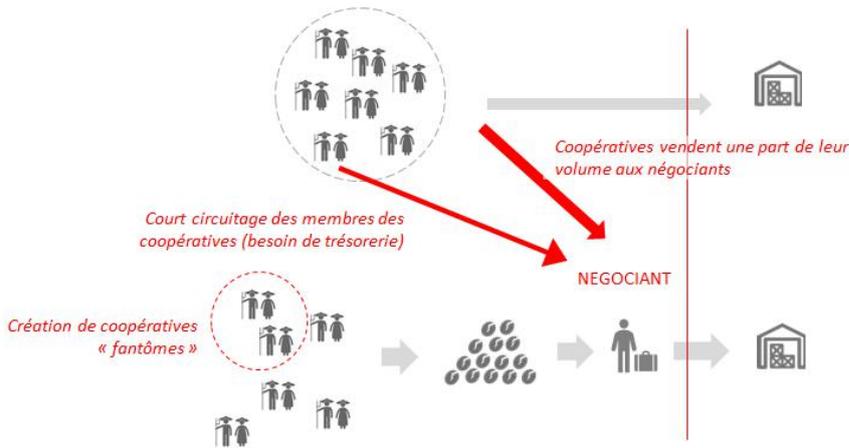
Since 2012, several producer organisations have experienced a major crisis triggered by the rust catastrophe, which has destabilised their economic model and severely weakened their foundations³³¹. The causes are multifactorial, while apparent cash flow problems and growing debt crises have prevented them from paying their members for their crops³³².

A number of producers have therefore turned to private exporters or collectors who can afford to pay cash, thereby rendering cooperatives incapable of honouring their contracts given the lower volumes collected³³³. Many of them have found themselves in a suspension of payments situation and have seen their membership base drop sharply. This situation has affected large coffee companies that were among the country's fair trade pioneers such as Cocla, Cecovasa or Florida.

In response, increasing numbers of fair trade coffee importers have decided to no longer purchase stock directly from cooperatives, but instead use traders with the capacity to safeguard their supplies. Interviews predict that in 2018, more than half of Fairtrade coffee volumes transit through private exporters compared to almost nothing a few years ago thereby jeopardising the hard won independence of cooperatives.³³⁴

However, this situation is not systematic and producer organisations such as Cenfrocafe are commercially successful despite the crisis that has prevailed in recent years, possibly because of long-standing relationships with more fair trade buyers who represented 50% of their sales in 2016 (but above 30% in 2018).³³⁵

These developments are taking place in a context where cooperatives have seen the rise of "ghost" producer groups created by private traders with whom they were already competing over several years.³³⁶



These groups that are totally dependent on the trader who initiated their development and without a genuine collective existence, have nevertheless managed to satisfy the Fairtrade certification entry requirements and represent unfair competition within fair trade sectors. In some cases, it has made independent producer

³³¹ Interviews with representatives of certified producers' organisations in Peru and Peruvian fair trade stakeholders conducted in May, June and July 2018

³³² During the sharp price rises in 2011-12 due to the rust crisis in Colombia, some bought the harvest at a very high price to the producers, then faced an abrupt price fall and were obliged to sell their coffee at a loss, thereby losing a large part of their cash flow. In certain cases, some of them could not deliver the coffee expected, which put meant their buyers had to turn to other suppliers and stopped their long-term direct contracts with them as a result of a lack of security of supply.

³³³ Interviews with representatives of certified producers' organisations in Peru and Peruvian fair trade stakeholders conducted in May, June and July 2018

³³⁴ Interviews with representatives of certified producers' organisations in Peru and Peruvian fair trade stakeholders conducted in May, June and July 2018

³³⁵ Interviews with representatives of certified producers' organisations in Peru and Peruvian fair trade stakeholders conducted in May, June and July 2018

³³⁶ Interviews with representatives of certified producers' organisations in Peru and Peruvian fair trade stakeholders conducted in May, June and July 2018

organisations agree to market their fair trade coffee through private traders even though they had been exporting directly up until then.³³⁷

As a result, there has been a significant rise in the number of Fairtrade certified organisations in Peru over the past 3-4 years while the number of producers has remained constant. Combined with a drop in the number of cooperatives directly exporting their coffee, these statistics seem to reflect the fragmentation of cooperatives and an increase in the number of groups controlled by exporters.

More precise studies need to be conducted in the field to measure the extent of the problem and to investigate ways and means to curb it.

Dual organic and fair trade certification: a way out for producers in Peru?

In this difficult context, a large number of Fairtrade certified organisations have decided to move even more forcefully towards dual certified fair trade and organic markets in order to restore their profitability and maintain their comparative advantage over private exporters.

Traditionally, Peruvian coffee producers hardly use any inputs (mainly because of their high cost compared to the means at their disposal), which has substantially increased their potential on the organic farming market. Peru was the world's leading producer and exporter of organic coffee in 2017³³⁸ with 90,000 hectares certified organic³³⁹. Organic coffee is almost entirely produced and marketed by producer organisations, which are also fair trade certified. In 2015, coffee certified organic represented approximately 70% of their total production potential (by volume).³⁴⁰

These Fairtrade certified producer organisations have invested the potential for organic coffee in Peru, achieving dual certification for their members and thus diversifying their opportunities to include profitable export markets. These organisations have managed to provide coffee traceability to the producer, which is difficult to guarantee in value chains run by private exporters because of the multitude of isolated coffee growers and mid-level intermediaries.³⁴¹

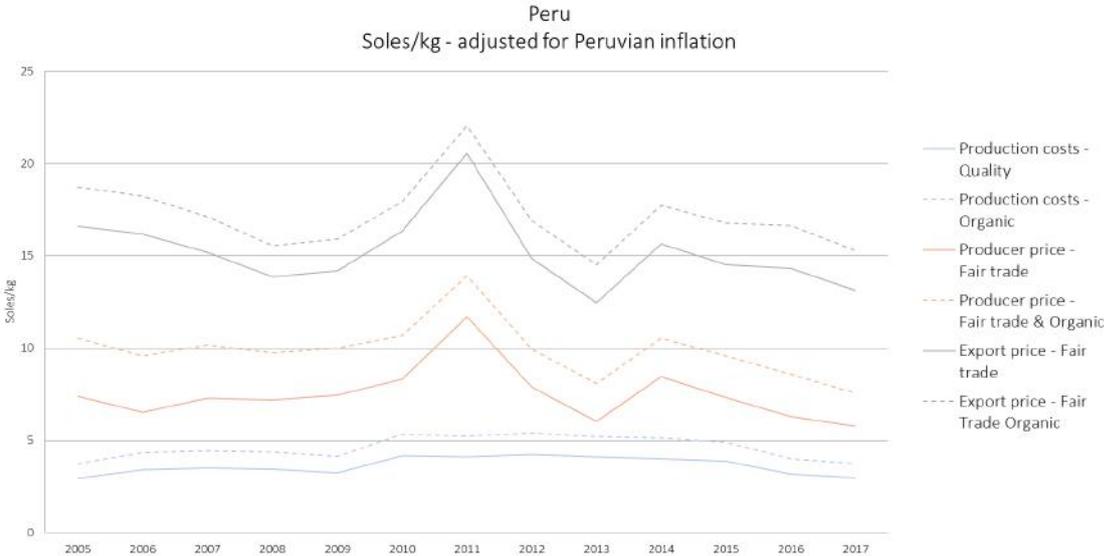


Figure 64. Evolution in the drop in value of organic fair trade coffee to FOB Peru. Source: BASIC.

³³⁷ Interviews with representatives of certified producers' organisations in Peru and Peruvian fair trade stakeholders conducted in May, June and July 2018

³³⁸ The first exports of OCIA-certified organic coffee date from 1989

³³⁹ USDA, Peru Coffee Annual Report, 2018

³⁴⁰ Fairtrade International, Scope and Benefits of Fairtrade, 2015

³⁴¹ Interviews with representatives of certified producers' organisations in Peru and Peruvian fair trade stakeholders conducted in May, June and July 2018

Organic certification coupled with Fairtrade certification qualifies for an additional premium of 0.30 USD/lb, which is mainly passed on to producers (often upon initial payment)³⁴². A significant price differential can therefore be observed that is intrinsically linked to the specifications at both the export and producers' levels. According to the interviews conducted as part of the study, it makes it possible to cover the higher production costs that are borne by producers because of their lower yields (around 511 kg/ha compared to 666 kg/ha for non-organic fair trade producers³⁴³) and the extra work required on the farm.

The coffee marketed under these two certifications generally follows the same channels and transits through the same stakeholders, SMEs and VSEs, as channels only labelled fair trade³⁴⁴.

In reality, Peruvian fair trade and organic coffee is valued in the same way as non-organic coffee: as "single origin Peru" and incorporated in coffee blends.

The data collected from the supermarkets in the survey have made it possible to estimate the average price paid by the consumer according to the different formats and for each product type (blend or single origin coffee).



Figure 65. Consumer prices for blended fair trade and conventional coffee sold in 250 g packets in France. Source: BASIC.

Regarding coffee blends marketed in 250 g ground coffee packs, surveys show that dual Fair Trade and organic certification has an inflationary effect: one of the main blends among domestic brands is thus sold at a price per kilo 22% higher than the non-organic fair trade labelled blend and private label blends cost 7% higher on average (it should nevertheless be noted that they are not strictly comparable because they correspond to different branding and marketing strategies).



Figure 66. Consumer prices for blended fair trade and conventional coffee sold in 250 g packets in France. Source: BASIC.

The trends are reversed for "single origin Peru" coffees marketed in 250 g ground coffee packs with the price per kilo being lower for double certification. However, this effect does not seem to be linked to the organic label but to the difference in the marketing strategy for non-organic products.

³⁴² Interviews with representatives of certified producers' organisations in Peru and Peruvian fair trade stakeholders conducted in May, June and July 2018

³⁴³ According to FLO Cert statistics in 2015.

³⁴⁴ Interviews with representatives of Max Havelaar France and brands selling fair trade coffee, held in May 2018.

The surveys have also made it possible to identify dual certified Fairtrade and organic products sold in pods (flexible pods and capsules), which can be compared to the prices for conventional products (because no non organic fair trade product was identified).

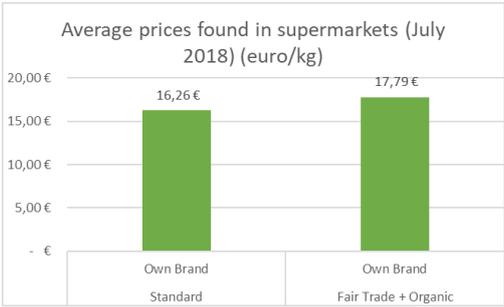


Figure 67. Consumer price survey of fair trade and conventional coffee blends sold in pods in France. Source: BASIC.

Flexible private label pods are comparable products whose value is 9% higher than the price per kilo with double certification.

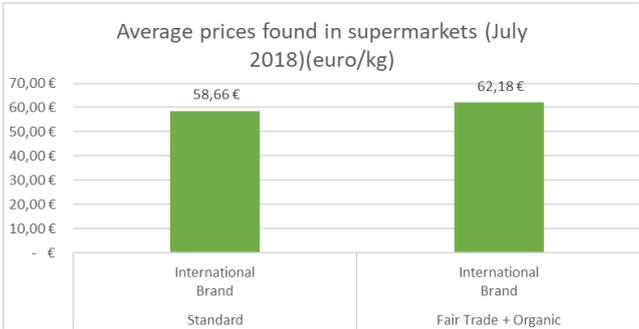


Figure 68. Consumer price survey of fair trade and conventional coffee blends sold in pods in France. Source: BASIC.

Nespresso compatible capsules sold by one of the major international brands in the sector also show a 6% higher price per kilo with double certification.

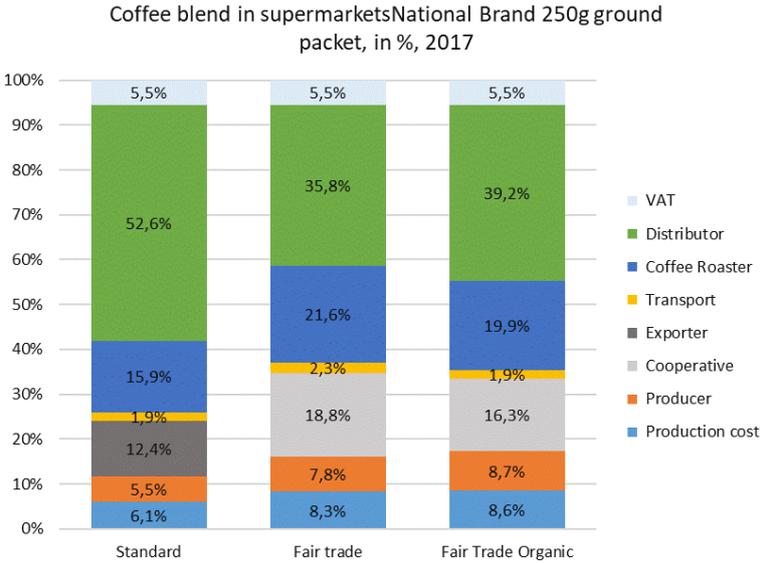


Figure 69. Drop in value of fair trade coffee excluding promotional discounts from the producers in Peru to the consumers in France. Source: BASIC.

Regarding coffee blends, the only comparable products in our sample, the percentage share of value accruing to the producing country is slightly lower with double certification than without the organic label (33.6%

versus 34.9%) because of the higher retail price of these products³⁴⁵; of this total amount, producers receive a higher share of the value: 8.7% versus 7.8% without organic certification. On the other hand, compared to the conventional market, the results are overwhelmingly positive with the producer country receiving 33.6% of the value compared to 24%.

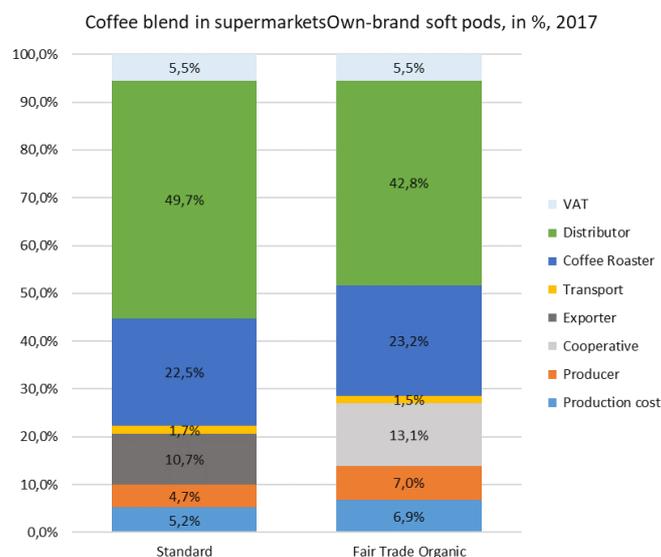


Figure 70. Drop in value of fair trade coffee excluding promotional discounts from the producers in Peru to the consumers in France. Source: BASIC.

In blends containing Peruvian coffee sold in flexible pods under a private label, the value share³⁴⁶ accruing to the producer country is greatly increased for products with double certification, as in the case of 250 g packs: 27% compared to 20.5% (no non organic product was identified during the surveys).

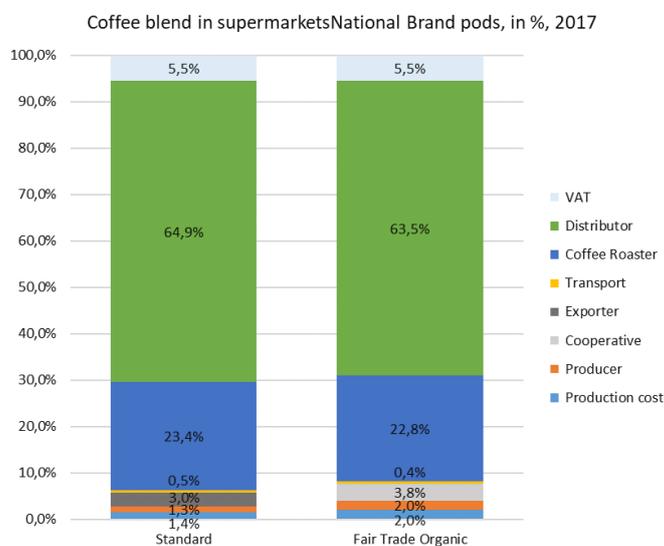


Figure 71. Drop in value of fair trade coffee excluding promotional discounts from the producers in Peru to the consumers in France. Source: BASIC.

Finally, regarding coffee blends sold in capsules, differences in value capture by the producer country are much lower as a result of the price per kilo, which is 4 times higher for coffee sold in this format: if the share

³⁴⁵ Expressed in terms of value, the producing country actually gains €0.50 per kg more for double-certified products. At the other end of the chain, roasters and distributors gain €7.10 per kg for Fairtrade + organic versus €5.70 per kg without the organic labelling (which is still lower than the €8.00 per kg gained on comparable conventional products sold without any label).

³⁴⁶ Value shares for coffee roasters and distributors are only indicative on account of the lack of available data in these links. The coffee roaster's share is a minimum figure calculated from the estimated direct costs of the coffee processing and logistics obtained from professionals, and of the added value declared in the accounts of French establishments which produce coffee. The value share of distributors is what is still needed to reach the price stated for the consumer.

allocated to the producer country goes from 5.7% to 7.8%, the value captured by the roaster and the distributor is greater than 85% (organic and fair trade do not change the global order of magnitude).

In terms of impact, when organic certification is coupled with fair trade certification, it mainly leads to increased market share for producers and cooperatives in the producer country, which contributes to reducing the social impacts associated with inadequate compensation for producers.

This translates into a 30% reduction in the societal cost linked to the underpayment of producers in the case of double certification in relation to single Fairtrade certification (thanks to the organic premium paid to coffee growers). Thus, fair trade typified by the Fairtrade system seems to allow producers to not only make a profit by moving into organic farming, but also to finally increase their income from coffee production.

Furthermore, organic certification also yields specific environmental benefits:

- regarding agricultural production, it eradicates pollution linked to the use of chemical inputs and improves soil fertility and moisture management.
- regarding biodiversity, it correlates with greater species richness, particularly those found in forest habitats³⁴⁷
- regarding ecosystem services, it enables carbon storage that is almost 70% higher than in a non-organic production system.

These beneficial effects are intrinsically linked to the "organic agroforestry" model implemented by producers belonging to organisations with double certification.

However, the severe coffee rust outbreak in 2013 and the persistence of this disease since then would not have spared organic certified farms (the most affected farms were located at low altitudes)³⁴⁸.

If conventional farmers tended to use pesticides (fungicides) and chemical fertilisers on an ad hoc basis to combat this phenomenon³⁴⁹, it is not necessarily the case for producers who are organic and fair trade certified. Despite the drop in production that they have suffered, interviews conducted with fair trade stakeholders in Peru indicate that the organic certified agroforestry model can be used as a tool to improve resilience to rust, provided that sufficient investment is made in supporting producers and their organisations³⁵⁰.

Technical support for producer organisations was mobilised to enable their members to continue growing coffee. It was reinforced by the CLAC coffee network and its technical teams, which created a specific action plan to build collective expertise on rust and help producer organisations to use strategies adapted to their specific context. A large number of Peruvian cooperatives have therefore decided to consolidate and improve their organic agroforestry systems in response to the rust challenge and, more broadly, climate change.

Furthermore, double organic and fair trade certification is seen by these organisations as a means of trying to guard against unfair competition from private exporters and "ghost" cooperatives, which find the traceability requirements to the plot of land difficult to achieve because of land fragmentation and the weak organisational culture of the producers who supply them.³⁵¹

³⁴⁷ See Hivos, *Shade Grown Coffee-Biodiversity & Small Scale Farmers Peru, 2015: Organic farming has 50% more specialist forest habitat butterflies than shaded farms (of the type used by producers who are members of fair trade-certified cooperatives) and six times more than conventional intensive farming.*

³⁴⁸ USDA, *Peru Coffee Annual Report, 2018*

³⁴⁹ Interview with an expert on the Peruvian coffee industry: Pesticide treatments are still infrequent because they are expensive for producers, but the government and conventional technical support encourage them to use them more and more.

³⁵⁰ Interviews with representatives of certified producers' organisations in Peru and Peruvian fair trade stakeholders conducted in May, June and July 2018

³⁵¹ See Interview with an expert on the Peruvian coffee sector: Although the tests for the presence of pesticides in the batches of Peruvian coffee were systematically negative until the rust epidemic, whichever the production model (conventional or certified), traces have been regularly detected since then in batches that are not certified organic.

Undocumented effects of UTZ and Rainforest Alliance certifications

As described at the beginning of this section, a large, but non-quantified, number of producers benefiting from the UTZ and Rainforest Alliance systems are members of organisations already certified fair trade who have chosen to acquire these certifications in order to diversify their opportunities (for example, the Cenfrocafe cooperative, one of the leading fair trade coffee organisations with more than 3,000 members, has triple certification).

These cases correspond to the two types of sectors that were analysed previously (fair trade associated or not with organic farming). The impacts therefore appear to be mainly correlated with the two certifications, Fairtrade on one hand and organic on the other, and not with the UTZ and Rainforest Alliance labels, which were adopted at a later stage by cooperatives.

There is also a significant number of individual producers in Peru who are not affiliated with cooperatives and who are only UTZ or Rainforest Alliance certified.

We did not find any studies or information regarding these producers apart from the few statistics presented at the beginning of this section, which show that they have larger plots and more productive agricultural models than the country average, thus being "ahead of the pack" even before they have been certified. The structure of the sectors in which they participate has also not been documented and seems similar to the conventional channels described at the beginning of the section on Peru.

In terms of consumption, our shelf surveys identified only a single blend from a major international UTZ labelled brand in capsule format that could potentially contain coffee from Peru. It is sold at a price equivalent to that of similar conventional coffee capsules, for about 58.69 €/kg (it is therefore 5% less than double certified Organic and Fairtrade capsules). The lack of information on the sectors and stakeholders made it impossible to estimate the drop in value.

In economic terms, the only available information shows the payment of a quality premium, which has neither been systematic nor constant over the years and which ranges from 0.03 to 0.07³⁵² dollars per pound of coffee for Rainforest Alliance and 0.07 to 0.08³⁵³ dollars per pound for UTZ (compared to Fairtrade's organic and development premiums, which amount to 0.2 dollars and 0.3 dollars per pound of coffee respectively). On the other hand, interviews conducted with Peruvian stakeholders show that the costs of implementing the UTZ and Rainforest Alliance labels are high and unappealing except for producers who are adequately funded or who belong to cooperatives, which was confirmed by a study conducted by the Rainforest Alliance in 2012, which shows that the cost of implementing their certification in Peru would be 0.05 dollars per pound of coffee for the producers³⁵⁴.

Beyond these few elements, we did not find an impact study regarding producers having only UTZ and/or Rainforest Alliance certifications, which would facilitate an objective evaluation of the specific effects of these two systems.

Furthermore, a recent Hivos study³⁵⁵ conducted in the San Martin region indicates that independent producers who adhere to a model focused on the intensive use of inputs and increased yields (in the order of 900 kg/ha and above) have a negative impact on biodiversity and ecosystem services. The study states that these producers are sometimes certified and their profile is close to the statistics published by UTZ and the Rainforest Alliance on the producers they certify.

A field study is required to further evaluate these situations and the issues they raise.

³⁵² Barham BL, Weber JG, The economic sustainability of certified coffee: recent evidence from Mexico and Peru, 2012

³⁵³ UTZ, Coffee Statistics Report, 2017

³⁵⁴ Rainforest and CDR, SAN Standard Implementation in Coffee Production: An Analysis of Related Costs vs. Price Premiums, 2012

³⁵⁵ See Hivos, Shade Grown Coffee-Biodiversity & Small Scale Farmers Peru, 2015

2.1.5. Transversal analysis of Peru-France value chains

Peru, which is a country with a weak coffee culture and export-oriented, recently emerged by promoting its quality and organic farming potential with a liberalisation approach where the government is almost entirely absent and allows the sector's stakeholders to take the initiative.

Producer cooperatives channel 30% of volumes by exporting directly to organic and fair trade markets. But the majority of sectors (70%) are organised by private exporters, increasingly multinationals (Volcafé, Olam, Dreyfus), which collect a more standardised coffee via an extensive network of intermediaries.

On average, the price paid to producers is rising slower than the FOB price, while production costs tend to increase gradually over the long term: farmers' incomes, which are very volatile, have fallen in recent years, reaching their lowest level in 2017 since 2005.

At the other end of the supply chain, Peruvian coffee is mainly used in coffee blends in France, its low-cost quality is prized by roasters above other competing origins such as Colombia. The value share captured by the country of origin is 24% for ground coffee sold in 250 g packs, which drops to 20% for soft pods and drops even further to around 5% for coffee sold in capsules.

Faced with the inequalities arising out of the value distribution, most producers who are isolated, elderly and non-organised are extremely poor. They are trapped by cash flow problems, low and volatile world prices and dependence on a shrinking pool of buyers.

These negative impacts are amplified by climate change: the rust epidemic dating from 2013 has forced the majority of producers to use inputs (pollution risks) while others consolidate their organic agroforestry model.

In this context, the table below summarizes the main impacts of the fair trade sectors - especially Fairtrade - associated or not with organic farming, compared with those of standard sectors.

Impacts of coffee production

Peru

	Conventional	Fair trade (Fairtrade)	Fair trade (Fairtrade) + organic	UTZ / Rainforest Alliance
Producers	<ul style="list-style-type: none"> High level of poverty (incomes 65% lower than the poverty line) Low level of education, health problems... Rural exodus <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Isolation Poor and uncertain cash flow Limited ability to invest Low level of organisation 	<ul style="list-style-type: none"> Improved incomes and living standards Access to treatment and healthcare services Improved access <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Use of the development premium to improve overall quality Improved cash flow and investment capacity Use of the premium for social projects Strengthening organisational autonomy Direct and more balanced trade relations 	<ul style="list-style-type: none"> Higher prices for producers Coverage of increased production costs and improved incomes <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Use of the organic premium Direct and stable relationships with buyers in profitable markets 	<ul style="list-style-type: none"> Very low premium (compared to compliance costs) <p><i>Explanatory factors :</i></p> <ul style="list-style-type: none"> Priority given to productivity Access limited to producers with sufficient resources
Workers	<ul style="list-style-type: none"> Daily wage 40% below the poverty line 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> No documented impacts
Pollutant emissions	<ul style="list-style-type: none"> (Very) limited use of inputs in the traditional coffee cultivation method 	<ul style="list-style-type: none"> Shade preservation and the fight against soil erosion 	<ul style="list-style-type: none"> Preserving biodiversity and improving ecosystem services <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Strategy and technical support provided by cooperatives Preservation and development of an organic agroforestry method 	<ul style="list-style-type: none"> Increased risk of water and soil pollution for independent producers who use a more intensive method
Deforestation	<ul style="list-style-type: none"> Severe and regionalised deforestation (San Martin) case study <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Arrival of new coffee producers 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> Partial but limited reforestation of farmland
Impacts of climate change	<ul style="list-style-type: none"> Colonisation of higher altitude zones Loss of productive capacity of low altitude plots Coffee rust 	<ul style="list-style-type: none"> Increased investment capacity Organised producers enable knowledge sharing 	<ul style="list-style-type: none"> Reduced impacts of climate change: soil management, moisture conservation, protection against drought and heavy rains 	<ul style="list-style-type: none"> No documented impacts

Figure 72. Table summarizing the impacts in the Peruvian-French sectors. Source: BASIC.

Fair trade commerce - first and foremost certified Fairtrade - has been an essential lever for the development of cooperatives. Through direct contacts with purchasers, the latter have promoted the quality of their coffee and obtained protection for their producers when prices fall and the cash flow, to increase their income. When there is a drop in price (as has once again been the case since 2017), the minimum price guaranteed allows cooperatives and producers to safeguard their profitability.

Most of the time linked to organic certification, it allowed producers and their organisations to strengthen, or perhaps improve Peru's traditional agro-forestry model of coffee cultivation as well as ensure producers' economic situation.

Beyond the impact concerning producers members of cooperatives, fair trade has had a major structuring impact at the country level, just like the Latin American coffee producers, through the creation of national and continental networks which make up and consolidate shared expertise and allow producers to make their voices heard in the Peruvian and international jurisdictions through their elected representatives.

At the market level, fair trade coffee - organic or non-organic - is not only marketed as blends, but also promoted as "single origin", thus generating more downstream value. On these products, our store data shows that the profit margins on these products for coffee roasters and distributors are slightly inferior to the conventional and that part of the value coming back to the producing country (coffee cultivators and cooperatives) is greater with these 2 approaches. However, it is the sales formats that have the greatest leverage on consumer prices and fair trade approaches like organic do not change the fact that a small part of their value ultimately returns to the country of production for pods and especially for capsules (less than 9% for capsules when compared to over 30% for the 250 g packets).

Furthermore, the 2013 rust epidemic, combined with the rising power of large private exporters within the fair trade system, have strongly weakened the cooperatives who saw their autonomy reduced and their base eroded. To overcome this situation, a large number chose to further expand their prospects within fair trade and organic where access for the big dealers is more difficult.

As for the UTZ and Rainforest systems, their specific impacts remain to be documented. They've found a breakthrough which was weaker than fair trade in Peru due to the producers' weak perception of quality premium when compared to compliance costs.

Apart from producer organisations already certified as fair trade, most are implemented by more intensive producers (i.e. those using more chemicals) even before their certification. At the market level, our reports have not been able to identify products containing Peruvian coffee or certified UTZ or Rainforest.

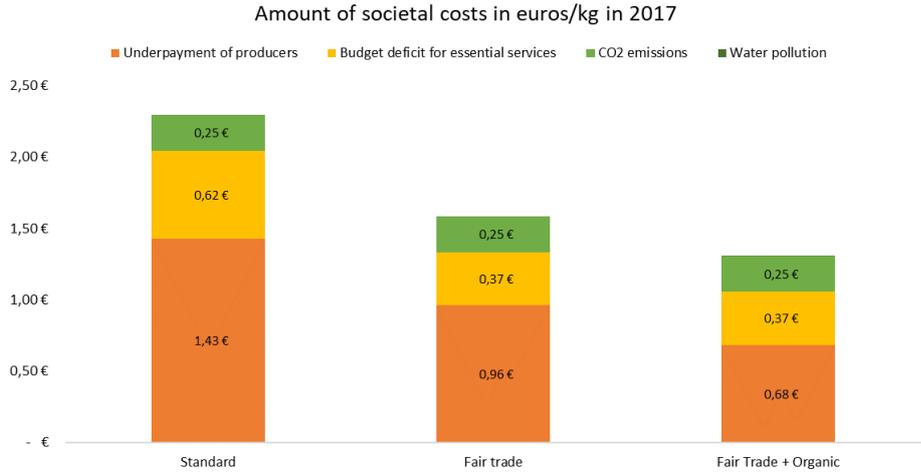


Figure 73. Comparison of societal costs in the Peru-France sectors. Source: BASIC.

The differences in impact previously described translate into societal costs: in conventional coffee sectors, these costs rose to 2.29 € per kilo in 2017, that is a total of over 675 million dollars on a country level, an amount which is nearly equivalent to the value of export of green coffee in the same year. The available impact assessments show that these costs fell by 31% in the case of Fairtrade-certified sectors (1.59€/kg) and by 43% due to double Fairtrade certification and bio (1.31€/kg,).

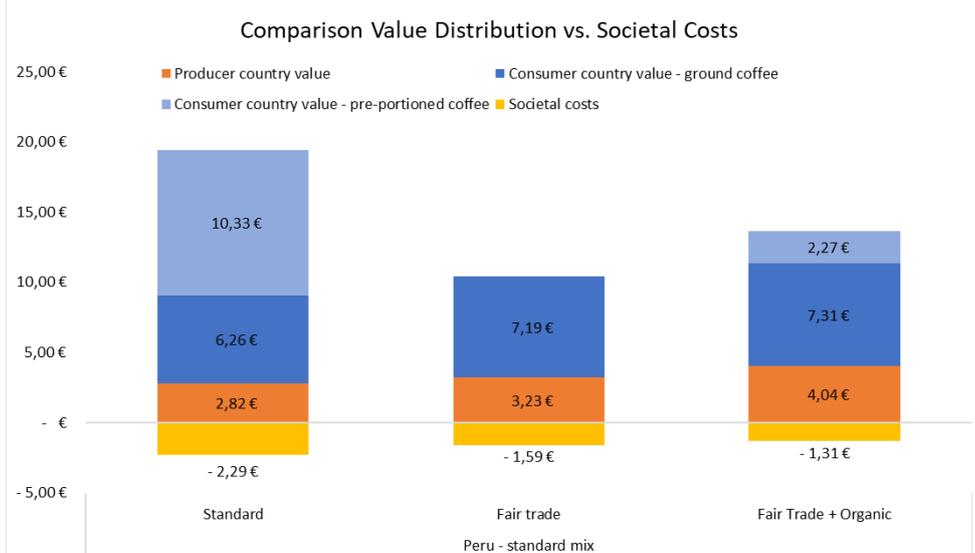


Figure 74. Comparison of distribution of value and of societal costs in the Peru-France sectors. Source: BASIC.

Overall, our estimates indicate that these differences in societal costs correlate to a distribution of value that better supports producing countries, particularly in the case of the non-organic Fairtrade sectors. However,

these results are due in large part to the high proportion of pods and capsules in the standard sector (compared with the fair trade and organic sectors). When we study each format separately, we see that the producers receive a larger profit share in the case of fair trade ground coffee in 250 g packs (whether organic or not), with the differences being much less noticeable for portioned coffee, in particular in the case of capsules, where the chain players (coffee roasters and distributors) receive more than 90% of the profit.

2.2. Analysis of the Colombia to France value chain

2.2.1. Colombia is a coffee growing country, a major stakeholder on the international market which the government forced to organise itself around a national federation (FNC)

Colombia is the 5th producing country of green coffee imported to France ³⁵⁶, almost on the same level as Peru. In 2016, the volume of direct importation rose to 9592 tons, a significant decline over the past 20 years (for comparison 36,000 tons were imported in 1994).

Esteemed for the quality and aromas of its coffee, Colombia has succeeded in developing and stamping its "national brand" on the international market. So much so that its coffee sells at a higher price than other Arabicas.

In 2016, Colombia was the third producer of coffee and the second producer of Arabica (it hardly produced any Robusta). Its production reached 840,540 tons over a surface area of 940,919 hectares. ^{357 358}

The coffee sector in Colombia employs some 3.5 million persons and accounts for 30% of the rural jobs in the country. About 560,000 families, that is 2 million persons in all draw all or part of their revenue from coffee production ³⁵⁹.



Figure 75: Areas of altitude and areas of coffee production in Colombia.

Colombia is crossed from North to South by three mountain ranges with multiple micro-climates and optimal zones for the production of coffee. The proximity to the equator means there is a sunny period³⁶⁰ which is especially ample and allows coffee harvesting for practically all the year³⁶¹.

As for Peru, the coffee plots of land are situated on the eastern slopes of the Andes (see map above) offering sloping lands which are sometimes difficult to reach which is why mechanizing coffee growing is difficult. This

³⁵⁶ Note that this concerns only the importation of green coffee in France, equal to about 50% of the total volume of coffee consumed in France. The remaining 50% is imported as roasted coffee whose origin corresponds to that of the roasting country and not to the country of production.

³⁵⁷ USDA, 2018

³⁵⁸ FAOStat, 2018

³⁵⁹ Technoserve, Colombian Coffee Production and Costs, 2014

³⁶⁰ Length of day

³⁶¹ Nevertheless, there are two peak times for harvest see USDA, Coffee Report Colombia, 2016

specific topography makes coffee production in Colombia little suited for a competitive strategy on account of costs, such as the one followed by Brazil.

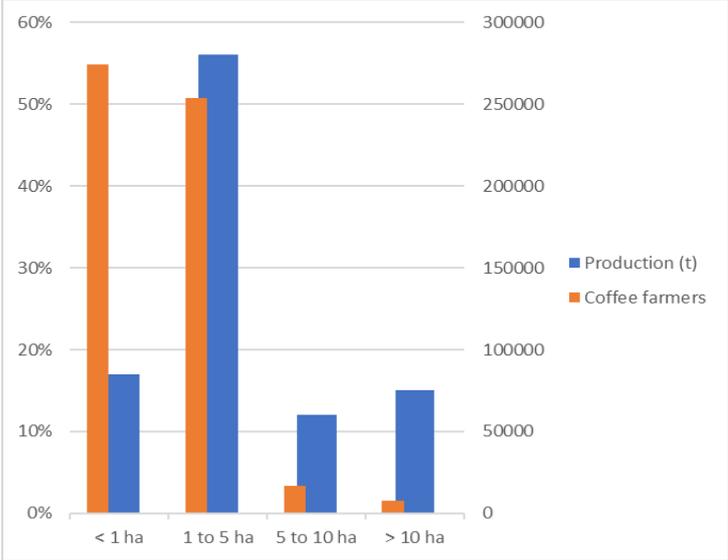


Figure 76: Sharing of coffee production according to holding and the amount of coffee growers. Source: BASIC, according to ILO³⁶²

On these slopes reside about 95% of coffee producers who cultivate over 70% of Colombian coffee on plantations of an average of less than 5 hectares³⁶³.

For approximately the last ten years, a tendency for a decrease of the large plantations (over 10 hectares) has been observed due to their reorientation towards other more profitable cash crops such as avocado and the tendency to divide areas between inheritors³⁶⁴.

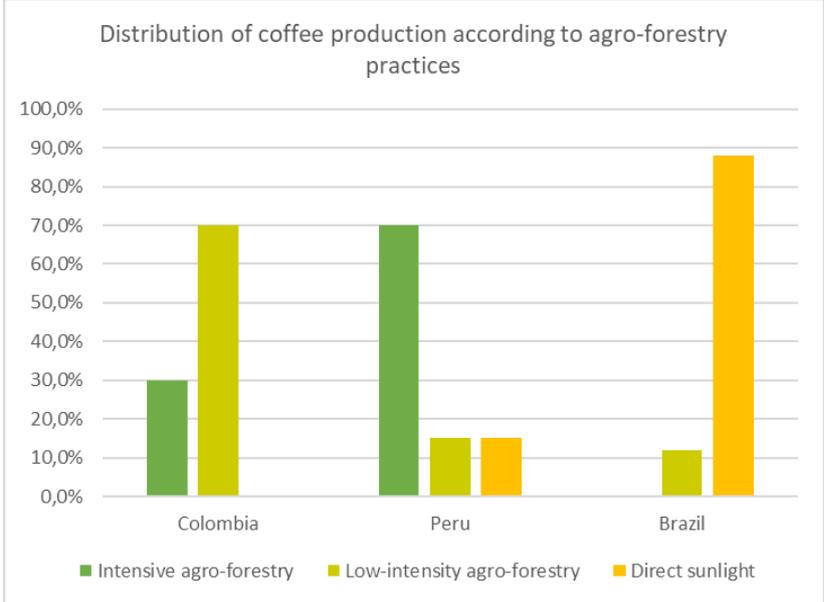


Figure 77: Sharing of coffee production according to agroforestry practices. Source: BASIC according to Bacon, 2015³⁶⁵

³⁶² ILO, Colombia case study, 2017

³⁶³ Medium-sized farms (3-5 hectares) are the dominant production model in Colombia (ILO, Columbia case study, 2017).

³⁶⁴ Technoserve, Colombian Coffee Production and Costs, 2014

³⁶⁵ Bacon, Fair trade coffee and environmental, 2015

These producers most often cultivate coffee according to an agroforestry system even if different from the one carried out in Peru (see below): the majority of Colombian agroforestry systems have fewer shade trees and a reduced (greatly) amount of fuel³⁶⁶.

Colombia, a historical actor in the world coffee sector

At the end of the 19th it is in the context of high prices that Colombian coffee production developed based on a model of large plantations which used a semi-slave system of working. At the time, coffee was the primary source of revenue for the country's exports - and it still was until the 1950s³⁶⁷.

In the beginning of the 1950s, Colombian coffee production was transformed: the right to work was regulated in the large coffee operations. The latter eventually lost their profitability as the costs of the workforce increased. Little by little, they were replaced by small plantation which mainly used family labour on smaller plots of land³⁶⁸. These emerging family operations made use of pulper machines which were recently marketed. Since they were now able to integrate the first level of wet treatment into their parcels of land, they were better able to add value to their coffee by selling parchment coffee instead of cherry coffee³⁶⁹.

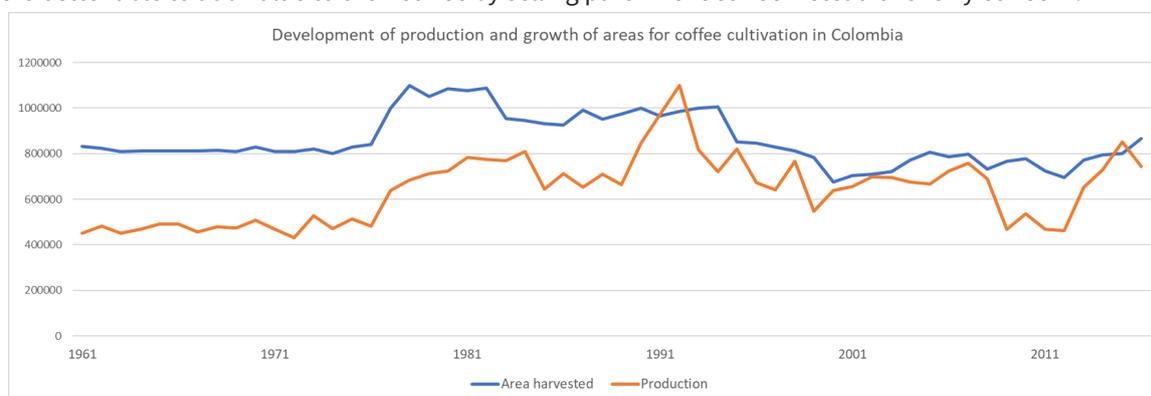


Figure 78: Evolution of coffee production and coffee areas in Colombia, 1961-2016. Source: BASIC according to FAOStat

Ironically, this emergence of small family plantations corresponded to a period where coffee lost some of its importance in Colombia.

This decrease in the importance of coffee is explained by the adoption of a deliberate policy of diversification of the agricultural economy which mainly supported growing, horticulture and production of fruit.

These last years also corresponded to those of armed conflict in Colombia which was particularly severe in the rural areas and the fall in prices following leaving the AIC. Consequently, producers and their families partially left their coffee plantations³⁷⁰ while others removed their coffee plants to cultivate cocaine³⁷¹. This being said, coffee still remained a strategic sector for Colombia.

Modernisation of the coffee operations could be carried out due to a strong institutional context

After very troubled and difficult decades for Colombia, the government chose to relaunch the coffee industry at the end of the 1990s. To do this, the Colombian government was supported by the *Federación Nacional de Café* (FNC) which has existed since 1927 and conferred a crucial role in organizing its subsidiary in support to

³⁶⁶ Bacon, Fair trade coffee and environmental, 2015

³⁶⁷ Daviron, The Coffee Paradox, 2007

³⁶⁸ This evolution started in Colombia before spreading to most of the producing countries in the second half of the 20th century (Daviron, The Coffee Paradox, 2007)

³⁶⁹ Daviron, The Coffee Paradox, 2007

³⁷⁰ D. Allier, Dynamique du café au Pérou et marché int, 2011

³⁷¹ Technoserve, Colombian Coffee Production and Costs, 2014

family operations and for the stability of their income. To do this, the FNC made use of various mechanisms: support through purchase guarantees funded by taxation on export, coffee storage, funding of social infrastructures within the communities and control of exports for private dealers³⁷².

FNC was also in charge of an ambitious policy of access to credit and technical advice whose purpose was to recapitalize small family plantations so they could become more modern³⁷³.

A five-year plan was implemented whose purpose was to make good practices widespread to ensure standard quality and improve the physical quality of the coffee. Production was standardized, thanks in particular to renewing the coffee plants: the improved Caturro and Castillo varieties developed by Cénicafé (FNC's Institute for Agricultural Research) are now cultivated in over 70% of the coffee areas deposing the historic Bourbon and Tipica varieties³⁷⁴.

These improved varieties are particularly more resistant to illnesses and have been imposed on producers following the severe rust episode in 2011 (access to FNC's credit was conditional upon acceptance of the new varieties developed by Cenicafé)³⁷⁵. However, these new varieties have a shorter life span (about 8-10 years vs. 30 years for the Tipica variety) which obliges producers to renew their plantations more regularly and to commit to a logic of intensification of their operations.

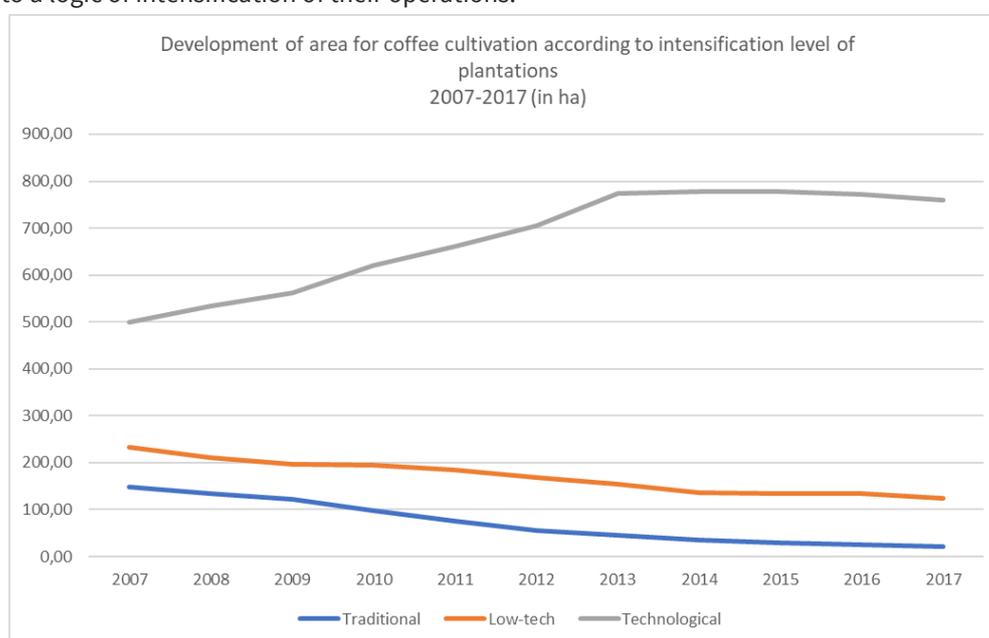


Figure 79 Growth of coffee production according to the level of intensification, 2007-2017 (Source: BASIC according to FNC, 2018)
 (1) Tradicional: Típica sin trazo o típica con densidad menor a 2500 árboles.
 (2) Tecnificado Envejecido: Cultivos al sol mayores a 9 años, o cultivos a la sombra total o parcial mayores a 12 años
 (3) Tecnificado: Cultivos al sol menores o iguales a 9 años, o cultivos a la sombra total o parcial menores o iguales a 12 años

With the change in varieties, the agricultural practices also had to develop: alignment of rows, decrease in tree cover to facilitate maintenance and harvesting, systematization of use of crop protection products and artificial fertiliser, etc.³⁷⁶ These new techniques are nowadays widely used for Colombian coffee cultivators with an increase the last 10 years of over 50% of coffee areas cultivated according to "technical" systems (see above)³⁷⁷.

³⁷² Technoserve, Colombian Coffee Production and Costs, 2014

³⁷³ Technoserve, Colombian Coffee Production and Costs, 2014

³⁷⁴ ILO, Colombia case study, 2017

³⁷⁵ Hermelin, Mémoire Coopérative Café Colombie, 2014

³⁷⁶ Hermelin, Mémoire Coopérative Café Colombie, 2014

³⁷⁷ As seen previously, these technologised systems relate mainly to sun-grown coffee plantations with plants renewed approximately every 10 years (FNC, 2018).

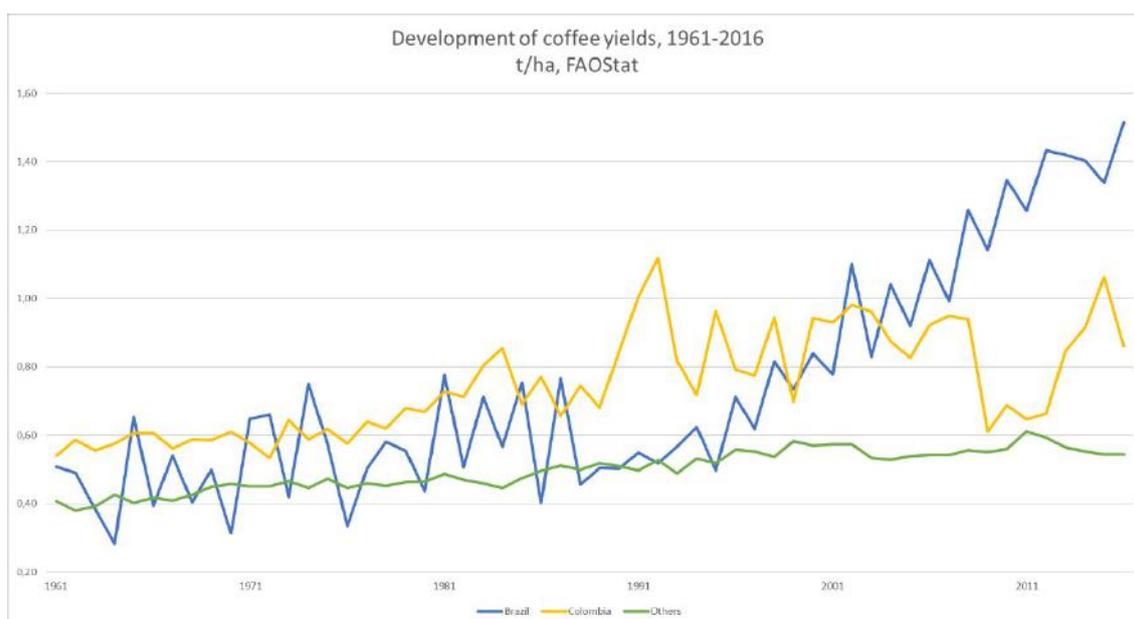


Figure 80: Evolution of coffee yield from 1961 to 2016. Source: BASIC according to FAOStat

Since the 1960s, the cumulative effect of policies implemented by FNC supported by the Colombian government have made it possible for coffee producers to obtain an average yield which is 50% higher per hectare³⁷⁸ than the average of other producing countries except for Brazil³⁷⁹ (the 2009 to 2012 low point was due to the rust epidemic). These work patterns cannot be mentioned apart from recalling those of Brazil: increase in production and yield and reduction of cultivated areas³⁸⁰.

A quality strategy which was strengthened as time passed with the promotion of single origin.

The modernisation policy led by FNC was doubled by the differentiation strategy of Colombian coffee in the global market and the promotion of coffee consumption in the national market³⁸¹.

Internationally, an effective strategy with the creation of "country brand" was carried out for client markets: the number of large brands cultivating Colombian coffee rose from 3 in 1961 to 53 in 1970.

Dynamic marketing was carried out by the creation in 1981 of a logo which typically represented Colombian coffee (see opposite) which made reference to the origin so as to promote sales. Once more, the strategy pays: demand for 100% Colombian coffee is 2.5 times higher than other coffees of the same category of quality.

In Colombia, FNC has also created a chain of Juan Valdez coffee shops in 2002 on the Starbucks model so as to promote the consumption of a quality coffee produced in the same territory³⁸². After being developed in Colombia, the chain started to spread in the United States³⁸³.



Figure SEQ Figure |* ARABIC 81: Promotion logo of Colombian coffee by FNC, 1981
Source: FNC

Colombia has thus succeeded in imposing itself as one of the leaders of quality Arabic coffee, the players of the sector have managed to organise themselves to produce a quality coffee whose organoleptic qualities are widely known in the markets and becoming widespread thanks to the total control of the chain of production.

³⁷⁸ FAOSTAT

³⁷⁹ D. Allier, Dynamique du café au Pérou et marché int, 2011

³⁸⁰ D. Allier, Dynamique du café au Pérou et marché int, 2011

³⁸¹ D. Allier, Dynamique du café au Pérou et marché int, 2011

³⁸² <https://www.juanvaldezcafe.com/es-co/sostenible-desde-origen/nuestra-historia/>

³⁸³ <https://www.juanvaldezcafe.com/es-co/sostenible-desde-origen/nuestra-historia/>

Result: from 1990 to 2017, the export price of Colombian coffee was 10% higher than the average price of all Arabicas (namely about + 12 dollars/kg)³⁸⁴.

2.2.2. Very organised conventional sectors in Colombia to benefit producers but which seem relatively little valued further down the chain

Colombian coffee exporting sectors are highly organised under FNC

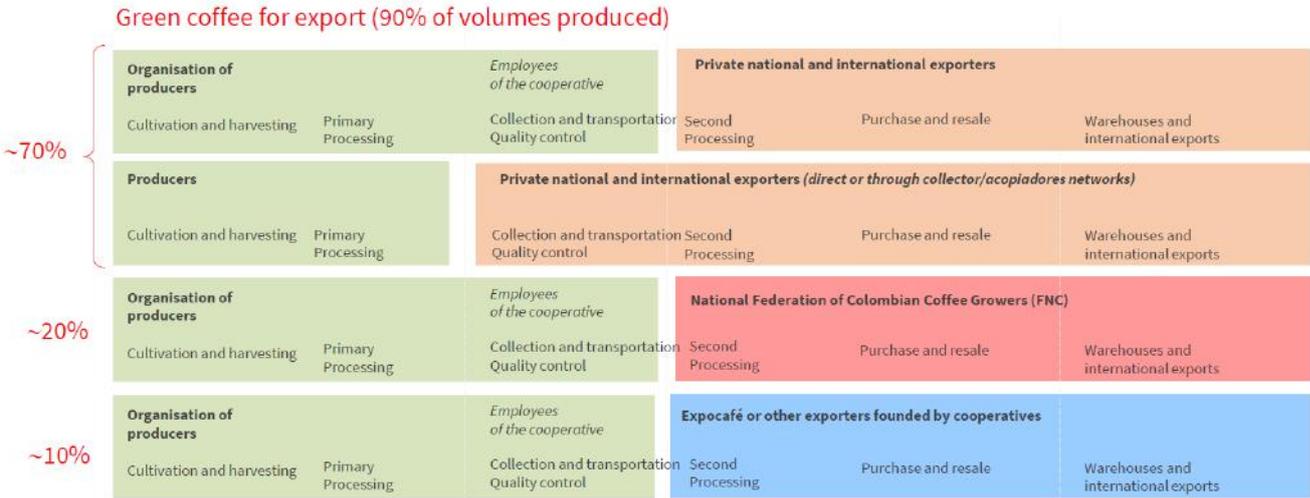


Figure 82: Marketing chains for Colombian green coffee for export. Source: BASIC

The majority of volumes (about 70%) use private exporters for the majority of multi-nationals like Volcafe, Neuman Group and Ecom Trading. The cooperatives - and to a lesser degree individual producers- sell them directly their parchment coffee or sometimes, via intermediary collectors³⁸⁵. These exporters are grouped within Asoexport association and funnel about 70% of the Colombian exported coffee³⁸⁶.

Simultaneously, FNC also organises a specific sector which has funnelled about 20% of volume during the past decade (mostly in the famous "coffee axis" central coffee area). One finds there the producers with the highest level of technological development (production systems of 5 hectares or greater, with little shade, improved varieties and more chemical inputs).³⁸⁷

Most of these coffee growers do their first processing by wet cleaning their operations. They belong to one of the 36 primary cooperatives, and are also members of FNC. These cooperatives take charge of harvesting and quality checking before selling the coffee to the NFC which is in charge of the second processing (parching) and of export.

A feature of the coffee sector in Colombia, the FNC, besides being an operator in the sector that channels part of the volume, also has the role of regulator which grants export licenses for example.

Finally, producers operating in "alternative" sectors get about 10% of the amount. They are especially present in the "new" coffee regions in the south and north of the country, which developed after FNC's loss of power in the 1990s (this period having been characterized by a significant reduction on the part of FNC in the total country exports). Producers in the coffee areas have built up their systems of production on the models which are more extensive than that of the coffee axis: agroforestry with little use of chemical inputs or organic

³⁸⁴ ICO, 2018
³⁸⁵ http://www.cafedecolombia.com/cci-fnc-es/index.php/comments/cadena_de_suministro_en_colombia_disenada_para_favorecer_los_ingresos_del_p/; Most Colombian coffee producers sell parchment coffee rather than the cherries
³⁸⁶ Interviews with stakeholders in the Colombian coffee industry
³⁸⁷ Hermelin, Memoire Coopérative Café Colombie, 2014

farming on the smallest areas and with the weaker yields³⁸⁸. They produce a more differentiated and often certified coffee.

The organisation of the alternative sector is quite similar to that of FNC and its producers are members of FNC which created an export system (the main one being Expocafé).

These three big types of sectors are not airtight but are, on the contrary, interconnected: cooperatives of FNC sector (see alternative sector) often market their coffee via private exporters rather than the FNC, producer members of FNC cooperatives may choose at any time to sell their coffee directly to private exporters, cooperatives of the alternative sector sometimes sub-contract the second processing to the FNC sector (Almacafe).³⁸⁹

Whichever type of sector, the price set every day by the FNC serves as reference to which purchasers align themselves a priori. In fact, Colombian regulation stipulates that, at any moment, a coffee producer may request the FNC to come and take his coffee and to buy it for him at the published price (the FNC cannot thus refuse since this obligation is essentially effective in the central area). FNC thus managed to influence the prices of a large number of coffee exporters in Colombia.³⁹⁰

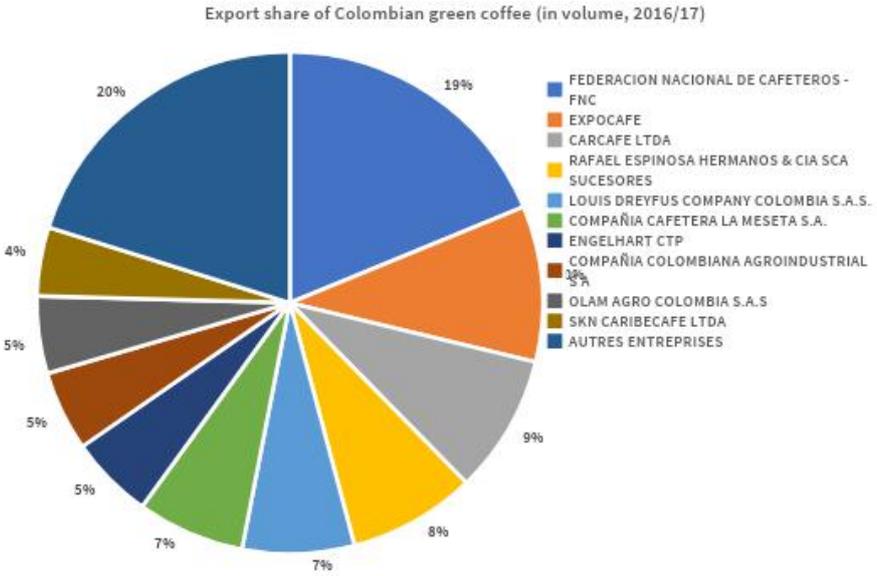


Figure 83. Share of exportation of green Colombian coffee (in volume, 2016/17). Source: BASIC.

³⁸⁸ Hermelin, Memoire Coopérative Café Colombie, 2014

³⁸⁹ Interviews with stakeholders in the Colombian coffee industry

³⁹⁰ Interviews with stakeholders in the Colombian coffee industry



Figure 84: Evolution of export prices according to exporter, 2000-2017. Source: BASIC according to FNC

In 2017, the FNC funnelled just under 20% of coffee exports (in prices), the rest was transited by other exporters, mainly multi-nationals. As the export price is very similar among all the exporters (due to prevailing price regulations), the decrease in the relative share of the FNC in Colombian coffee exports is explained by the rise in quantities sold outside the FNC.³⁹¹

To provide a more detailed analysis of the repercussions for producers over time, we reconstructed the mean change in export price (FOB), in the price paid to producers, and in the production costs over the last ten years, stated in local currency and adjusted for inflation.

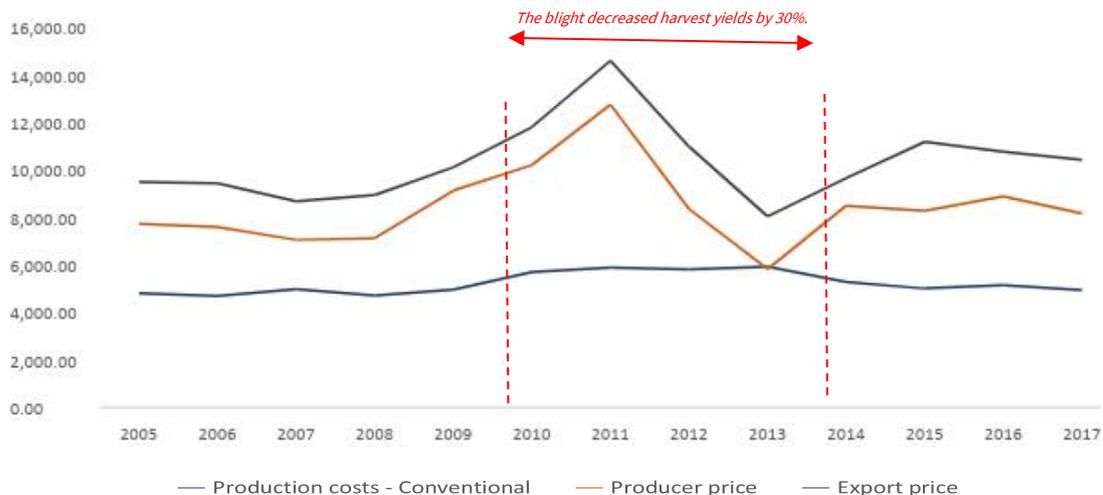


Figure 85. Evolution of the loss in value of coffee up to FOB in Colombia. Source: BASIC.

Prices paid to farmers are highly variable and directly reflect variations in the export price. Since 2005, they have increased every year (except in 2015) to 80% of the FOB price, one of the most robust rates among coffee-producing countries. This situation directly reflects the FNC's policy of supported prices and its influence on other industry players.

Consequently, intermediary players receive a limited share of the export value, which stays constant over time (with the exception of 2015, with an increase that lasted only one year).

In comparison, production costs progressively rose until 2013 (+40%), reflecting the growing cost of agricultural labour in Colombia and the rise (in price and volume) of inputs used in increasingly modern

³⁹¹ FNC

operations. They decreased slightly due to improved yields following the stimulus plan initiated by the FNC after the blight crisis.

As a result, the profit margins per unit for farmers seem increasingly variable and, in 2017, are slightly higher than in 2005 (despite the actual price drop of Arabica on the New York Stock Exchange, reflecting the positive image of Colombian coffee on the market). The 2011 spike in prices is the direct result of the blight crisis that ravaged the country and caused a more than 30% decrease in production. Two years later, in 2013, prices fell again, depriving farmers of any income. The State then had to intervene by implementing a direct subsidy plan for the farmers (Protection for the Income of Farmers) when prices dropped to below USD1.50/lb. The Colombian government consequently spent over USD600 million in direct aid that year.³⁹²

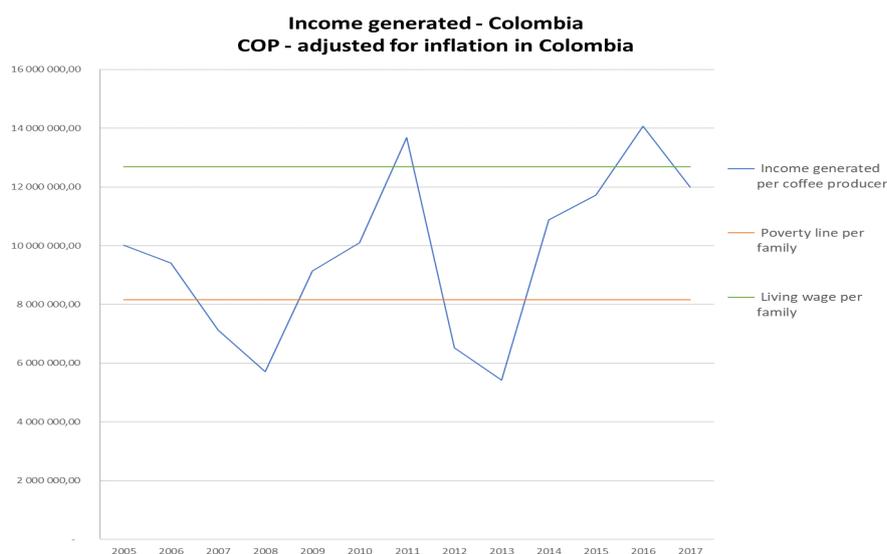


Figure 86. Change in income of Colombian coffee growers and comparison with the poverty line and living wage. Source: BASIC.

The impact of the decline in prices on farmers should nevertheless be qualified, as the increase in yield and (sometimes) in the size of land plots allowed numerous coffee growers to maintain their incomes over the past few years. Therefore, our estimates based on the evolution of prices and production costs show that Colombian coffee growers have succeeded overall in generating an income above the poverty line since 2005 (except in 2007-08 and 2012-13, when income was slightly below) and have even managed to earn an income near or above the living wage in 2011 and since 2015.

In France, Colombian coffee is essentially marketed as single-origin, the value of which basically depends on format and brand positioning

Given its price and reputation, Colombian coffee is a high-quality product that is sold on the French market primarily as single-origin 100% Arabica, but it may also occasionally be used to create more standard coffee blends³⁹³. In the absence of public statistics on the price of these products sold by large retailers, we collected price data from six different brands at the end of July 2018 at nine supermarkets and big-box superstores in Paris and around the country.

³⁹² Technoserve, Colombia: A business case for sustainable coffee production, 2014

³⁹³ Interview with a female harvester of speciality coffee

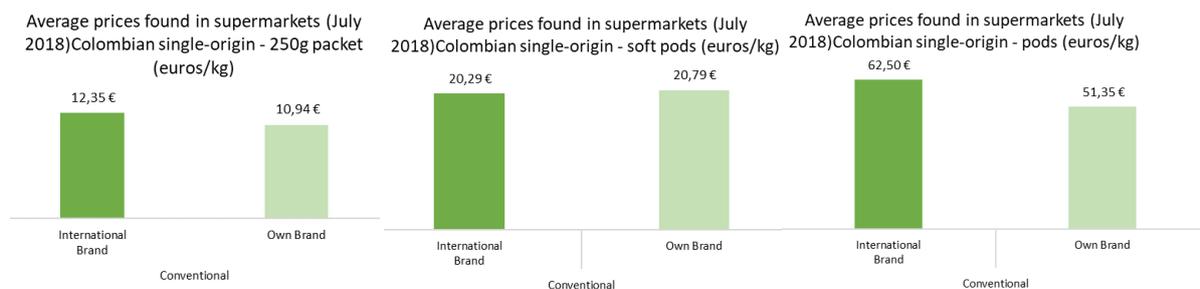


Figure 87. Consumer pricing data for coffee blends sold in France. Source: BASIC.

The resulting data show first of all that "Colombian single-origin" coffees are marketed equally by major brands and private labels. However, we only identified one or two international brand references for each format (bag, pod, capsule). As for the private labels, if each brand name markets a 250 g ground bag of Colombian coffee, we have identified only one among six brand names with private-label, Colombian single-origin pods and capsules.

The effect of the label "Colombian Coffee" on the final consumer price is reduced, even non-existent. The 250 g bag is sold for less than the equivalent primary blends of major brands (€13.95/kg) and 10% higher for private labels. Capsules are sold at a price per kilo nearly 10% above the comparable coffee blend. These differences seem to reflect the 10% price differential of Colombian coffee on the New York Stock Exchange.

Our data also show a highly significant effect of format differences on "single-origin Colombian" coffees. With international brands as well as private labels, the average prices per kilo of the pods are 65% to 70% higher than the 250 g bags. As for capsules, they are five times more expensive per kilo than 250 g bags (these differences are more pronounced than for coffee blends - see the section on Peru for more details). These gaps demonstrate the increased capacity of brands to create (much) more value thanks to the development of new formats and marketing, whereas the distinction of origin seems to generate a very weak difference in value creation in the eyes of consumers.

To go a step further, we have compiled estimates of the value distribution for blends containing Colombian coffee, based on information on logistics and processing costs reinforced by various French stakeholders (merchants and roasters) ³⁹⁴.

³⁹⁴ Value shares for coffee roasters and distributors are only indicative on account of the lack of available data in these links. The coffee roaster's share is a minimum figure calculated from the estimated direct costs of the coffee processing and logistics obtained from professionals, and of the added value declared in the accounts of French establishments which produce coffee. The value share of distributors is what is still needed to reach the price stated for the consumer.

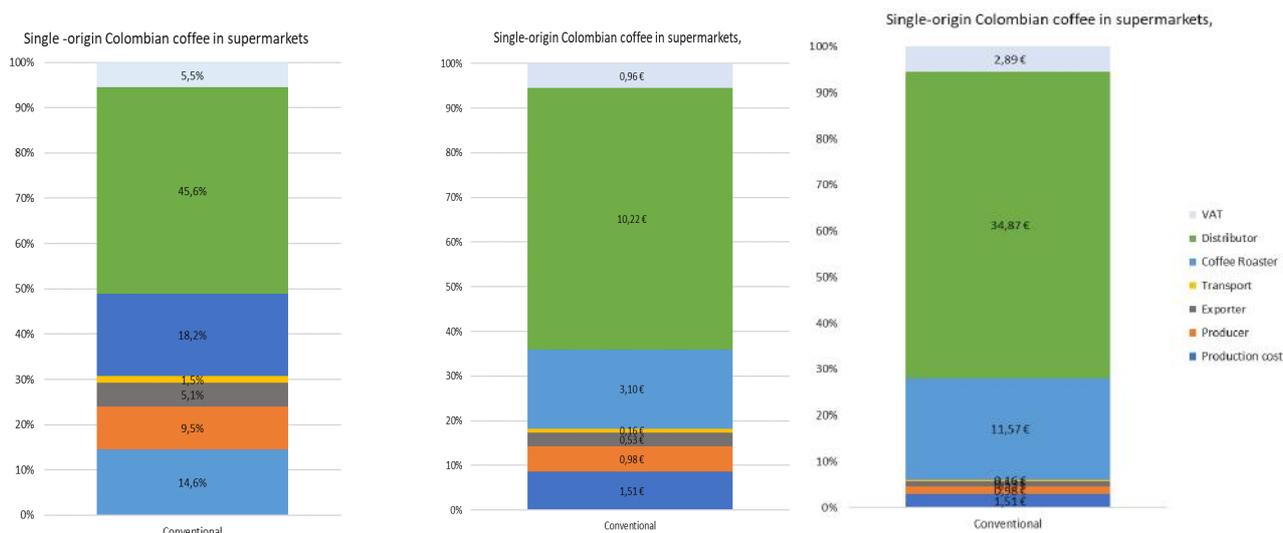


Figure 88. Reduction of coffee value excluding discounts from the Peruvian producer to the French consumer. Source: BASIC.

Compared to Peru, Colombia manages to obtain a more significant value share. From the final price of a 250 g bag of ground coffee, the producing country obtained 29% of the value in 2017 versus 24% for Peru. Out of this total, 9.5% of the value came back to Colombian farmers, a share nearly twice as large as that of Peruvian farmers (but smaller than Ethiopian farmers).

Moreover, as for coffee blends, our estimates show the declining share of the value returns to the producing country based on format. It is practically divided in half in the case of pods (accounting for no more than 17% of the final price). It drops even more when Colombian coffee is marketed in capsules, with the producing country obtaining merely 6% of the total value, of which only 1.9% goes back to the farmers, or five times less than for a 250 g bag of coffee.

2.2.3. Socially Limited Yet Environmentally Significant Negative Impacts

Farmers benefit from a living wage but are increasingly dependent on a capital-intensive production model

Even if the value chain pays participants who are further down the chain much better, our previously presented estimates show that the income of Colombian coffee growers nearly reaches a living wage, especially since 2015.

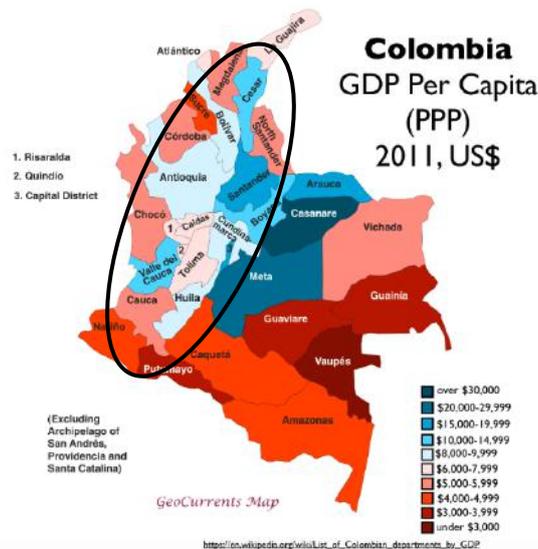


Figure 89: Geographic distribution of GDP per capita in Colombia and coffee-producing zones (Source: <http://www.geocurrents.info/gc-maps/geocurrents-maps-by-topic/geocurrents-maps-of-gdp-per-capita>)

This situation seems confirmed by Colombian statistics that show coffee-producing zones as those where GDP levels per inhabitant are above the national average. This was made possible through the intervention of the FNC, notably its support in modernizing operations and in improving productivity, which was further reinforced following the unexpected blight crisis of 2011.

Coffee sector in Colombia

Complete diagram V3

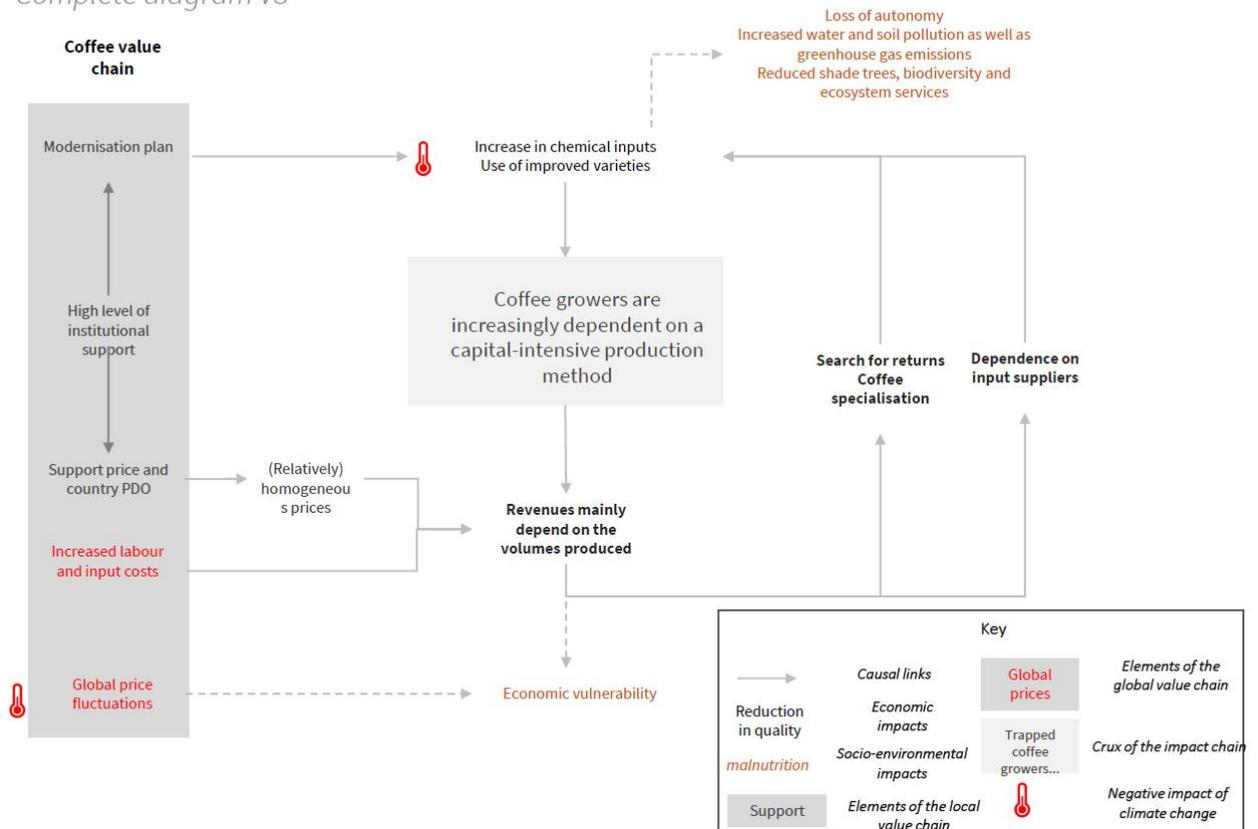


Figure 90: Diagram of the impact of Colombian coffee-growers, conventional method (Source: BASIC)

The FNC's actions thereby encouraged Colombian farmers to adopt a more capital-intensive model (more so than in neighbouring countries such as Peru), on which they are increasingly dependent for several reasons.

First of all, the farmers' income is essentially correlated with the quantities they manage to produce. In fact, the prices they obtain are rather uniform due to the FNC's policies (benchmark prices and protected geographic indication - Colombian coffee), and production costs are high compared to other origins, such as Peru (more than double, according to our estimates), a situation exacerbated by the trend in rising costs of chemical inputs (indexed to the price of fuel), of labour (+ 3% per year for thirty years ³⁹⁵), and of often unfavourable exchange rates³⁹⁶.

With weak margins per kilo of green coffee produced, farmers are constantly looking to improve their yield (following agricultural models dominant in Europe and the United States) and tend to focus on specialty coffee to improve their income. Consequently, they tend to continually adopt new, improved varieties and to use ever more inputs.

The majority of those who lean towards this strategy of increased productivity seems to successively lose control of their production model and increasingly depend on external players: input suppliers, research centres, coffee institutions (co-ops, FNC), and merchants.

Moreover, they suffer the consequences of the rising volatility of global exchange rates, from which existing regulatory tools do not protect them. While the goal of the FNC is to enable farmers to receive 80% of the export price regardless of its level, its action does not guarantee that they can cover their production costs in case of a price drop. As the generated margins are weak per kilo of coffee, the economic vulnerability of farmers thereby tends to increase with the adoption of more capital-intensive models.

Despite an effort by the institutions to mitigate these negative effects during periods of low prices (just as direct subsidies were paid in 2013), there are certain years in which coffee farming is not profitable. As such, the risk of resorting to child labour seems to have increased in the past few years.³⁹⁷

As for seasonal workers, their conditions remain difficult. Nearly all of them are hired informally, and in zones where the labour supply is greater than demand, cases of payment below minimum wage, non-compliance with hourly limits, and employment of minors have been noted.³⁹⁸

In comparison, a growing portion of the population has access, in urban zones, to economic opportunities that are better-paying, less risky, and less time-consuming than coffee growing.³⁹⁹ Consequently, farmers increasingly question the opportunity cost of coffee production.⁴⁰⁰

As a result, we are witnessing the ageing of coffee farmers, the difficulty of handing over operations, and the risk of knowledge loss with repercussions to come in terms of productivity and coffee quality.

This negative dynamic is amplified by the inequalities faced by women coffee farmers. Even though they carry out a large portion of the coffee activities (sorting and drying the coffee, machine maintenance, administrative tasks, etc.), they are not considered equal to men. Their husbands often hold the deed to the land (even if land ownership is theoretically joint), manage the greatest portion of coffee-derived income (women only receive a small share), and benefit from technical support (while their wives do not).⁴⁰¹

Given these stakes, some farmers seek to remove themselves from this dynamic via two main strategies⁴⁰²:

- The trend towards specialty coffees, affecting 25% of farmers located at the highest altitude
- Production diversification (for about 21% of farmers located at lower altitudes), with the notable return to cultivation of the coca plant during the most unfavourable periods.

³⁹⁵ Technoserve, Colombian Coffee Production and Costs, 2014

³⁹⁶ Univ Ulrecht, Impact of different certification programmes in Colombia, 2015

³⁹⁷ Univ Ulrecht, Impact of different certification programmes in Colombia, 2015

³⁹⁸ Univ Ulrecht, Impact of different certification programmes in Colombia, 2015

³⁹⁹ Technoserve, Colombian Coffee Production and Costs, 2014

⁴⁰⁰ Technoserve, Colombian Coffee Production and Costs, 2014

⁴⁰¹ GCP, Gender equality analysis in Colombia's coffee sector, 2016

⁴⁰² Technoserve, Colombian Coffee Production and Costs, 2014

Climate change reinforces income insecurity and farmers' loss of independence

Coffee-producing zones in Colombia are located in regions identified as vulnerable to changes in climate, the increase in extreme weather events, and greater food insecurity.⁴⁰³

The frequency and intensity of La Niña (less sunshine and more humidity) and El Niño (periods of drought) extreme climate phenomena have increased in the last ten years.

At the end of 2011, the losses caused by La Niña throughout the country (beyond coffee production) were estimated at 7.8 billion euros: damaged infrastructure, farmland flooding, etc.⁴⁰⁴

Their consequences have caused farmers to migrate to increasingly higher altitudes to produce coffee, thereby increasing the pressure on these fragile ecosystems.

Climate change is an additional factor over which farmers have no control, with particularly high risks, notably due to their specialization in coffee production that is sensitive to climate variation.

Climate change has a direct impact on two phenomena that accentuate the loss of independence and the insecurity of farmers' income:

- It feeds price volatility by increasing the frequency of extreme climate events.
- It encourages the appearance and spread of disease due to the increasing frequency of hot and humid episodes, which affect the profitability of operations (higher production costs, periodic decrease in volume⁴⁰⁵). The coffee blight crisis between 2008 and 2011 is one example. Production was reduced by nearly 30% with a direct impact on the income and living conditions of farmers and labourers.⁴⁰⁶

In the end, climate change reinforces the dependence of farmers on external players to stop or prevent the spread of disease and to adapt to weather events.⁴⁰⁷

These impacts come at a cost to society (and to a smaller extent to the rest of the chain) that must be borne by individuals and public authorities in Colombia to deal with the social and environmental consequences of supply chain operations. We call this spending societal costs.

The social costs are more limited than in other countries we have studied, but the environmental component is more pronounced.

The first component of social costs generated in Colombia results from farmers' inability to earn enough to achieve an income that allows them – as well as their family – to live with dignity from their work. A study by the CIMS estimates the living wage in Colombia at \$1,144 per person per year in 2015 (\$1,222 in 2017, taking domestic inflation into account)⁴⁰⁸.

Considering that the equivalent of 300,000 rural families, counting on average four members, depend solely on coffee to live, exported coffee should have brought in approximately \$1,322 million countrywide in 2017 in order to enable them to reach a sustainable standard of living (in proportion to exported quantities compared with the total produced).

Yet exported coffee brought farmers only \$851 million in 2017, for a social cost of \$471 million.

Moreover, labourers employed in coffee production find themselves in an even more precarious position. The previously-cited CIMS study shows that the minimum wage is 30% lower than the necessary wage to guarantee

⁴⁰³ World Food Programme

⁴⁰⁴ Univ Utrecht, Impact of different certification programmes in Colombia, 2015

⁴⁰⁵ Hermelin, Memoire Coopérative Café Colombie, 2014

⁴⁰⁶ Springer, Coffee Rust Crisis in Colombia, 2015

⁴⁰⁷ Hivos, Coffee Barometer, 2014

⁴⁰⁸ CIMS, Tracking minimum and living wages in the banana sector, study for the World Banana Forum, 2015

a decent standard of living⁴⁰⁹ (available data did not provide for an estimate of the associated social cost due to a lack of information on the number of workers and their working conditions).

Another social cost is tied to expenses undertaken by the Colombian government to guarantee essential public services (education, healthcare, social affairs, water/electricity, transportation, law enforcement, agricultural support, and environmental protection) in coffee-producing provinces (Antioquia, Caldas, Cauca, Cundinamarca, Huila, Santander, and Tolima).

Broken down to the proportion of families that make a living from coffee in these provinces, they totalled \$471 million in 2017. In comparison, the FNC deducts an average contribution in the range of \$0.06 per exported kilo, of which the majority is invested in public service infrastructure in the coffee-producing communities, or a total of \$105 million in 2017. Added to this are taxes on benefits and income in the range of \$129 million.

We have therefore been able to estimate a social cost of \$236 million in 2017, corresponding to national expenses not covered by the taxes of supply chain participants.

The last component of social costs is tied to environmental damage.

The first component results from emitted greenhouse gases, starting with agricultural production and ending with product consumption in France. These emissions add up to the following approximate figures:

- Up the supply chain: 8 kg of CO₂ for each kg of green coffee produced in terms of coffee growing (on the basis of an input-intensive average production in Colombia)
- Downstream: 25 kg of CO₂ for each kg of coffee roasted, packaged into capsules or packets, marketed and consumed (the additional emissions linked to capsules are potentially compensated by an overload of coffee used in filter machines).

Knowing that current expenses undertaken globally to fight climate change add up to nearly \$300 billion per year (CO₂ emissions having global consequences), we can estimate that every kilo of CO₂ emitted represents a direct cost of about \$0.008. In terms of coffee exported from Colombia in 2017, this amounts to a social cost of \$259 million.

A second component of social and environmental costs concerns nitrate contamination of waterways tied to the pronounced use of chemical fertilizers in the Colombian coffee industry. In general, the country is one of the leading users of fertilizers and pesticides in the world for agricultural production⁴¹⁰.

Recently, a study conducted by the research team, who developed a water footprint indicator, calculated the extent of nitrate pollution tied to fertilizers in the main Latin American water basins⁴¹¹. With respect to Colombia, this study estimates that coffee growing is at the origin of 12% of all the pollution in both main basins that supply 80% of the country's water consumption: The Magdalena River Basin and the Orinoco River Basin (coffee is therefore the second major source of pollution after domestic households and before industry).

However, Colombian government data show that the treatment required to remove these contaminants and make water potable would cost about \$1.349 billion per year.⁴¹² We can thus estimate that the societal costs linked to water pollution caused by coffee cultivation rose to about \$162 million in 2017.

We could not determine the societal costs linked to other, previously analysed impacts (specifically pesticide-related pollution and child labour). We lack data we can use to quantify the extent of these problems and the resulting societal costs.

⁴⁰⁹ Global Living Wage Coalition, Living Wage Report: Non metropolitan urban Ethiopia, 2017

⁴¹⁰ FAO, Water pollution from agriculture: a global review, 2017

⁴¹¹ Mekonnen M. et al., Sustainability, Efficiency and Equitability of Water Consumption and Pollution in Latin America and the Caribbean, 2015, in Sustainability 2015, 7, 2086-2112

⁴¹² USAID, Analisis sectorial agua de Colombia, 2016

The total estimated societal costs of conventional coffee cultivation thus reached \$1.119 billion in 2017 (see summary below). This is less than half the FOB value of 2017 Colombian coffee exports (but roughly equal to the value of Peruvian and Ethiopian exports). Nonetheless, the absolute societal cost exceeds \$1 billion, the highest of the three case studies.

Societal cost	Amount in 2017
Shortfall to be bridged in order to ensure a decent standard of living for coffee producers	\$471 million
Shortfall to cover State expenditure for essential public services infrastructure within coffee-producing provinces	\$236 million
Expenditure generated by greenhouse gas emissions	\$259 million
Expenditures resulting from groundwater nitrate contamination caused by using chemical fertilisers	\$162 million
TOTAL SOCIETAL COST	\$1.128 billion
<i>FOB value of coffee exports for comparison</i>	<i>\$2.757 billion</i>

2.2.4. Major positive impacts of combining Fairtrade certification with organic farming are greater than impacts of the UTZ system

In 2015, more than 60% of Columbia's coffee crop was certified using independent standards (Fairtrade, organic farming, Rainforest Alliance, UTZ, etc.) or "verified" using internal buyer requirements (Nespresso AAA, Starbucks CAFE Practices, etc.).

Colombia is thus the world's second largest producer of certified coffee after Brazil, meeting 17% of global demand. Only Peru has more coffee operations that have earned multiple sustainability certifications.⁴¹³

Fair trade was one of the first systems to emerge in Colombia in the 1990s, with the first Fairtrade certifications. The UTZ programme dates to 2002, when Expocafé began promoting UTZ as a private partnership with the Dutch NGO Solidaridad⁴¹⁴.

The Rainforest Alliance issued its first certification in Colombia in 2004, then expanded into the Santander and Cundinamarca regions in the heart of Colombia's coffee belt.

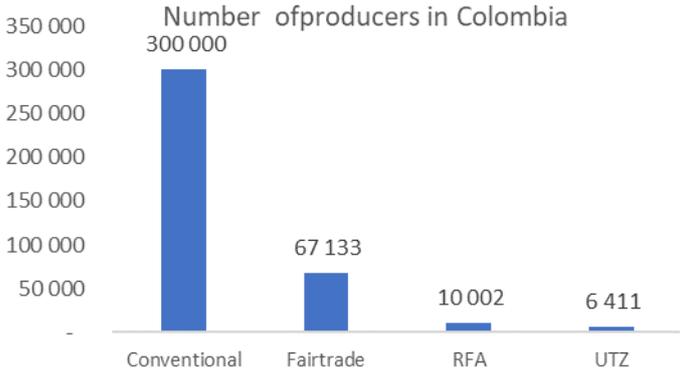


Figure 91. Breakdown of coffee growers in Colombia in 2015/2016. Source: BASIC, based on data from IISD, Fairtrade and UTZ-Rainforest

Fairtrade is one the most mature independent systems certifying Colombian coffee, with more than 67,000 growers who are members of certified cooperative (note that we were unable to obtain data for other Fairtrade labels). The Rainforest Alliance and UTZ have 10,002 and 6,411 cooperative members, respectively (The main cause of these two systems' weak growth is the low premiums they offer – roughly six cents USD per pound of

⁴¹³ USDA, Coffee Report Colombia, 2016

⁴¹⁴ CRECE, Impact Evaluation of UTZ certified program in Colombia, 2014 and

coffee. This premium is small compared to the costs of meeting Rainforest Alliance and UTZ agricultural practice requirements, specifically documenting a salaried workforce).⁴¹⁵

More recently, growers who run the smallest operations seem to be leaving the Rainforest Alliance and UTZ. However, the biggest growers are staying in these two systems, which allow them to sell large volumes⁴¹⁶. The volumes sold under Fairtrade conditions (around 20,500 tons) were about 2.5% of Colombian coffee exports in 2017 (779,000 tons according to ICO).

Organic certification is less developed in Colombia than in other coffee-producing countries in the study, and is most often combined with Fairtrade certification. In contrast, FLO Cert data show that only 24% of coffee produced by Fairtrade-certified organisations was also certified organic in 2016 (we could not determine the total volume of organic coffee produced in Colombia, which we could have used to estimate the volume of Fairtrade-certified coffee).

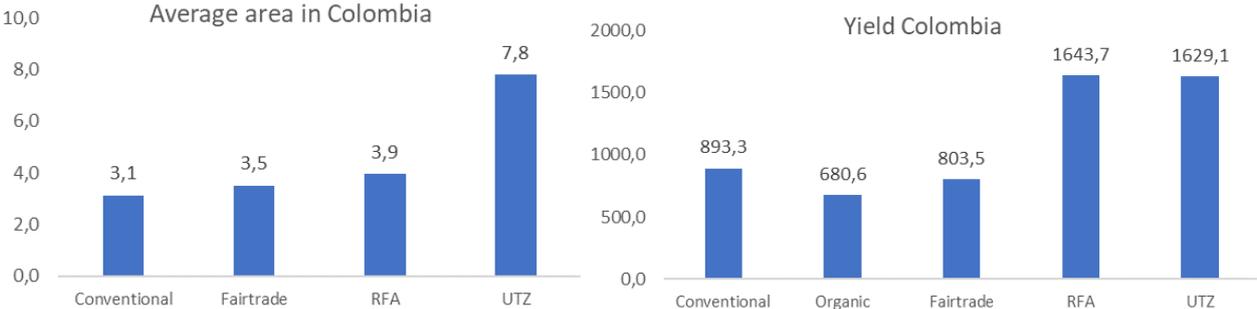


Figure 92. Average surface areas and yields in Colombia in 2015/2016. Source: BASIC, based on data from IISD, Fairtrade and UTZ-Rainforest

Examining beneficiary producer profiles, we see that data published by various organisations shows major differences between Fairtrade and organic farming compared to the Rainforest Alliance and UTZ. Fairtrade-certified cooperative members have areas and yields close to the country average. Rainforest Alliance- and UTZ-certified growers are twice as productive (with yields above 1,600 kg/ha), while UTZ growers have twice the average hectareage.

Available reports on Rainforest Alliance and UTZ certifications show that growers working in these two systems use much more intensive methods than the national average (with significant use of authorised inputs). Those methods predate implementation of the two certification systems (their production model has often been driven by the FNC and continues to receive support from FNC programmes).⁴¹⁷

Fair value chains that pay growers slightly more have allowed some grower organisations to become independent, with slightly higher downstream profit margins

Value chains in Fairtrade networks are similar to those in conventional networks described earlier. Historically, the first grower organisations to obtain Fairtrade certification were in northern and southern Colombia. Those organisations combined growers using traditional agroforestry models and very few or no chemical inputs. Fairtrade thus first developed in these two regions, through independent export networks created by the organisations, specifically under the aegis of Expocafé.⁴¹⁸

More recently, the FNC has invested significant resources in issuing certifications, specifically Fairtrade. The FNC has thus become Colombia's main certified coffee exporter (Fairtrade, but also Rainforest Alliance and

⁴¹⁵ Interviews with stakeholders in the Colombian coffee industry

⁴¹⁶ Interview with a Twin Trading coffee expert

⁴¹⁷ CRECE, Impact Evaluation of UTZ certified program in Colombia, 2014 and Cenicafe, Estudio economico de sistemas de producción cafeteros certificados y no certificados, en dos regiones de Colombia, 2010

⁴¹⁸ Interviews with representatives of certified producer organisations in Colombia and Colombian fair trade sector stakeholders held in May, June and July 2018

UTZ) since 2014⁴¹⁹. The FNC has significantly increased its Fairtrade certified volumes by encouraging its members to convert, nearly saturating some regional markets.⁴²⁰

Using various information and impact studies collected on fair trade in Colombia, we have been able to estimate the loss in value from growers to green coffee exports for the past 12 years.

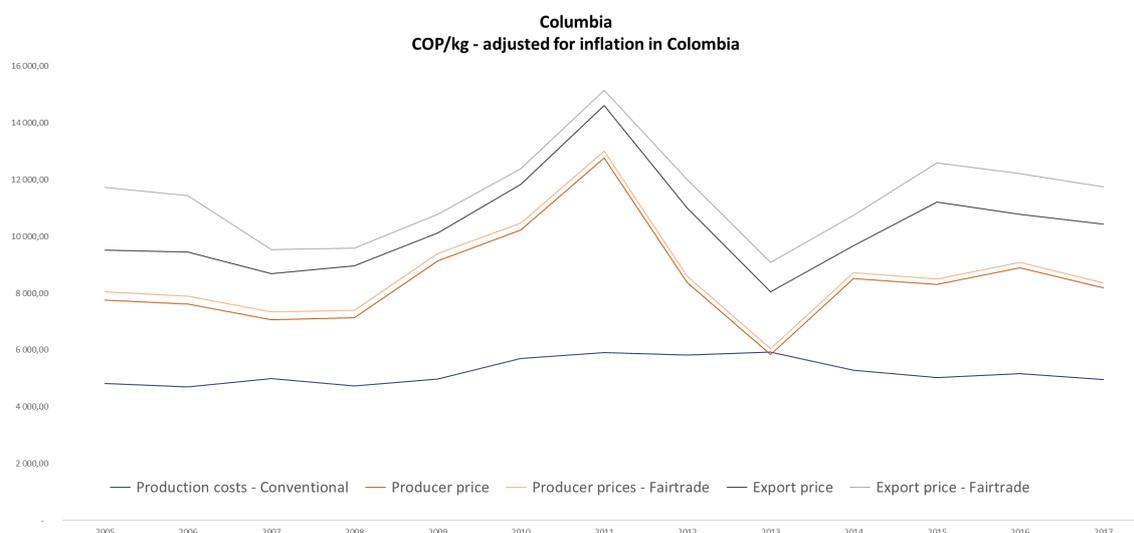


Figure 93. Change in the loss in value of Fairtrade coffee to FOB in Colombia. Source: BASIC.

The prices growers receive from Fairtrade organisations seem slightly higher than prices in traditional sectors. This difference results mainly from redistributing a small part of the Fairtrade development premium to coffee growers.

The Fairtrade system raised growers' income slightly, but it seems to have had only a slight impact on income fluctuations in recent years. The guaranteed minimum Fairtrade price only took effect in 2005 and 2006; the average export price for Colombian coffee has been higher than the guaranteed minimum price since 2007⁴²¹. Moreover, the potentially higher production costs linked to Fairtrade certification are difficult to quantify. Some cost increases could result from paying for audits and ensuring compliance. Specific compliance issues include social standards (i.e., registering workers, upholding children's rights), various environmental standards (which could impact yields) and traceability requirements.

Colombian coffee sold retail as Fairtrade is labelled as "Single Origin Colombia" (mainly with the Fairtrade label or other labels such as SPP; this coffee may also be sold without a consumer label by 100% Fairtrade brands such as Lobodis).⁴²²

Surveys conducted during supermarket visits as part of the study were only able to identify Fairtrade Colombian ground coffee in 250 g packets. These surveys did not find any Nespresso-compatible flexible pods or capsules (IRI data provided by Max Havelaar France show low, but significant sales of Fairtrade Colombian coffee by another hard pod coffee maker in 2017, but surveys did not find this in stores). Finally, information compiled about major brands selling fair trade coffee did not allow us to identify blends routinely containing Colombian coffee.

⁴¹⁹ Technoserve, Colombian Coffee Production and Costs, 2014

⁴²⁰ Interview with a Twin Trading coffee expert

⁴²¹ According to interviews carried out by network representatives of fair trade and fair coffee sector experts, even if Fairtrade's specifications show that the minimum price must be taken into account once the coffee price in New York falls below its level, in practice, shoppers compare the minimum price to the purchase price of coffee in the country, which includes the "quality differential" associated with the origin.

⁴²² Interviews with representatives of Max Havelaar France and brands selling fair trade coffee, held in May 2018.

These surveys found the following average prices of Fairtrade Colombian coffee sold in shops in unlabelled 250 g packets, compared to traditional coffee prices:

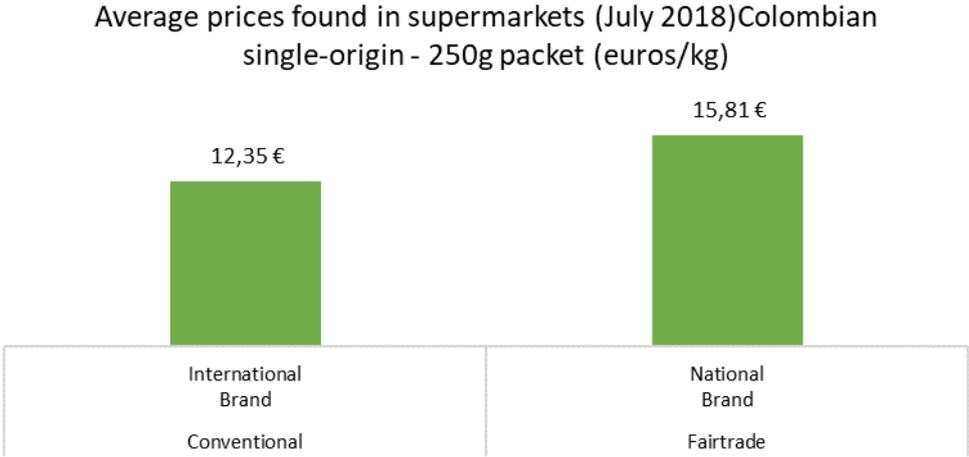


Figure 94. Consumer prices for blended fair trade and conventional coffee sold in 250 g packets in France. Source: BASIC.

The higher price of Fairtrade packets - roughly 30% - results more from market positioning and economies of scale than from the Fairtrade label. A French SME that has developed a premium brand sells the Fairtrade packet. In contrast, the traditional product is sold by one of the sector's major multinational companies. That company enjoys very large sales volume, allowing it to use to approaches and negotiating capabilities very different from those used by supermarkets.

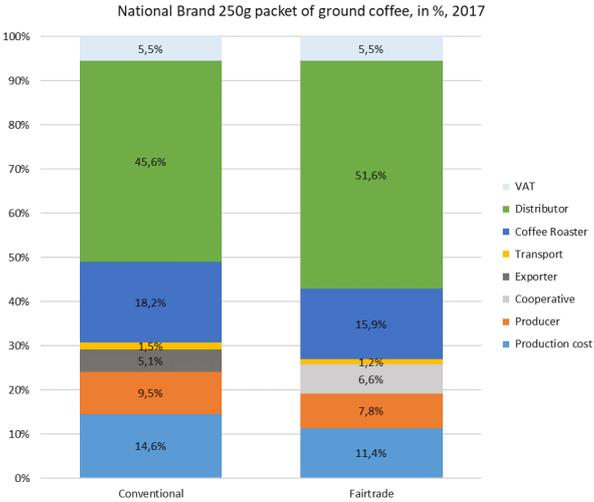


Figure 95. Loss in value of Fairtrade coffee, excluding promotional discounts Colombian growers offer to French consumers. Source: BASIC.

Using this data, we estimated the value share of traditional and Fairtrade Colombian coffees (unlabelled) sold by national brands⁴²³.

The smallest percentage retained by producer countries for Fairtrade production (26.5% compared to 29%) results from the higher consumer price. The higher wholesale margin does not seem to result from the (over) valuation of Fairtrade coffee; rather, the product is sold by an SME with low sales volumes. In contrast, the traditional product is associated with an international brand and high volumes (which can lead to margin policies different from those of supermarkets).

⁴²³ Value shares for coffee roasters and distributors are only indicative on account of the lack of available data in these links. The coffee roaster's share is a minimum figure calculated from the estimated direct costs of the coffee processing and logistics obtained from professionals, and of the added value declared in the accounts of French establishments which produce coffee. The value share of distributors is what is still needed to reach the price stated for the consumer.

The value share that Colombian growers receive is lower as a percentage, but growers receive a higher price (1.04€/kg versus 0.98 €/kg in the traditional sector).

Beyond the issue of prices and grower income, the impact studies that we undertook show that fair trade labelled Fairtrade has significant positive effects linked to investing the development premium in social projects (health, education, etc.)⁴²⁴. However, the lack of markets limits these impacts: the national average of coffee grown in Fairtrade certified organisations sold in Fairtrade conditions is just 10%.

The most significant impacts of fair trade documented in studies are structural. Those impacts reflect the empowerment of grower organisations in northern and southern Colombia (and these impacts are even greater as more growers lose independence).

For example, developing fair trade in the Cauca region coincided with creating a network of grower organisations. That network filled the gap left by the FNC's loss of power. These grower organisations used the Fairtrade and/or organic labels to carve a market niche and combat the dominance of both the FNC and international roasters.⁴²⁵

The Colombian government defined the FNC's rural development mission, while independent grower cooperatives combine commercial objectives with a productive development approach. The emergence of independent grower cooperatives has not driven the FNC from the policy field; rather, cooperatives are evolving along with the FNC.⁴²⁶

The FNC has responded by helping its cooperatives earn fair trade certification. To earn certification, FNC cooperatives have apparently modernised some internal governance rules (which they inherited) and made financial management, internal strategy, etc., more transparent.⁴²⁷

Following a period of relative tension between the FNC and organisations that became independent by joining Fairtrade networks, relations today seem peaceful. The FNC and former member cooperatives engage in many more exchanges and partnerships.⁴²⁸

These developments allow us to estimate the impact of fair trade on previously evaluated societal costs (prorated using the number of growers involved):

- The societal cost linked to underpaying growers has fallen by about 4% compared to traditional sectors.
- The Fairtrade development premium reduces the need to fund essential services by about 2% compared to traditional sectors.
- There are no documented societal cost differentials related to greenhouse gas emissions or groundwater nitrate pollution (due to input use in Colombia and the lack of information on Fairtrade-certified and non-organic cooperatives).

Fairtrade and organic value chains are relatively rare in Colombia, but have greater impacts and lower downstream margins

Organic agriculture is not well established in Colombia and is developing slowly. There are several reasons for this:

- First, the FNC has for decades promoted greater use of technology in coffee production, leaving few traditional organic production systems (outside northern and southern Colombia). Most growers thus find themselves in a "technology trap" that is difficult to escape.

⁴²⁴ Hivos-IIED, Small Producers in the Globalised Market, 2012 Hermelin, Memoire Coopérative C Café Colombie, 2014

⁴²⁵ Hermelin, Mémoire Coopérative Café Colombie, 2014

⁴²⁶ Hermelin, Mémoire Coopérative Café Colombie, 2014

⁴²⁷ Interviews with fair trade sector stakeholders in Colombia

⁴²⁸ Interviews with fair trade sector stakeholders in Colombia

- The 2011 coffee rust epidemic worsened this situation, and growers began seeking solutions that would allow them to "tolerate rust".

In this context, switching to organic production requires growers to make great efforts to adapt their production systems (and earn lower income after paying conversion and compliance costs).

It is thus Fairtrade-certified grower organisations in northern and southern Colombia that have developed the potential of organic coffee. These organisations earned dual certification for their members and thus diversified their markets (we could not obtain precise figures during our research).⁴²⁹

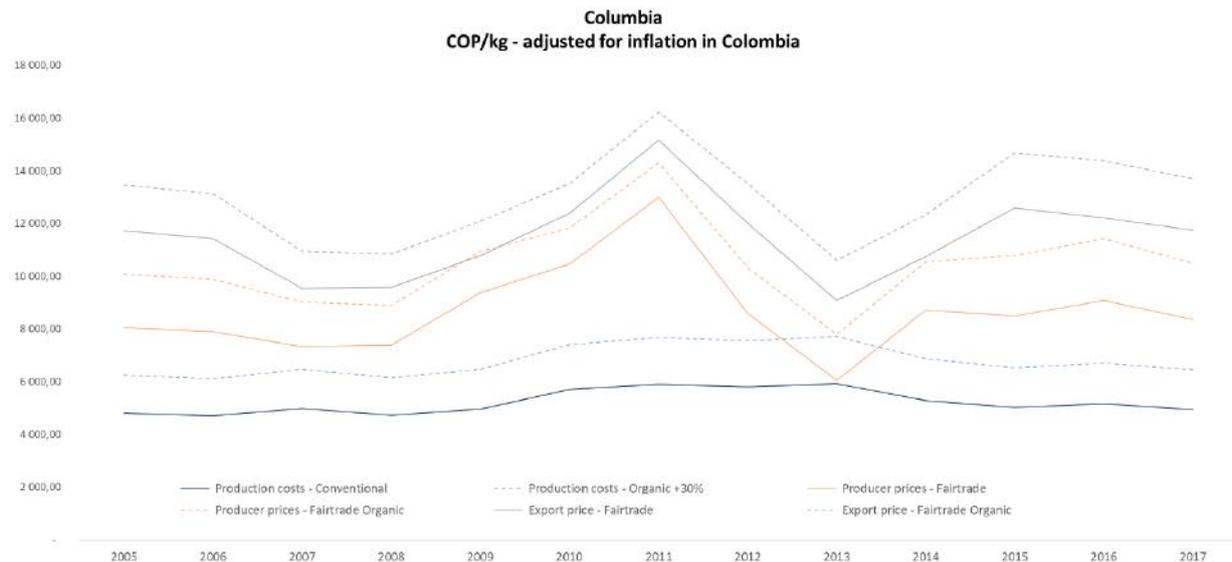


Figure 96. Change in the loss in value of Fairtrade and organic coffee to FOB in Colombia. Source: BASIC.

Export prices and prices paid to growers in dual-certified organisations in Colombia over the past 12 years have followed similar trajectories to prices for non-organic Fairtrade coffee. Higher export prices result from the organic Fairtrade premium (30 dollars per 100 pounds of coffee since 2011). To this premium we also add the export price and development premium (20 dollars per 100 pounds of coffee), and the "quality premium" that buyers pay (from 20 dollars to 50 dollars per 100 pounds of coffee)⁴³⁰.

However, production costs for organic Fairtrade coffee are about 30% higher than for non-organic coffee. This disparity is not linked to costs-per-hectare, which remain substantially unchanged (lower input costs offset higher labour costs). Rather, the difference results from yield losses of about 30% in the context of higher Colombian coffee production.

Grower organisations thus tend to direct the full organic premium to growers in order to help them offset lower yields. This measure substantially raises growers' income compared to non-organic Fairtrade growers.

Coffee marketed under these two certifications generally reaches the same sectors and stakeholders, SMEs and VSEs, as coffee that only has a Fairtrade label⁴³¹.

In retail stores, Colombian Fairtrade and organic coffee is priced the same way as coffee that is not certified organic: as "Single Origin Colombia".

Data collected at supermarket visits as part of the study allowed us to estimate the differences in average prices paid by consumers for Colombian coffee sold in 250 g packets.

⁴²⁹ Interviews with representatives of certified producer organisations in Colombia and Colombian fair trade sector stakeholders held in May, June and July 2018

⁴³⁰ Hermelin, *Mémoire Coopérative Café Colombie*, 2014

⁴³¹ Interviews with representatives of Max Havelaar France and brands selling fair trade coffee, held in May 2018.

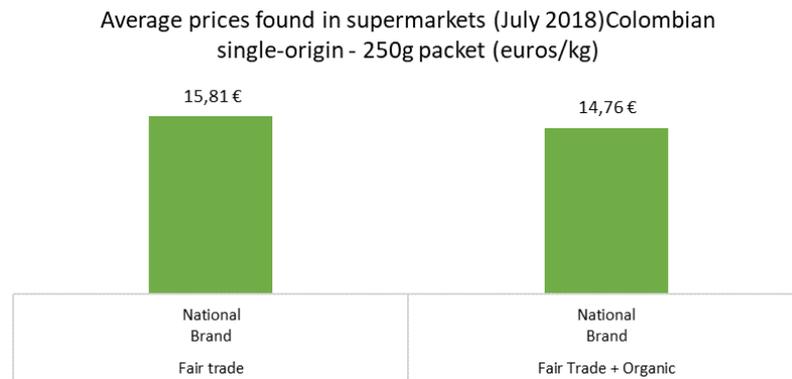


Figure 97. Consumer prices for blended fair trade and conventional coffee sold in 250 g packets in France. Source: BASIC.

The lower price for a Fairtrade, organic coffee packet compared to a non-organic packet - about 6% - results less from dual certification than from different market positions. A French SME that has developed a range of premium coffees sells the non-organic product; another SME, which has developed a diverse range of products including coffee, sells the organic product. Those different market positions result in different supermarket approaches to profit margins.

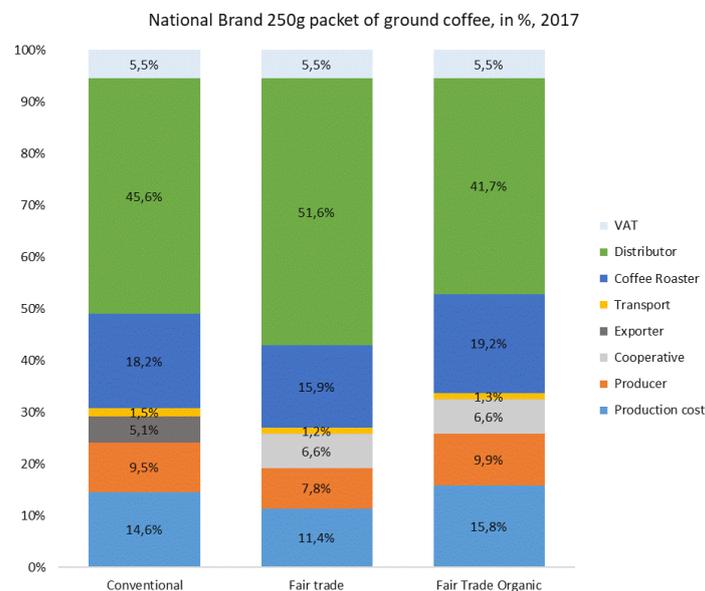


Figure 98. Loss in value of Fairtrade coffee, excluding promotional discounts Colombian growers offer to French consumers. Source: BASIC.

Based on this data, we estimated the value share for 250 g packets of Fairtrade Colombian coffee⁴³². There is a greater value share for the country of origin with dual certification: 33.5% of the final price versus 26.5% without organic labels (and 29% for conventional coffee production).

This increased value has a greater impact, generating higher incomes for growers in dual-certified organisations.

Beyond economics, the impacts associated with organic agriculture are very significant in Colombia. Organic methods allow growers to preserve or restore shade in plots, but more important, they represent an alternative to using large-scale inputs to grow coffee.

Studying the impacts of organic methods in the Colombian coffee sector requires more resources. Further study will help farmers respond to climate change and allow more farmers to adopt organic practices.

⁴³² Value shares for coffee roasters and distributors are only indicative on account of the lack of available data in these links. The coffee roaster's share is a minimum figure calculated from the estimated direct costs of the coffee processing and logistics obtained from professionals, and of the added value declared in the accounts of French establishments which produce coffee. The value share of distributors is what is still needed to reach the price stated for the consumer.

Based on these results, we can estimate the impact of dual Fairtrade and organic certification (compared to non-organic) on the societal costs evaluated previously (prorated according to the number of producers concerned):

- Dual certification reduces the societal cost linked to underpaying growers by about 40%.
- Organic certification renders costs linked to groundwater nitrate pollution negligible.
- Costs linked to greenhouse gas emissions have decreased by 15% as a result of ending the use of chemical inputs in organic farming.

Sparsely documented contributions of Rainforest and UTZ partly pre-dating the certification and counterbalanced by the significant use of fertilisers

As previously explained, Rainforest-certified producers and especially UTZ-certified producers have a very different profile from the average coffee-grower in Colombia: owning larger land areas, they have significantly higher yields through their prior involvement with productivity improvement programmes organised by the FNC⁴³³.

The studies collected on these two certifications indicate that the spread of UTZ and Rainforest in the country took place starting in the 2000s within the framework of a "specialty coffee development" strategy carried out by the FNC that sought new tools to promote Colombian coffee in the face of persistently low prices on the global market.

Benefiting from international financial support, the FNC selected producers from its historic cooperatives with the greatest (technical and financial) capacity, to get them UTZ- and/or Rainforest-certified and, in doing so, afford them access to better-paying markets⁴³⁴. The largest producers were actually the most suited to these initiatives because of the high costs of certification and the need to ensure a constant supply for international buyers.

Following the withdrawal of international funding that helped to disseminate these schemes, the number of certified producers appears to have stagnated for several years because of the costs of compliance but also and more importantly because of the small premium received by producers (around 0.05 dollars per pound) and the volatility of buyers' demands for these certifications.⁴³⁵

UTZ- and Rainforest-certified coffee is exported from Colombia by the FNC and the subsidiaries of large international merchants (SKN CaribeCafé, the Colombian subsidiary of the Neumann Kaffee Gruppe). The largest share appears to be purchased by 3 main stakeholders who never (or rarely) display these labels on their products' packaging: Nespresso (in conjunction with its own internal AAA certification), Starbucks (in association with its internal CAFE Practice certification) and JDE.

⁴³³ Centro de estudios regionales cafeteros y empresariales (CRECE), Impact Evaluation of UTZ Certified Program in Colombia, 2014 and British Academies for the humanities and social sciences, Working towards sustainable coffee: Rainforest Alliance certification in Colombia 2006-2017

⁴³⁴ Centro de estudios regionales cafeteros y empresariales (CRECE), Impact Evaluation of UTZ Certified Program in Colombia, 2014 and British Academies for the humanities and social sciences, Working towards sustainable coffee: Rainforest Alliance certification in Colombia 2006-2017

⁴³⁵ British Academies for the humanities and social sciences, Working towards sustainable coffee: Rainforest Alliance certification in Colombia 2006-2017

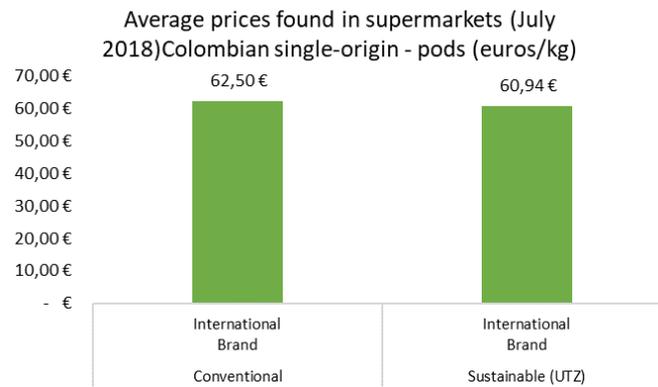


Figure 99. Consumer price survey data on UTZ-labelled coffee capsules sold in France. Source: BASIC.

Data from stores have allowed us to identify one single product displaying the UTZ label: a capsule of single-origin Colombia coffee marketed by a large international brand. Its price per kilogramme places it below a similar product from a competitor; this difference is not due to the UTZ label but rather to the specific market positioning of the two brands.

Regarding the impact of these two certifications in Colombia, we have identified 4 studies: the first 3 on Rainforest from 2008⁴³⁶, 2010⁴³⁷ and 2017⁴³⁸, and the last, on UTZ⁴³⁹, which was published in 2014.

Based on comparisons between certified and uncertified farms, these studies show the positive differences, both environmental (less water used for wet processing, preservation of forest cover) and economic (higher income due to higher yields). These studies state that these changes cannot be attributed to the UTZ and Rainforest systems because the farmers concerned had above-average yields before becoming certified, and were closely supervised and strongly supported by the FNC⁴⁴⁰.

Only the study on UTZ certification gives numerical results. The latter results make it possible to estimate the effects of the UTZ initiative in Colombia on the previously assessed societal costs (prorated for the number of producers involved):

- The societal cost entailed in the underpayment of producers is cancelled out by productivity that is twice as high for certified producers (a situation that predates certification).
- There is no documented societal cost differential relating to greenhouse-gas emissions
- Water pollution by nitrates is doubled because UTZ-certified⁴⁴¹ producers use twice as much chemical fertiliser (which explains their increased productivity).

2.2.5. Cross-sectional analysis of Colombia-France value chains

Colombia is a coffee growing country, a major stakeholder on the international market that, with government backing, became structured around a national federation (FNC) and has succeeded in influencing all other sector stakeholders.

⁴³⁶ Rueda X. and Lambin E.F., Responding to Globalization: Impacts of Certification on Colombian Small-Scale Coffee Growers, 2008

⁴³⁷ Cenicafe, Estudio economico de sistemas de producción cafeteros certificados y no certificados, en dos regiones de Colombia, 2010

⁴³⁸ British Academies for the humanities and social sciences, Working towards sustainable coffee: Rainforest Alliance certification in Colombia 2006-2017

⁴³⁹ Centro de estudios regionales cafeteros y empresariales (CRECE), Impact Evaluation of UTZ Certified Program in Colombia, 2014

⁴⁴⁰ Centro de estudios regionales cafeteros y empresariales (CRECE), Impact Evaluation of UTZ Certified Program in Colombia, 2014 and British Academies for the humanities and social sciences, Working towards sustainable coffee: Rainforest Alliance certification in Colombia 2006-2017

⁴⁴¹ Centro de estudios regionales cafeteros y empresariales (CRECE), Impact Evaluation of UTZ Certified Program in Colombia, 2014

The FNC has developed a comprehensive system that enables it to stabilise and increase prices, to raise the technical level of production and render it uniform, to increase yields, to guarantee quality and to create greater value at export (Colombian coffee) and domestically (Juan Valdez).

On average, producer prices have followed trends in the FOB price, reaching up to 80% of the latter, one of the highest levels among producing countries.

While production costs were contained until 2009, the rust crisis in 2011 significantly impacted the country, which acted on it to accelerate the raising of the technical level of production.

At the other end of the chain, Colombian coffee is generally marketed in France as "single-origin". In contrast with the famous Colombian Coffee on the international market, our supermarket data only identified a small number of labels that highlight origin for the consumer (1 to 2 per store in 250 g packages, no pods and only 1 or 2 capsules). Their retail price is around 10% higher than coffee blends (reflecting the quality differential of Colombian on the New York stock market). The share of the final price received by the country of origin reaches almost 30% for 250 g packages of ground coffee, which is slightly higher than for Peru (24%). As with Peru, this share falls to around 6% for coffee sold in capsules.

In Colombia, while the majority of producers receive a higher revenue than in other coffee-producing countries thanks to the regulation mechanisms of the FNC, they are involved in a capital-intensive agricultural system and lack the independence to decide on their own strategies (because they are directed by sectoral institutions), with significant environmental impacts (due to the use of chemical inputs) and weak resilience because of their dependence on coffee.

The country is also highly vulnerable to climate change, which continues to affect producers (persistence of the rust, drop in cash flow during key seasons), despite the wave of technical advances imposed by the FNC after the crisis. However, some producers have chosen to liberate themselves from this model to move towards organic farming and agro-forestry.

In this context, the table below summarises the main impacts of the fair trade production chain - especially Fairtrade - including those associated with organic farming, and of the UTZ/Rainforest production chains compared with those of conventional production systems.

Impacts of coffee production

Colombia

	Conventional	Fair trade (Fairtrade)	Fair trade (Fairtrade) + organic	UTZ / Rainforest Alliance
Producers	<ul style="list-style-type: none"> Loss of autonomy Rural exodus and ageing of the coffee-growing population Drug trafficking <hr/> <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Farm modernisation (Increased dependence on external stakeholders) Uncertain and variable profitability 	<ul style="list-style-type: none"> Improved incomes and living standards Preservation of a « traditional agroforestry » production method and empowerment of associations of producer organisations <hr/> <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Differentiation and empowerment of the FNC network Strengthening organisational autonomy Use of the premium for social projects Direct and more balanced trade relations 	<ul style="list-style-type: none"> Higher prices for producers Coverage of increased production costs and improved incomes Promotion of organic farming <hr/> <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Use of the organic premium Direct and stable relationships with buyers in profitable markets 	<ul style="list-style-type: none"> Increased revenue (existing prior to certification) Very low premium (compared to compliance costs) <hr/> <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Priority given to productivity Access limited to producers with sufficient resources and support
Workers	<ul style="list-style-type: none"> Child labour case study Pay below the minimum wage case study Failure to comply with working time limits case study 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> No documented impacts
Pollutant emissions	<ul style="list-style-type: none"> Soil and water pollution <hr/> <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Farm modernisation 	<ul style="list-style-type: none"> No documented impacts on producers belonging to FNC cooperatives Shade preservation and the fight against soil erosion for producers who are members of associations in the North and South of the country 	<ul style="list-style-type: none"> Preserving biodiversity and improving ecosystem services <hr/> <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Strategy and technical support provided by cooperatives Preservation and development of an organic agroforestry method (North & South) 	<ul style="list-style-type: none"> Increased nitrate contamination of groundwater <hr/> <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Priority given to pursuing productivity
Deforestation	<ul style="list-style-type: none"> Move towards deforestation on coffee farms <hr/> <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Farm modernisation 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> Partial but limited reforestation of farmland
Impacts of climate change	<ul style="list-style-type: none"> Colonisation of higher altitude zones Loss of productive capacity of low altitude plots Coffee rust 	<ul style="list-style-type: none"> Increased investment capacity Organised producers enable knowledge sharing 	<ul style="list-style-type: none"> Reduced nitrate pollution due to the ban on chemical inputs Reduced impacts of climate change 	<ul style="list-style-type: none"> No documented impacts

Figure 100. Table summarising impacts in the Colombia-France production chains. Source: BASIC.

Above all, the Fairtrade initiative afforded leverage to more isolated producers using agro-forestry systems who wished to free themselves from the oversight of the FNC through both the creation of associations and the contact with buyers who were ready to highlight the quality of their coffee, allowing them to organise. After a tense period with the FNC, the latter became involved in the initiative, offering greater transparency to more conventional producers who were members of its historic cooperatives. The most obvious positive effect regards the empowerment of cooperatives which used fair trade to free themselves from the FNC's oversight, to create collective capital and to develop their members' agro-forestry and organic farming models.

Organic agriculture has a weak foothold in the country because of a long history of increased technical intensiveness of production and the use of chemical inputs. This means that Colombia is in a "technologically locked" situation, entailing much effort by producers to free themselves from it. When associated with fair trade, organic certification allows for 20% greater impact on producers' income and, above all, the development of an agro-forestry model that offers an alternative to the FNC system to fight the effects of climate change in the country (rust, strong rains, longer dry seasons).

At the market level, fair trade coffee, organic or not, is marketed as "single-origin" - like the conventional merchandise - and mainly sold in 250 grams' packets (sales of portioned products are limited to a dedicated hard-capsule format). Our store surveys show that the profit margins on these products for coffee roasters and distributors are slightly higher for non-organic fair trade coffee and equal to conventional merchandise with double certification. The value share ultimately received by the producer country (coffee-growers and cooperatives) is 10% improved through these two initiatives.

The UTZ and RFA approaches are chiefly implemented by large groups, and mostly by more productive/intensive farms of above-average size, selected for their high performance by the FNC to support them in seeking the award of these certifications. Consequently, the impact of the UTZ and Rainforest certifications cannot be dissociated from both the support received by the FNC and the higher-performing profile of producers prior to certification. In view of the (very) small premiums gained through these initiatives in comparison to compliance costs (input management, formalisation of workers...), the number of certified producers has tended to stagnate for several years.

At the market level, our store surveys identified only one reference to Colombian coffee with UTZ certification sold in capsules.

In terms of impact, the available studies on the UTZ initiative indicate that producers receive an income equal to or higher than a living wage (because of their higher productivity prior to certification). However, this better financial return results from the use of twice as much chemical fertiliser. This causes increased nitrate pollution, a critical issue for the sector in Colombia.

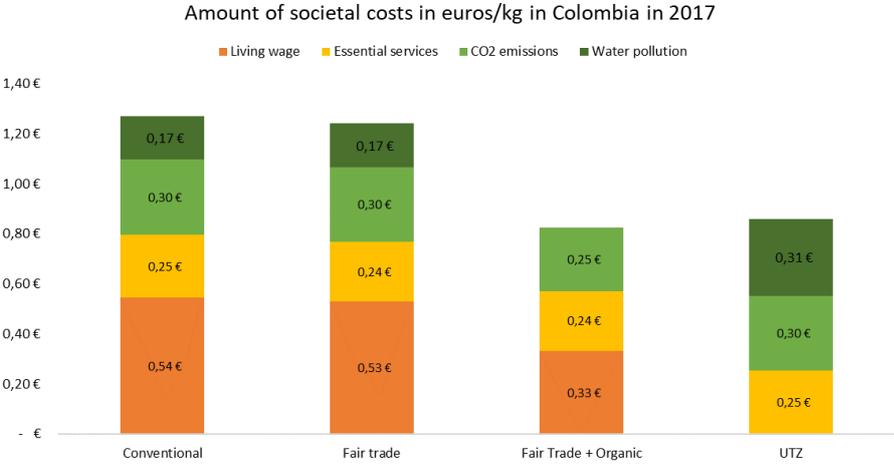


Figure 101. Comparison of societal costs in Colombia-France production chains. Source: BASIC.

These differences in impact translate into societal costs: in conventional coffee sectors, these costs amounted to €1.27 per kilo in 2017, the lowest level in the three case studies (equivalent to 1,128 million dollars on a country-wide scale, half as much as the value of green coffee exported that year).

The available impact assessments show that these costs fell by 2% in the case of Fairtrade-certified sectors (€1.24/kg), largely due to the use of the development bonus, and by 35% with double Fairtrade and organic certification (falling to €0.82/kg, the lowest in our three case studies).

For UTZ certification, associated societal costs appear to be less than 32% for the conventional industry, a better result than those certified Fair-trade but not organic, but not as good as that obtained by the latter certifications in combination (because of the increased use of chemical fertiliser in order to maintain high productivity).

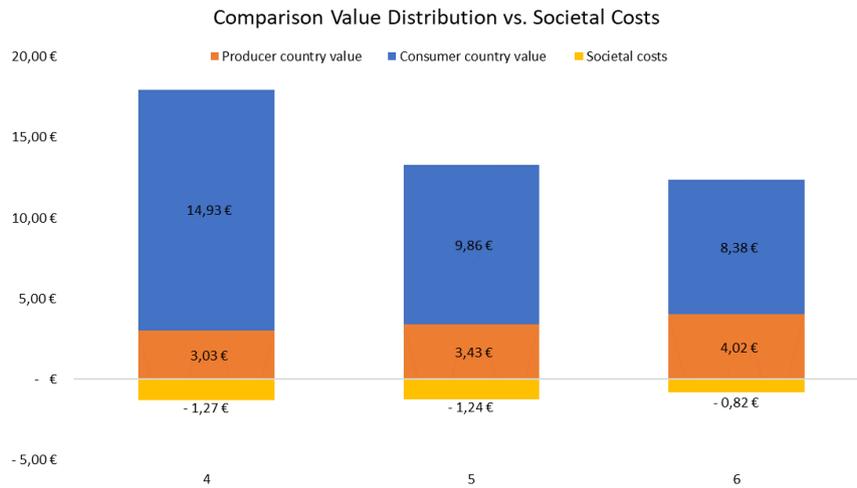


Figure 102. Comparison of the division of societal costs in the Colombia-France production chains. Source: BASIC.

Overall, our estimates indicate that these differences in societal costs are due to an apportionment of value that favours producer countries, particularly in the sectors labelled both Fair-trade and organic. Thus, the double certification in Colombia has both the lowest societal costs of our three study cases and the most balanced value distribution between producer and consumer countries.

However, these results are due in large part to the high proportion of pods and capsules in the standard sector (compared with the fair trade and organic sectors). When we study each format separately, we notice that producers receive a slightly larger portion of the value for ground, fair-trade, organic coffee sold in 250 g packages (but possibly less without the organic label; this situation is attributable to brand positioning rather than the fair-trade approach). Furthermore, store data preclude estimation for portioned coffee (in pods or capsules).

2.3. Analysis of the Ethiopia to France value chain

2.3.1. Ethiopia is a markedly coffee-growing country with a traditionally high level of internal consumption. This coffee is produced by highly diversified family subsistence farming

Ethiopia is the fourth producing country of green coffee imported to France, with volumes of approximately 12,700 tonnes in 2016, compared with only 5,150 tonnes in 1994⁴⁴². As the historic birthplace of the Arabica strain, the country produces coffees with highly characteristic flavours and quality that is recognised worldwide.

Ethiopia is the sixth largest producer in the world. It grows exclusively Arabica on an area of 470,000 hectares⁴⁴³, producing 392,700 tonnes in 2017.

Ethiopia is distinctive for its climate conditions and soil quality, which are exceptionally suited to Arabica cultivation. Almost all of the coffee is cultivated in the country's Central and South-West regions, at altitudes between 1300m and 1800m above sea level⁴⁴⁴.

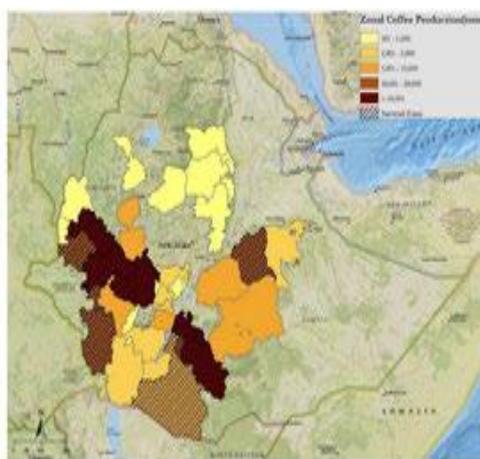


Figure 103: Geographical distribution of coffee production in Ethiopia (Source: IFPRI⁴⁴⁵)

The sector involves 15 million people⁴⁴⁶: producers⁴⁴⁷ who derive a share of their income from it⁴⁴⁸, workers⁴⁴⁹, state-authorized intermediaries, cooperatives, etc.

⁴⁴² Note that this concerns only the importation of green coffee in France, equal to about 50% of the total volume of coffee consumed in France. The remaining 50% is imported as roasted coffee whose origin corresponds to that of the roasting country and not to the country of production.

⁴⁴³ FAOSTAT; USDA 2016

⁴⁴⁴ FAO, Analysis price incentives coffee Ethiopia 2005-2012, 2014

⁴⁴⁵ IFPRI, Tracking the quality premium of certified coffee, 2017

⁴⁴⁶ Estimates vary: between 15 and 25% of the whole Ethiopian population would depend directly or indirectly on coffee (production, transformation, commercialisation, transport) for work and their income (FAO, Analysis price incentives coffee Ethiopia 2005-2012, 2014; USDA, 2012; USDA, Ethiopia Coffee Prod Exports, 2016; Solidaridad impact study report in east Africa 2014).

⁴⁴⁷ Sources differ on the exact number of Ethiopian coffee producers: from 2 million (GCP 2017) to over 4 million (IFPRI, Changes SPO Coffee Value Chain Ethiopia, 2015; FAO, Analysis price incentives coffee Ethiopia 2005-2012, 2014)

⁴⁴⁸ In Ethiopia, coffee is the main cash crop. In other words, besides their food crops, Ethiopian producers have several coffee bushes, whose production is partly for their own consumption and partly sold to generate revenue so as to be able to invest in their farm (especially the purchase of cattle).

⁴⁴⁹ In Ethiopia, it is estimated that 95% of coffee is produced by small producers and that 5% is produced on plantations which are either private or owned by the Ethiopian government (Gemech and Struthers, 2007; Arslan and Reicher, 2011; CSA, 2012; FAO, Analysis price incentives coffee Ethiopia 2005-2012, 2014).

Coffee represents around 4.6% of GDP and 35% of Ethiopian exports⁴⁵⁰, mainly to Germany, Saudi Arabia, Japan and the United States⁴⁵¹. This proportion is declining because of an increase in exports of gold, cut flowers, textiles and khat⁴⁵².

Ethiopia is different in that it is both a significant coffee exporter and a consumer: around 50% of national production is consumed by Ethiopians, a tradition that goes back several centuries.

Families consume the coffee that they produce themselves, roasting it over embers⁴⁵³. Ethiopian culture is known for its coffee ceremony (*jebena buna* in Amharic) which involves rites of preparation and tasting.

Coffee, a crop that is integrated into a traditional system combining agriculture and livestock

A special feature of Ethiopian coffee is that 90% of it is produced by small family agriculture that uses few inputs, if any,⁴⁵⁴ and coffee cultivation is a minor activity that is integrated with the production of other food crops which take precedence in the allocation of resources and work time⁴⁵⁵.

Agricultural autonomy method through the integration of forested areas and clearings

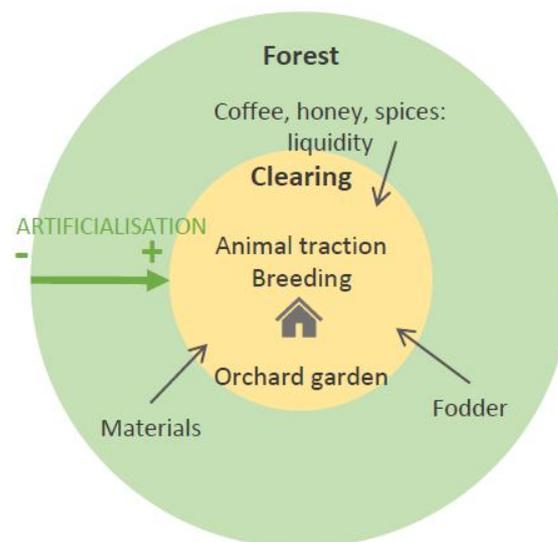


Figure 104. Model of agricultural self-sufficiency achieved through the integration of forest areas and clearings. Source: BASIC

Ethiopian farming is a balanced system, organised according to a pattern which can be represented by two concentric circles (see diagram above):

- At the centre, a clearing around the house (often 2 to 4 ha in area), comprised of a garden-orchard (where the farmers grow root vegetables/tubers, fruit and vegetables), and land for crops and livestock (with legumes, grains and cattle). Within this space, in the "garden", they grow a few coffee trees, using natural fertilisers derived from other crops grown alongside them. About 45% of coffee produced in Ethiopia is grown using this garden system, with varying intensiveness⁴⁵⁶.

⁴⁵⁰ World Bank 2014 ; IFPRI 2017

⁴⁵¹ USDA 2016

⁴⁵² USDA 2016

⁴⁵³ USDA 2016

⁴⁵⁴ And very little utilised as improved varieties see EJBM, Coffee prod & market Ethiopia, 2014

⁴⁵⁵ EJBM, Coffee prod & market Ethiopia, 2014

⁴⁵⁶ Ibid.

- Around the centre, a second circle represents the forested area. Coffee trees are located in these semi-forested⁴⁵⁷ and forested⁴⁵⁸ areas cultivated by the farm unit concerned. About 45% of the coffee produced in Ethiopia comes from these semi-forested and forested systems (in addition to the amounts described in the previous point)⁴⁵⁹. These forest areas also provide forage or other important rural products like honey, spices and construction materials or fuel.

In this agricultural model, coffee is the main (perhaps only) source of liquidity for smallholder families and allows them to meet their essential spending requirements: health, education, complementary food products and livestock purchases.

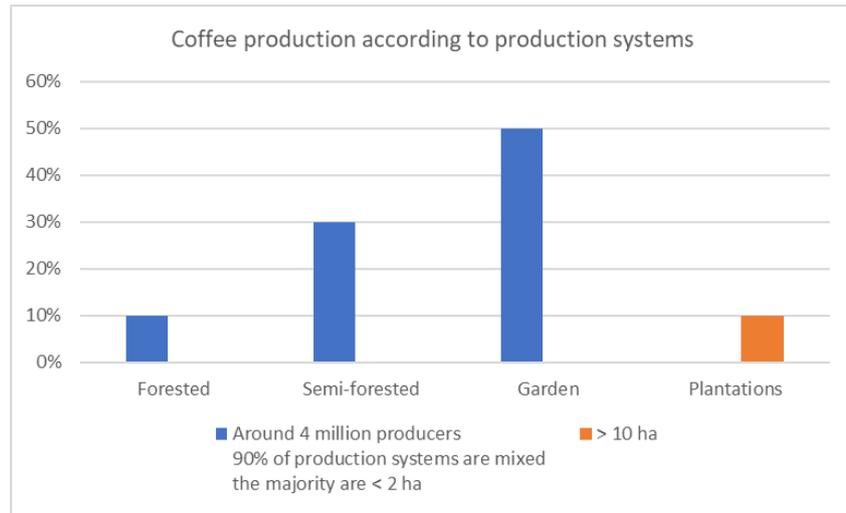
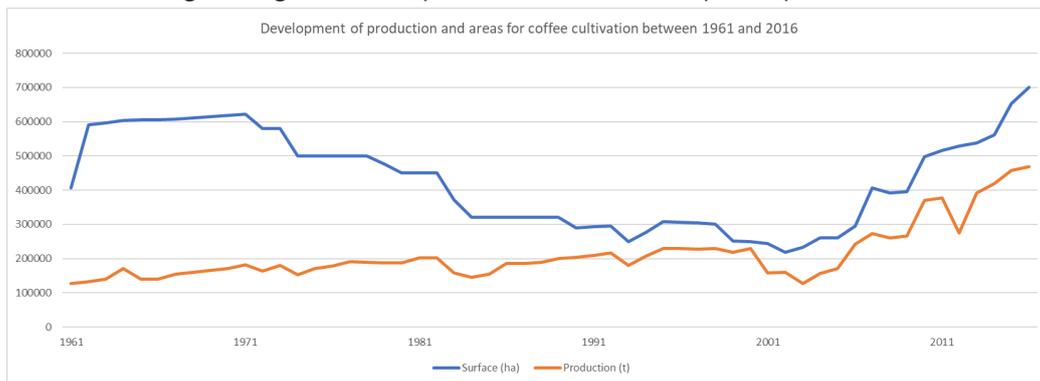


Figure105: Coffee production broken down according to production systems in Ethiopia
Source: BASIC according to KEW⁴⁶⁰, EBJM⁴⁶¹, FAO⁴⁶²

In addition to the mainly family-farmed production and to a lesser extent, 10% of coffee is grown on plantations larger than 10 hectares (up to several hundred or even more than a thousand hectares). These large plantations belong to the government, private investors or Ethiopian exporters or merchants⁴⁶³.



⁴⁵⁷ Producers select and thin forests so as to allow the necessary light to penetrate for optimal growth of the coffee bushes. A producer who cuts and weeds an area of forest at least once per year automatically becomes its owner.

⁴⁵⁸ A system of harvesting where the cherries are collected on naturally-existing forest bushes that have no owners.

⁴⁵⁹ EJB, Coffee prod & market Ethiopia, 2014

⁴⁶⁰ KEW, Coffee Farming and Climate Change in Ethiopia, 2017

⁴⁶¹ EJB, Coffee prod & market Ethiopia, 2014

⁴⁶² FAO, Analysis price incentives coffee Ethiopia 2005-2012, 2014

⁴⁶³ Interview with an expert coffee researcher in Ethiopia

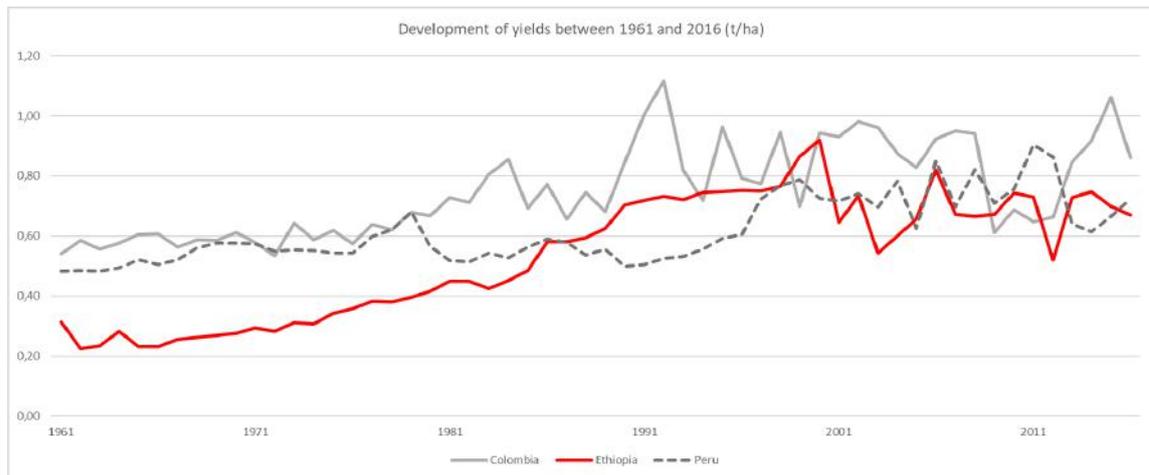


Figure106: Coffee production, areas and yields in Ethiopia, 1961-2016
(Source: BASIC according to FAOStat)

The phasing-in of liberally-minded regulations

The traditional coffee production system in Ethiopia was first disrupted in the 1940s when Haile Selassie's regime proposed important forest concessions to domestic and foreign investors, who established the first coffee production models as large-scale plantations, driven by high global prices and access to land on favourable terms⁴⁶⁴. This initiative was short-lived: following the coffee overproduction crisis of the 1960s, prices plummeted and the plantations were abandoned, leaving the land to become overgrown once again by the forest⁴⁶⁵.

In contrast to most coffee-producing countries, the AIC regulation period failed to benefit the Ethiopian coffee economy. Land areas dwindled, particularly under the Derg military junta (1974-1991), during which market conditions were detrimental to coffee growing (overvalued exchange rates, price controls)⁴⁶⁶. Moreover, the junta carried out land reforms redistributing land to farmers in order to put an end to feudal-style social ties. Thus, land in Ethiopia was divided into many small parcels of forest and clearings, on which food-crop growing developed⁴⁶⁷. Unappropriated forests were classified as State Forests, with official restrictions on access and use, which were nevertheless informally organised by local farmers (see the aforementioned forest and semi-forested systems)⁴⁶⁸.

As with other producer countries, the 1990s were a turning point for coffee growing in Ethiopia: following the abandonment of the AIC, the sector was liberalised by the government, which ended production quotas and price controls, and dismantled the *Coffee Marketing Board*, at the same time as reducing taxes⁴⁶⁹.

Alongside these liberalisation measures, national and international programmes were implemented to increase the sector's competitiveness and to improve the quality of Ethiopian coffee in order to allow it access to tiered markets: geographic labelling, fair-trade, organic...⁴⁷⁰

⁴⁶⁴ S. El Ouaamari, F. Verdeaux, H. Cochet, Place du café dans les systèmes de production du sud-ouest éthiopien et impact prévisionnel des outils de certification, 2010

⁴⁶⁵ IFPRI 2017

⁴⁶⁶ IFPRI, 2017 266:13

⁴⁶⁷ S. El Ouaamari, F. Verdeaux, H. Cochet, Place du café dans les systèmes de production du sud-ouest éthiopien et impact prévisionnel des outils de certification, 2010

⁴⁶⁸ Ibid.

⁴⁶⁹ IFPRI, 2017

⁴⁷⁰ S S. El Ouaamari, F. Verdeaux, H. Cochet, Place 2010 op. cit.

Based on quality, this chosen strategy is entirely logical for Ethiopia, the home of coffee, endowed as it is with extremely wide genetic diversity⁴⁷¹: several hundred different varieties are cultivated on its territory,⁴⁷² four of which are the main varieties of Arabica,⁴⁷³ which represent 70% of total Ethiopian coffee exports today⁴⁷⁴. For 20 years the combined effects of liberalisation and quality policies have enabled the sector to develop: production has doubled, mainly thanks to the expansion of cultivated land (see figure above). Abandoned in the 1960s, the plantations in former producing regions like Kaffa have now been renovated and extended, while numerous small producers have set about planting coffee bushes in their gardens⁴⁷⁵.

To regulate this sector in the midst of its considerable renaissance, the Ethiopian government has established certain structures, in particular *the Ethiopian Commodity Exchange (ECX)*.

Launched in 2008, the ECX is a public-private partnership that benefits from significant support from the Ethiopian State. Its aim is to organise and streamline coffee transactions on its territory in order to reduce the information imbalance that puts coffee producers at a disadvantage⁴⁷⁶.

The only one of its kind on the African continent, this structure has profoundly revolutionised the organisation of green coffee marketing chains in Ethiopia. Its philosophy is to organise a market place where supply and demand for agricultural products meet in a way that most closely approximates pure and perfect competition rules (players' information, standardised quality, transaction anonymity, etc.).

Nearly all exports of Ethiopian green coffee are under ECX's control, except for 'speciality' labelled coffees marketed by cooperatives and, more recently, large plantations⁴⁷⁷.

2.3.2. Conventional processes structured by the ECX and established by the State, which are of little benefit to producers but are highly valued further down the chain

The major coffee-exporting channels in Ethiopia organised under the aegis of the ECX

Green coffee exports traded through the ECX (85% of volumes produced in Ethiopia)

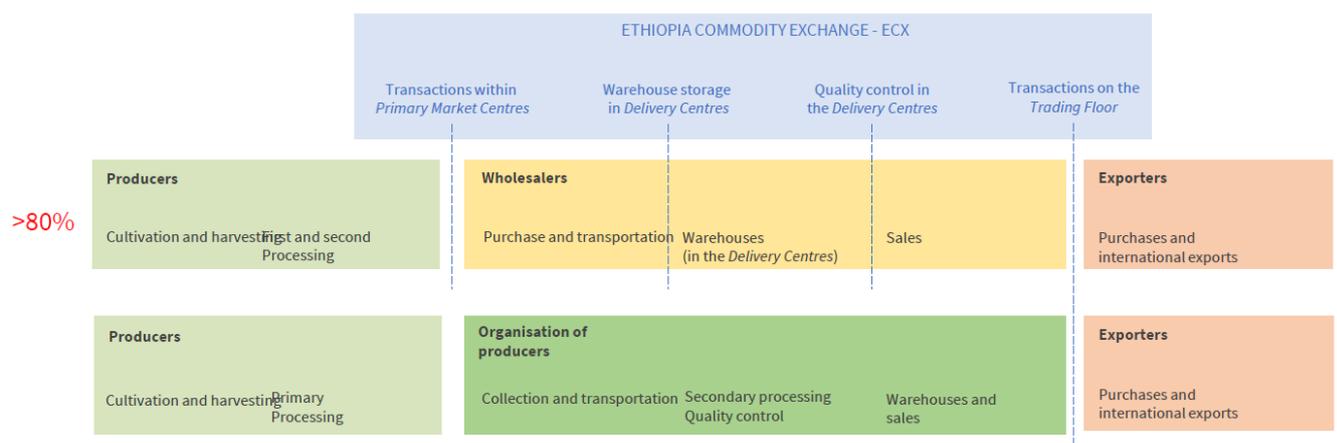


Figure 107. Green coffee chains for exports marketed via the ECX. Source: BASIC

⁴⁷¹ P49: Daviron, *Paradoxe du Café*, 2007

⁴⁷² FAO, "Analysis of price incentives for coffee in Ethiopia for the time period 2005-2012", 2014

⁴⁷³ Jimma, Sidama, Yirgacheffe, Harar

⁴⁷⁴ FAO, *Analysis price incentives coffee Ethiopia 2005-2012*, 2014

⁴⁷⁵ S. El Ouaamari, F. Verdeaux, H. Cochet, *Place* 2010 op. cit.

⁴⁷⁶ IFPRI 2017

⁴⁷⁷ UNIDO, *Improving the Sustainability and Inclusiveness of the Ethiopian Coffee Value Chain through Private and Public Partnership* 2014

About 90% of the amount of coffee produced in Ethiopia is grown by family farmers (forestry or semi-forestry systems and in gardens) and 95% of the coffee produced is exported via the distribution channels under the aegis of the ECX.

At the beginning of the chain, the small producers are not usually organised. It is they who are in charge of the first transformation. The majority dry the harvested coffee fruits in the sun. The wet-to-dry process is the preferred method and allows them to store the coffee so that they can sell it at the best time. Alternatively, they use the 'semi-washed' method⁴⁷⁸.

The second transformation (hulling, etc.) takes place at departmental or regional pulping centres⁴⁷⁹.

The producers then send their coffee to *Primary Market Centres* where they can choose whom to sell it to. These departmental market places are one of ECX's major contributions: producers are no longer dependant on intermediary collectors, and the introduction of competition amongst the buyers (authorised by the ECX) is made possible and transparent⁴⁸⁰. Moreover, even if the system is not totally effective, given only 82% of producers say they have benefited from it, the *centres* allow coffee growers to be informed on coffee prices⁴⁸¹.

A minority of producers (about 10% to 15%⁴⁸²) are members of cooperatives. The latter were restructured in the 1990s by the Ethiopian government, which established cooperative unions with the aim of increasing the value of coffee sales⁴⁸³.

The cooperatives obtain the coffee fruits from their producers and use the wet processing method for the first transformation to increase the value of the coffee⁴⁸⁴. They ensure the second transformation takes place and store the coffee at their washing stations while waiting to find buyers for it.

If the buyers are wholesalers⁴⁸⁵, they then transport the coffee to the depots (Delivery Centres) established by the ECX. There the batches undergo quality control and are given a grade which is summarised in an official document delivered to the wholesalers⁴⁸⁶. Depending on the grade, the wholesaler is entitled to sell the coffee for export or has to put it up for sale on the domestic market (in which case he/she re-enters the marketing chain for coffee destined for the Ethiopian consumer market)⁴⁸⁷. Thus the ECX is the entity that chooses the coffee to be exported and the coffee to be consumed by Ethiopians.

If they are authorised to export the coffee, the wholesalers go onto the *trade floor* in Addis-Ababa established by the ECX, where they enter into negotiations with more than 450 coffee exporters⁴⁸⁸ who are also authorised by the ECX⁴⁸⁹.

⁴⁷⁸ Land monopolisation 2013

On the other hand, the washing process associated with the best quality coffee is usually implemented by the biggest facilities, cooperatives and plantations

⁴⁷⁹ El Ouaamari thesis (forthcoming)

⁴⁸⁰ IFPRI 2017

⁴⁸¹ IFPRI 2017

⁴⁸² UNIDO 2014 op. cit. ; Minten B. and Tamru S., Value Addition and Processing by Farmers in Developing Countries: Evidence From the Coffee Sector in Ethiopia, 2016

⁴⁸³ Solidaridad, impact study report East Africa, 2014

⁴⁸⁴ IFPRI, Tracking the quality premium of certified coffee, 2017

⁴⁸⁵ As far as cooperatives are concerned, these are far less checked by ECX but they can choose to sell part of their coffee on the *trade floors* supervised by ECX (Hirons Geoforum Climat Resilient Coffee 2018)

⁴⁸⁶ IFPRI 2017

⁴⁸⁷ IFPRI 2017

⁴⁸⁸ UNIDO 2014 op. cit.

⁴⁸⁹ El Ouaamari thesis (forthcoming)

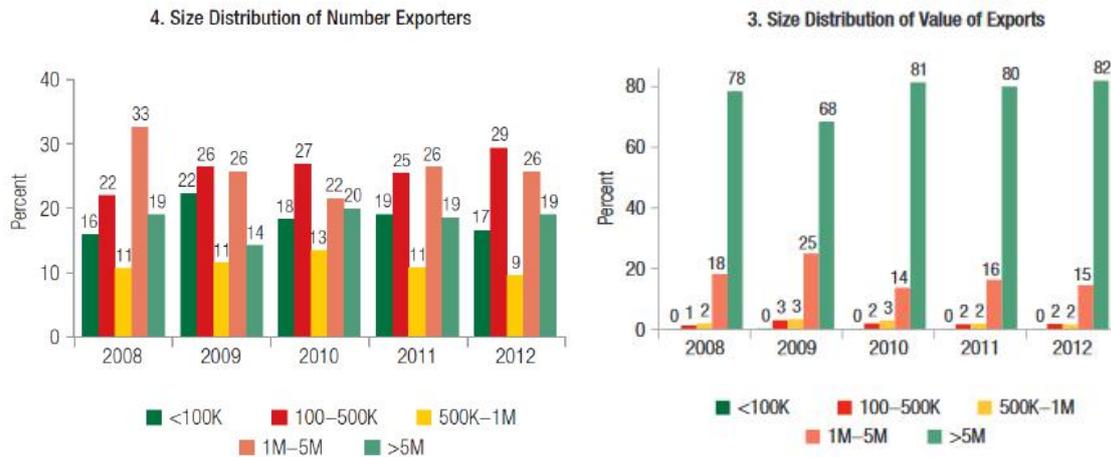


Figure 108. Value of coffee exports according to the size of the exporters and number of exporters according to the volumes processed. Source: World Bank 2014

Although small and medium-sized businesses represent about half of the exporters authorised by the ECX, the largest among them channel over 80% of the sales. Their market share is not publicly available but the five biggest would be⁴⁹⁰: Horra Trading (9.4% of the market in 2012/2013⁴⁹¹), Aleta Land Coffee, Addis Exporter and Mullege Coffee Exporters (note that multinational coffee traders are not authorised to obtain licences directly from the ECX and therefore arrange agreements with Ethiopian buyers⁴⁹²).

Quality-coffee export channels outside (or almost outside) ECX control

Since the creation of the ECX in 2008, small producers grouped into cooperatives and unions have been authorised to sell their coffee directly to international buyers without going to auction⁴⁹³. This opportunity was quickly extended to large plantation-owning private producers who are able to export independently.⁴⁹⁴ (In 2018, private exporters will not only be able to trade coffee produced on their own plantations, but also coffee from small non-organised producers through contracts with them⁴⁹⁵). The corresponding volumes represent about 15% of the green coffee exported, of which over half is channelled by cooperatives⁴⁹⁶.

⁴⁹⁰ World Bank 2014 op. cit.

⁴⁹¹ <http://www.horracorporate.com/market-share>

⁴⁹² UNIDO 2014 op. cit.

⁴⁹³ This within the continuity of the possibility which had already been granted to them under the preceding system of purchase and sale of *auctionat* Addis Ababa and the CTA (El Ouaamari thesis (forthcoming))

⁴⁹⁴ El Ouaamari thesis (forthcoming)

⁴⁹⁵ Interview with an official of Farm Africa organisation in July 2018

⁴⁹⁶ Bain & Company, Ethiopian Agribusiness Industry Incubator, 2015

Green coffee exports traded outside the ECX

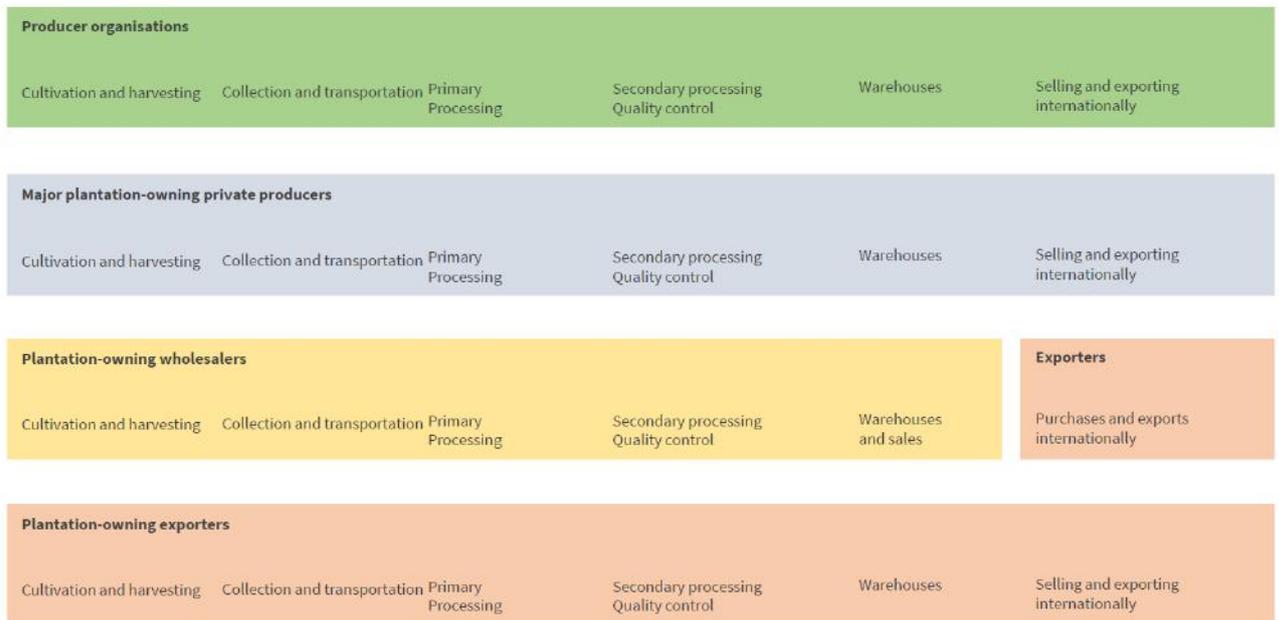


Figure 109. Marketing chains for green coffee outside the ECX. Source: BASIC

This parallel trading network, known as *Direct Speciality Trade (DST)*, is still (very) limited and only regards what the ECX deems 'specialty' coffee⁴⁹⁷. This need to trade and to be in direct contact with producers was a key demand of speciality coffee importers, who felt (and still feel) that the ECX does not enable them to ensure possible traceability back as far as the producers' properties⁴⁹⁸.

It would seem that a new direction within this trading network might be to work with Ethiopian exporters or wholesalers who are investing in plantations, and thereby integrate the chain vertically⁴⁹⁹.

Value chains from which producers derive very little value

To analyse the producers' financial situations resulting from this structure, we have reconstructed the average trends of the export price (FOB), the price paid to producers and the production costs in local currency adjusted to inflation. These estimates refer to the situation of producers integrated into ECX-endorsed distribution channels (direct trading channels are partially addressed in the section that tracks alternatives).

⁴⁹⁷ Grade Q1 or Q2, i.e. more than 80 points (El Ouaamari thesis (forthcoming)).

⁴⁹⁸ USDA 2016

⁴⁹⁹ El Ouaamari, Land monopolisation, South-West Ethiopia, 2013

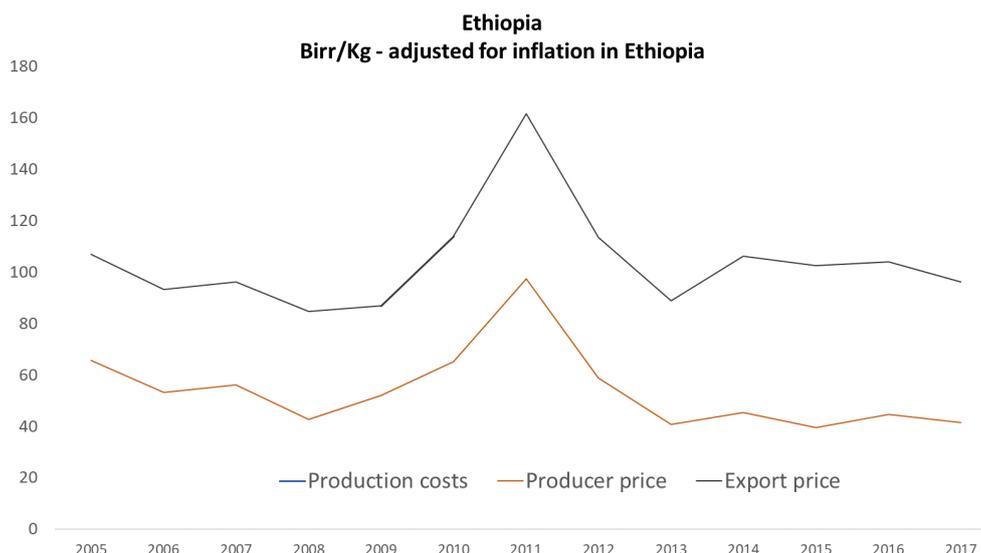


Figure 110. Development from the drop in coffee value to the FOB in Ethiopia. Source: BASIC.

The estimates indicate that the coffee industry appears to be increasingly less able to generate value for Ethiopian producers. Selling prices decreased by 36% between 2005 and 2017 except for in 2010-2012 owing to the rise in world prices following the rust crisis in Columbia.

It seems that the establishment of the ECX has not had a significant impact on the prices producers obtain for coffee sold for export, a fact confirmed by recent research⁵⁰⁰.

Indeed, in recent years' observers have detected a widening gap between FOB prices and producers' prices, to the detriment of the latter: in 2017, producers' prices represented no more than 43% of coffee export prices (i.e. only half of what it was in Columbia), as opposed to 61% in 2005. The difference falls into the hands of intermediaries, private exporters and cooperatives. This development reflects the high costs of the ECX system and the ability of intermediaries to create added value via their investment in the transformation, which has enabled them to get more for their coffee (while the added value does not reach the producers).

On the other hand, agricultural production costs remain very low since the vast majority of the coffee comes from the local subsistence systems of small producers who practically never use inputs and rely mainly on family members, supplemented by other members of the community during the harvest (in the form of exchanging work time, which is not taken into account when calculating production costs).⁵⁰¹

⁵⁰⁰ Hernandez et al., Market institutions and price relationships: the case of coffee in the Ethiopian Commodity Exchange, 2017

⁵⁰¹ IFPRI, Changes SPO Coffee Value Chains Ethiopia, 2015: specialised plantations consisting of a few hectares or even perhaps a hundred hectares are equally low input users (on account of the Ethiopian government regulations which are quite strict so as to safeguard the brand image of the country's "natural coffee") and the cost of farm labour is significantly reduced: a little above US\$3/day in 2016

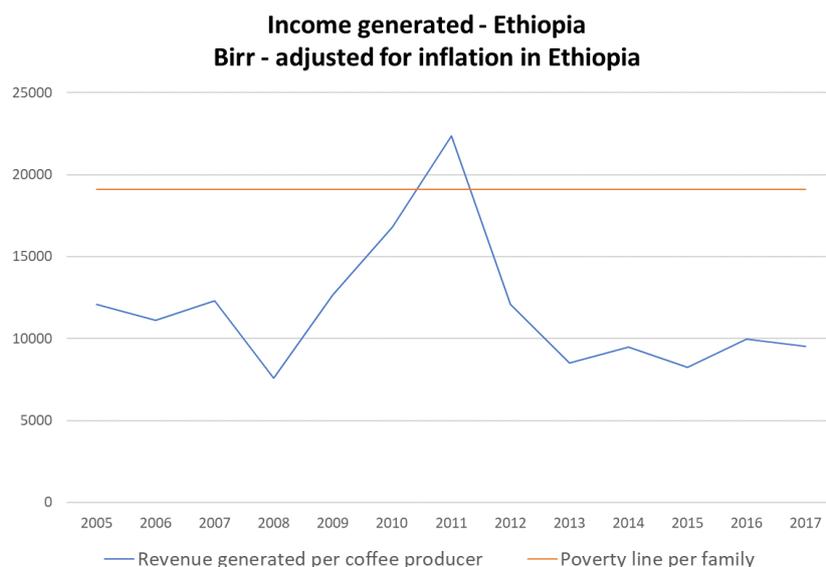


Figure 111. Development of the income of Ethiopian coffee farmers compared to the poverty line. Source: BASIC.

Given the low returns for coffee and above all the very small areas of land cultivated, the monetary revenues of the families involved are extremely low and scarcely suffice to cover their irreducible expenditures despite a highly developed subsistence system, with coffee being the main or perhaps the only source of disposable cash (the FAO estimates that in 2015, 48% of family producers in Ethiopia were living in poverty⁵⁰²). According to our estimates, the income of the coffee farmers' families is about half that of the poverty line (apart from during a one-off peak in 2011 due to a worldwide price increase). It would even have been 22% lower between 2005 and 2017.

In France, Ethiopian coffee is marketed as single origin or integrated into blends, its value depending mainly on format and brand positioning

Ethiopian coffee is valued in two different ways on the French market: some of its 'specialty' coffees are sold at high prices on the markets for upmarket/niche products (especially Sidamo, Harar and Yirgacheffe origin coffees), whereas others are destined to be blended with coffees of other origins in standard everyday coffee products⁵⁰³.

In the absence of public statistics on the price of these products sold by large retailers, we collected price data from six different brands at the end of July 2018 at nine supermarkets and big-box superstores in Paris and around the country.

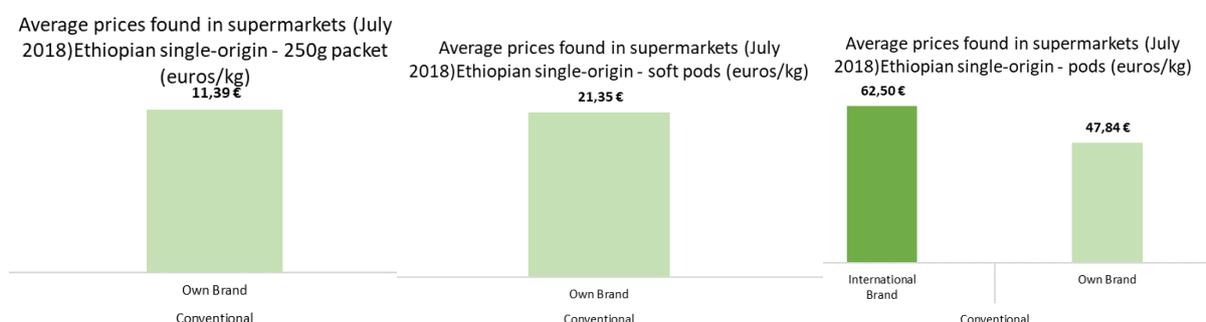


Figure 112. Consumer pricing data for coffee blends sold in France. Source: BASIC.

⁵⁰² FAO, The economic lives of smallholder farmers, 2015

⁵⁰³ Interview with a specialist in speciality coffees and the French coffee market

The resulting data did not reveal any identifiably 'single origin Ethiopian' coffees marketed by the large brands – neither in 250 g packs of ground coffee nor in flexible pods; only one reference on a coffee capsule was noted on the supermarket visits. In contrast, the data showed that private labels place a high value on single origin Ethiopian coffee in all its formats (4/6 brands of ground coffee packs and 3/6 brands of coffee capsules), as part of an overall strategy by private labels to distinguish themselves through the promotion of single origin coffees.

The effect of a 'single origin Ethiopian coffee' label on consumer end price is more significant than in the case of Columbia: +18% for 250 g packets (€11.39/kg versus €9.68/kg), +31% for pods and +10% for capsules.

Our data also show the highly important effect of differences in format on 'single origin Ethiopian' coffees: the average prices per kilo of private label flexible pods are 85% higher than for 250 g packets and capsules cost five times more per kilo than 250 g packets (these differences are more marked than for coffee blends – see the section on Peru for more details).

These gaps demonstrate the increased capacity of brands to create (much) more value thanks to the development of new formats and marketing, whereas the distinction of origin seems to generate a very weak difference in value creation in the eyes of consumers.

To extrapolate, we have compiled estimates on the differences in value for blends containing Ethiopian coffee, based on information on logistics and transformation costs consolidated by various French players (negotiators and roasters)⁵⁰⁴.

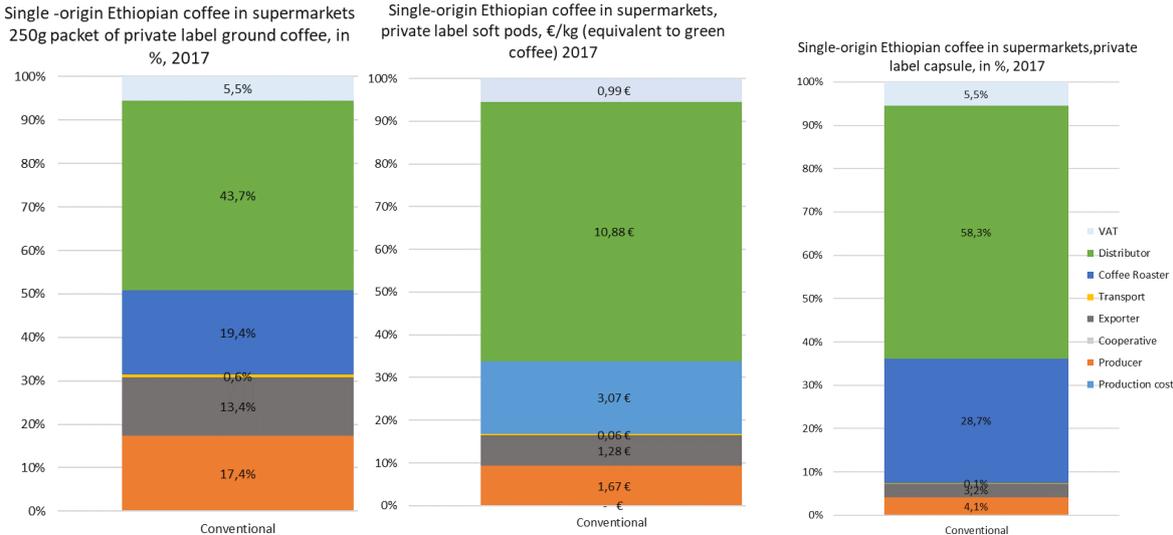


Figure 113. Drop in coffee value among consumers in France, apart from promotions by producers in Ethiopia. Source: BASIC.

Ethiopia manages to obtain a significant share of the value, more than Columbia: in 2017 the former obtained 30.8% of the final price of a 250 g packet of ground coffee (as opposed to 29% for Columbia). Out of this total, 17.4% of the value went back to the producers in Ethiopia⁵⁰⁵, a share almost double that of Columbian producers.

⁵⁰⁴ Value shares for coffee roasters and distributors are only indicative on account of the lack of available data in these links. The coffee roaster's share is a minimum figure calculated from the estimated direct costs of the coffee processing and logistics obtained from professionals, and of the added value declared in the accounts of French establishments which produce coffee. The value share of distributors is what is still needed to reach the price stated for the consumer.

⁵⁰⁵ This estimate is made on the average FOB coffee export price from Ethiopia to France which is notably weaker than the country's average export price. In the absence of more exact information, we considered that producers obtained the same price for coffee whatever the destination country; hence, Ethiopian producers got 55% of the FOB value for coffee sent to France compared to only 43% as the country's average.

Moreover, as for coffee blends, our estimates show the declining share of the value returning to the producing country according to format: for flexible pods it is practically halved (representing merely 16.5% of the final price), and is even lower if the Ethiopian coffee is marketed in capsules, the producing country obtaining merely 7.3% of the total value, of which only 4.1% returns to the producers; this becomes four times less for 250 g coffee packets.

2.3.3. Major adverse effects at the social level, which are accelerating as a result of the destabilisation of the traditional model of coffee growing

Producers below the poverty line whose socio-economic model is being destabilised

Even though Ethiopian producers manage to obtain a more significant share of the final product value than producers in Columbia and, above all, Peru, they gain an income below the poverty line due to their very low average returns (see previous section).

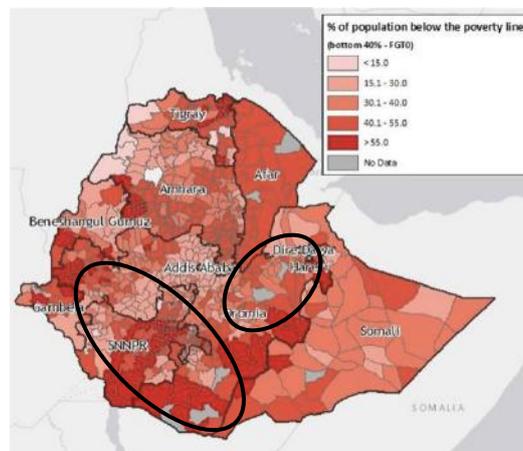


Figure 114. Poverty map of Ethiopia. Source: FAO.

National poverty statistics confirm the precarious situation of Ethiopian coffee growers (see above map). Faced with possible shocks and hazards (falling prices on the stock exchange, extreme weather events, etc.), and because they have very little savings, the coffee producers are vulnerable. Combined with increasing financial opportunities in the towns and cities, the declining attraction of agricultural work results in significant waves of migration towards urban centres.⁵⁰⁶

In addition, as in other case studies, the research available provides evidence of the marked inequality suffered by women in the coffee industry in Ethiopia. Although they carry out a great deal of the work during and after the harvest, they have only a very minor role in decision making and very limited access to property ownership, trading networks and technical support.⁵⁰⁷

⁵⁰⁶ Reta Hailu, Population dynamism and agrarian transformation in Ethiopia, African Journal of agricultural research, 2016

⁵⁰⁷ IFPRI-EDRI, Gender and cash crops: the case of coffee production in Ethiopia, 2016

Coffee sector in Ethiopia

Complete diagram

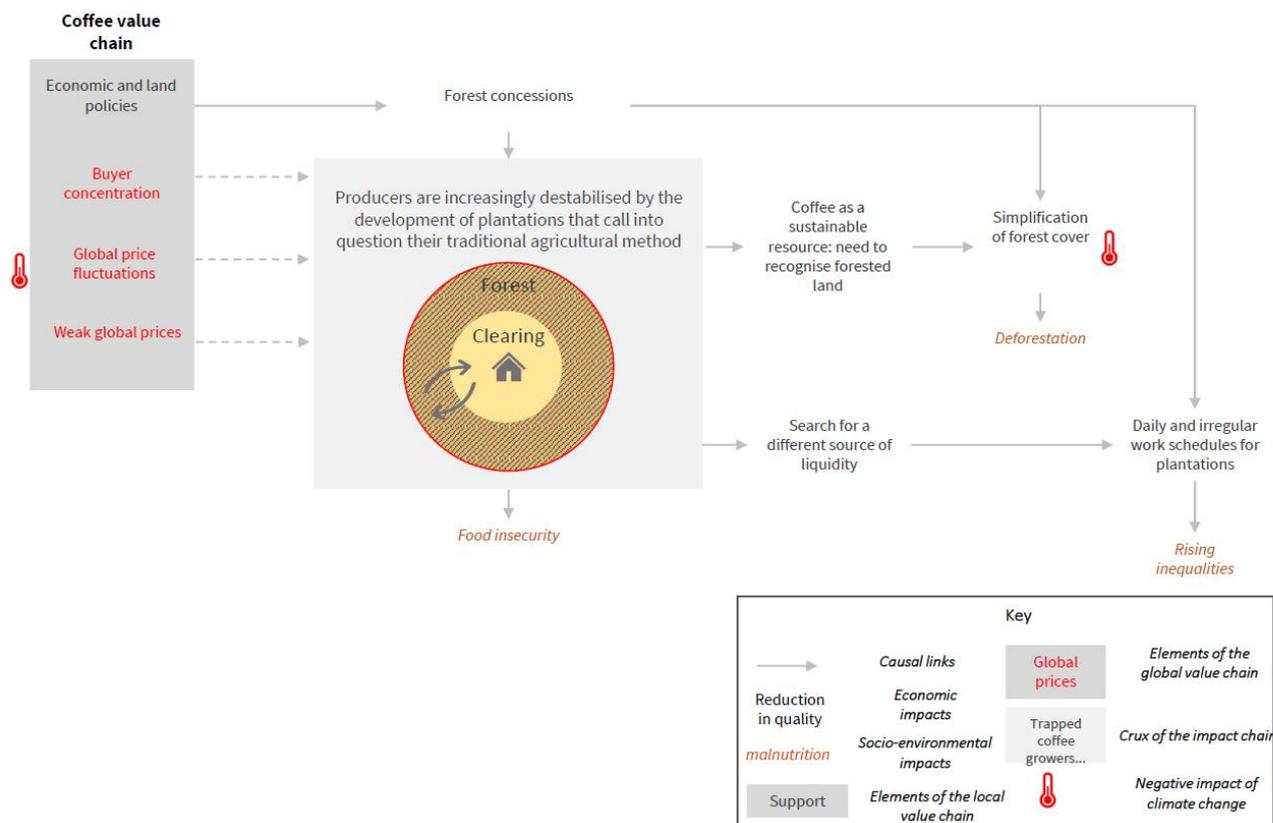


Figure 115. Negative feedback loops related to the destabilisation of the traditional agricultural system of coffee production in Ethiopia. Source: BASIC.

A compounding factor is the fact that the producers' food security model, which rests on a complex balance between the clearings they cultivate and the forests, is under threat due to government policies which seek to increase agricultural production by developing large-scale operations in forest areas (especially, but not exclusively, for coffee).⁵⁰⁸

The Ethiopian State, which owns the forests, has decided to exploit them more by giving concessions to employers for setting up agricultural operations (on anywhere from a few hectares to several hundreds, perhaps thousands, of hectares) since it considers the forests under-used by the local population.⁵⁰⁹

Hence 3 to 3.5 million hectares of forests have been awarded leasehold for 25 to 50 years since the mid-1990s, thereby generating the significant phenomenon of 'land grabbing' in the forests.⁵¹⁰

This phenomenon causes many conflicts, which can sometimes turn very violent involving the use of arms.⁵¹¹

Depriving the producers of the forests eliminates their main source of liquidity – coffee – of which about 40% of the volume comes from forest and semi-forest systems⁵¹². Only two options remain:

- Find work on the recently created plantations, which is often irregular, precarious, poorly paid (\$3 per day in 2016) and incompatible with the calendar of work of their own agroforestry systems. This

⁵⁰⁸ El Ouaamari, research note, Academy 2014

⁵⁰⁹ Anjo, Medium Scale Forestland Grabbing in the southwestern Highlands of Ethiopia, 2018

⁵¹⁰ Ibid.

⁵¹¹ Ibid.

⁵¹² Ibid.

change threatens the food security of the families, making them increasingly dependent on the plantations, which further heightens socio-economic inequality.

- Seek the recognition of the Ethiopian State for the forests that have not yet been assigned by cutting trees and intensifying their cultivation through coffee growing (so that these areas would no longer be considered poorly exploited). This adversely affects the biodiversity and balance of the ecosystem.⁵¹³

The environmental impact produced by these changes (creation of plantations of all sizes and intensive exploitation of the forests by small producers) is increasing: partial deforestation and the cultivation of fewer varieties of Arabica when the richness of this Ethiopian genetic resource makes it a valuable means for combating diseases and maintaining resilience in the face of climate change.⁵¹⁴

Added to that are the effects of climate change which are already affecting coffee production, as in the majority of other producing countries:

- A notable increase in the cultivation of coffee at higher altitudes.⁵¹⁵
- A growing uncertainty regarding rainy seasons, longer periods of drought and multiple extreme weather events such as heavy rain or intense heat.
- A decline in the quality of the coffee in the areas more vulnerable to climate change (Zege, Harar, Wellaga, Rift).⁵¹⁶
- A rise in the number of diseases (less pronounced than in Latin America, Ethiopia having been spared the rust epidemic for the time being), which leads to an increase in poor harvests and an alteration of the production cycle from biannual to a rhythm of two bad years for one good one⁵¹⁷.

Societal costs almost equal to the value of Ethiopian coffee exports.

Together, these socio-environmental effects give rise to societal costs which are borne by individuals and public authorities in order to deal with the social and environmental consequences of the functioning of the sector. We call this spending societal costs.

First and foremost, they concern the producers' lack of earning power to allow them and their families to gain an income that would enable them to live in dignity. In the absence of decent studies on incomes in rural areas, this income can be estimated on the basis of the absolute poverty line. In 2017 this was estimated at about \$170.5 per person per year⁵¹⁸.

Considering that the two million rural families who depend on coffee have five members on average, the production of coffee for export would have to bring in around \$785 million nationally to enable them to rise above the poverty line (export volumes calculated pro rata in relation to total production).

Still, the exported coffee only returned 308.5 million dollars to producers the same year, amounting to a societal cost of 476.5 million dollars.

Moreover, workers employed in coffee production find themselves in a similar situation, with recent studies having shown that the minimum wage of 3 dollars per day is 70% lower than what is needed to ensure a decent living⁵¹⁹. However, available data has not allowed an estimation of the societal cost associated with a lack of information of the number of workers and their actual working conditions.

⁵¹³ Ibid.

⁵¹⁴ Ango, Medium Scale Forestland Grabbing in the southwestern Highlands of Ethiopia, 2018

⁵¹⁵ Coffee Barometer, 2018

⁵¹⁶ Kew, Coffee Farming and Climate Change in Ethiopia: Impacts, Forecasts, Resilience and Opportunities, 2017

⁵¹⁷ IFPRI, Changes SPO Coffee Value Chains Ethiopia, 2015

⁵¹⁸ Mekore G. and Yaekob T., Determinants and its extent of rural poverty in Ethiopia: Evidence from Doyogena District, Southern part of Ethiopia, 2017

⁵¹⁹ Global Living Wage Coalition, Living Wage Report: Non metropolitan urban Ethiopia, 2017

Another societal cost concerns the expenses incurred by the Ethiopian government to provide essential public services (education, health, social welfare, water/electricity, transportation, justice, agricultural support and environmental protection) in the provinces where coffee production is located (Oromia, SNPP, Gambela, Benishagi).

In 2017, they rose to 244 million dollars (in proportion to the number of coffee producing families out of the total population of these provinces).

In light of this, the State levies a tax of 5 cents per kilo exported, for a total of 22 million dollars in 2017. Added to that are taxes on profits and revenues estimated at 19 million dollars.

Therefore, it appears that the societal cost was 203 million dollars in 2017, the shortfall for the State to meet its public service obligations, which must be funded by other sources, national or international (even though coffee represents more than 35% of the hard currency income from Ethiopia's exported products).

In terms of the environment, the nitrate pollution of water and soil pollution can be considered as negligible - even non-existent - due to the very low levels of chemical additives used by producers.

The final component of societal costs concerns the emission of greenhouse gases all along the chain, from the grower to the final consumer in France. This amounts to approximately:

- Upstream: 3 kg of CO2 for each kg of green coffee produced during coffee cultivation (based on an average production with very few additives in Ethiopia)
- Downstream: 25 kg of CO2 for each kg of coffee roasted, packaged into capsules or packets, marketed and consumed (the additional emissions linked to capsules are potentially compensated by an overload of coffee used in filter machines).

Bearing in mind that current global expenditure in fighting climate change amounts to around 300 billion dollars per year (CO2 emissions having consequences on an international scale), we can estimate that each kilo of CO2 emitted costs around 0.8 cents. For the amount of coffee exported from Ethiopia in 2017, this represents a total societal cost of 56 million dollars.

It's been impossible to calculate the societal costs linked to other previously analysed impacts (in particular land grabbing and its social and environmental consequences) due to lack of available data to quantify the extent of the problem and to identify the associated costs for society.

Thus, the total estimated societal costs for the conventional coffee sector amounts then to 740.5 million dollars in 2017 (see summary below), an amount almost equal to the export value of Ethiopian coffee (860 million dollars in 2017).

Societal cost	Amount in 2017
Shortfall to be bridged in order to ensure a decent standard of living for coffee producers	476.5 million dollars
Shortfall to cover State expenditure for essential public services infrastructure within coffee-producing provinces	203 million dollars
Expenditure generated by greenhouse gas emissions	56 million dollars
TOTAL SOCIETAL COST	735.5 million dollars
<i>FOB value of coffee exports for comparison</i>	<i>860 million dollars</i>

2.3.4. The contributions of "sustainable" sectors, fair trade and organic

Development of social and environmental certifications in the Ethiopian coffee sector is quite recent compared to Latin American producer countries⁵²⁰. It started in 2002, with Fairtrade certifications, organic

⁵²⁰ Solidaridad, impact study report in east Africa, 2014

farming, Rainforest and UTZ on products from Ethiopian forests with a goal of preserving this precious resource for the food security of the producers.

These certifications, in particular the Fairtrade business label, were seen as tools of the economic resilience of the cooperatives during this period of major coffee price crisis⁵²¹.

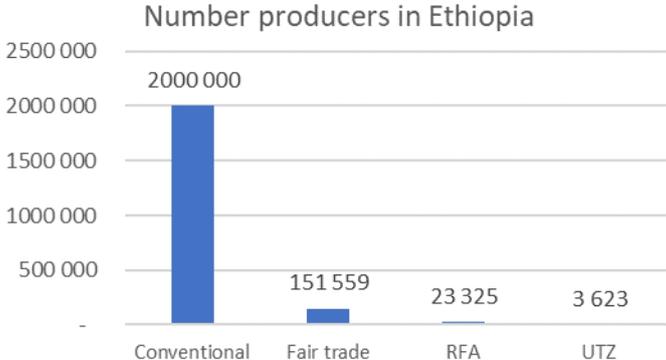


Figure 116. Distribution of the number of producers in Ethiopia in 2015/2016. Source: BASIC, based on data from IISD, Fairtrade and UTZ-Rainforest

In 2015/16, it appears that fair trade is more established in the coffee sector in Ethiopia than the UTZ and Rainforest initiatives: out of a total of two million producers, we count more than 151,000 who are members of certified Fairtrade cooperatives (without counting the other fair trade labels), compared to 23,325 and 3,623 respectively for Rainforest and UTZ, which remain marginal. The most frequently stated reasons for the weak development of these last two certifications are the small size of the cultivated parcels and the requirement of passing the ECX, which requires the anonymity of the seller, whereas the cooperatives can bypass the system (and more recently the private exporters' plantations).

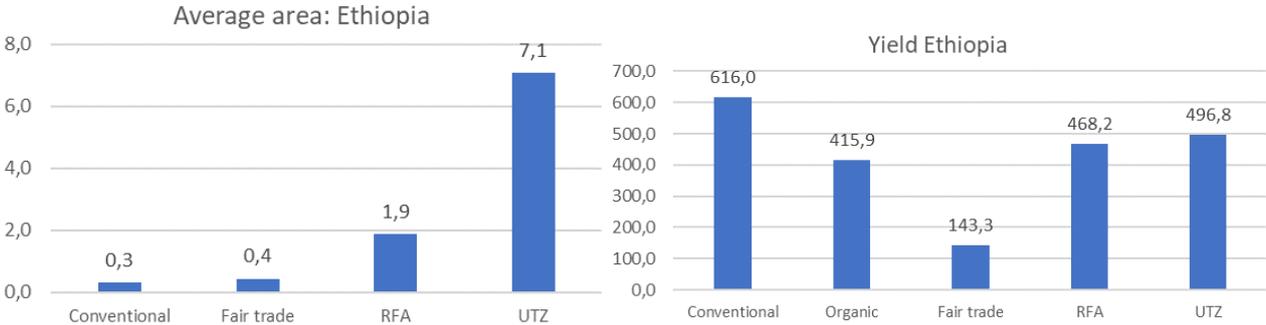


Figure 117. Average surface areas and yields in Ethiopia in 2015/2016. Source: BASIC, based on data from IISD, Fairtrade and UTZ-Rainforest

The amount sold under Fairtrade conditions (around 7,000 tons) represents about 3.5% of coffee exports from the country in 2017 (200,700 tons according to the ICO). Furthermore, according to FLO Cert statistics, the vast majority of coffee production by certified Fairtrade organizations is also certified organic, with their production representing just over 13% of the total production of organic coffee in the country.

In 2017, 29% of Ethiopian coffee cooperatives were certified Fairtrade, 27% certified organic and 2% certified UTZ or Rainforest⁵²². Published data analysis from these different approaches brings to light significant differences in the characteristics of the producers who benefit from them. Whereas members of fair trade certified cooperatives have very small plots of about average size for the country and lower yields⁵²³, UTZ or Rainforest producers are similar to "employer entrepreneurs" given the average areas they cultivate (especially in the case of UTZ).

⁵²¹ DEUL, FT Coffee & Development Field Study Ethiopia, 2009

⁵²² Mitiku et al., Do Private Sustainability Standards Contribute to Income Growth and Poverty Alleviation? A Comparison of Different Coffee Certification Schemes in Ethiopia, 2017, in Sustainability 2017, 9, 246; doi:10.3390/su9020246

⁵²³ The average coffee yield seems high considering the main production model in Ethiopia, which may be explained by a difficulty of identifying the exact surfaces of coffee on account of the large amount of forest/semi-forest coffee.

In the absence of more detailed land data, we can hypothesize that the producers in these two latter approaches have a specialized coffee production system that relies more heavily on paid manual labour than on fair trade.

Fair value chains which (very) slightly improve producers' income and have positive effects on communities, with margins apparently reduced further down the chain

In terms of value chains, fair trade certified cooperatives make up the vast majority of all types of coffee exports (with certain producer members being certified organic as well as UTZ and/or Rainforest)⁵²⁴.



Figure 118. Market chains for green coffee via exporting cooperatives. Source: BASIC

Fair trade certified cooperatives get coffee cherries from their members and carry out the 1st wet processing as well as the second process⁵²⁵. They either handle exporting themselves, or they commission exporters⁵²⁶. Based on various information and studies collected regarding the Fairtrade system in Ethiopia, it has been possible to estimate the decrease in value from the producer to the export of green coffee for the past 12 years.

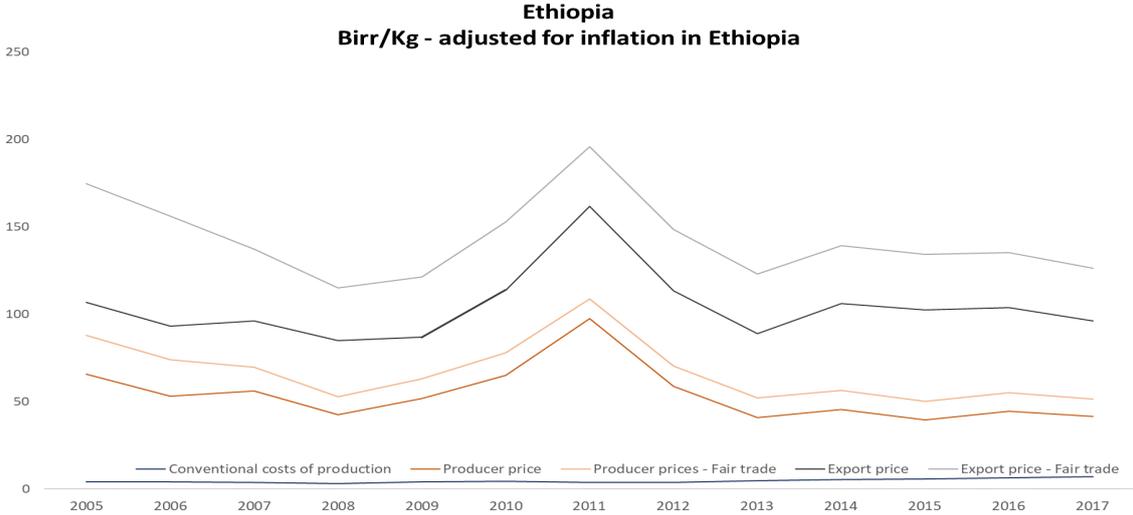


Figure 119. Progression of the decrease in value of fair trade coffee up to the FOB in Ethiopia. Source: BASIC.

Changes in export prices and prices paid to producers in the fair trade business follow parallel trajectories to those of equivalent prices in conventional approaches, except in 2005 and 2006 when the FOB export price for Ethiopian green coffee was lower than the minimum Fairtrade price, allowing cooperatives to be less affected by the Arabica price crisis. So, the impact of fair trade seems to essentially be the premium of Fairtrade development added to the export price, and from which a (small) amount is redistributed to the producers - on the order of about 10%.⁵²⁷

Head to head, the farmers' production costs in the fair trade sector are a priori the same as conventional, and their revenue is (very) slightly higher per kilo of coffee, with a tendency toward stagnation since 2013.

⁵²⁴ Solidaridad, impact study report in east Africa, 2014
⁵²⁵ IFPRI, Tracking the quality premium of certified coffee, 2017
⁵²⁶ El Ouaamari thesis (forthcoming)
⁵²⁷ DEUL, FT Coffee & Development Field Study Ethiopia, 2009

At the level of sales markets, Ethiopian coffee is largely enhanced as "single origin" (primarily with the Fairtrade label, as well as other labels like SPP or sometimes even without a consumer label by 100% fair trade brands like Lodobis). It is also sometimes incorporated in mixes, but it hasn't been possible to identify these precisely.⁵²⁸

Surveys conducted in the supermarkets visited for the study have not been able to identify fair trade, single origin Ethiopian coffee (non-organic), except in 250 g ground packages sold under private labels with the Fairtrade label. No flexible pod or Nespresso-compatible pod was identified.

The average price observed in stores for "single origin Ethiopia" coffee in 250 g packages, and the comparison to the prices observed for conventional coffee, are as follows:

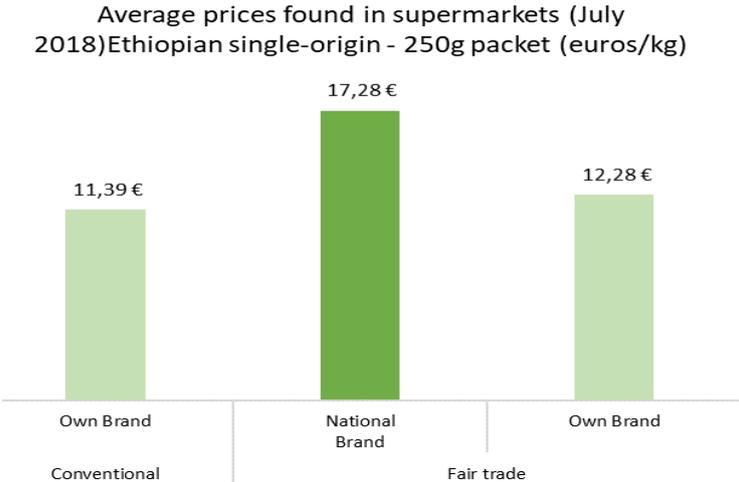


Figure 120. Consumer prices for blended fair trade and conventional coffee sold in 250 g packets in France. Source: BASIC.

First result: private label products labelled Fairtrade have a price more than 8% higher than their conventional equivalents. However, the product in question is of a different brand from conventional products, so the difference can't be entirely attributed to fair trade labelling.

Likewise, the higher price of the package sold under a national brand - which doesn't have a conventional equivalent - doesn't seem to be linked to the fair trade name as much as it is to the difference in market positioning and to economies of scale: it is marketed by a medium-sized French business that has developed a premium line, whereas the conventional product is marketed by one of the sector's primary multinational companies, and its sales volume is very large, which infers logistics and negotiating capabilities that are significantly different from larger companies.

⁵²⁸ Interviews with representatives of Max Havelaar France and brands selling fair trade coffee, held in May 2018.

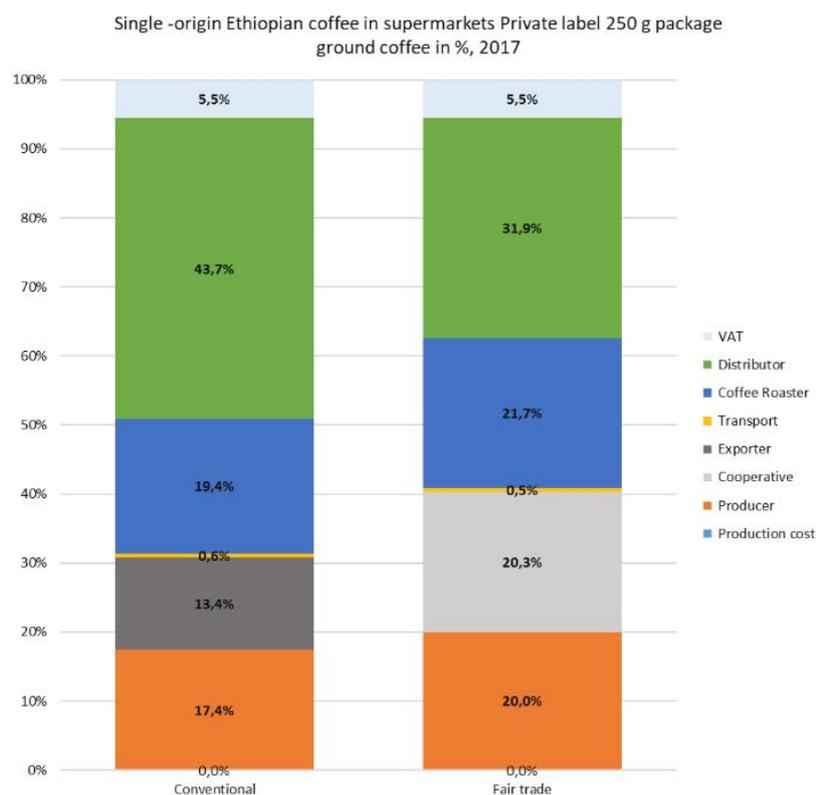


Figure 121. Value cut to fair trade, single origin Ethiopian coffee (250 g package, non-promotional price) from the producer to the consumer in France.
Source: BASIC.

On the basis of these observations, we have estimated the value distribution for coffees that are "single origin Ethiopia" conventional and fair trade sold by private labels⁵²⁹.

The percentage returning to the producer country appears to be greater for the fair trade product (40.3% vs 30.8%) in spite of the higher final price for the consumer, and seems linked to a weaker distribution margin on this private label product.

From the consumer price, the Ethiopian producer seems to get the biggest part: 20% vs 17.4% for conventional (note that it is the share that comes back to the cooperative that increases the most, reaching 20.3% vs 13.4% for exporters in the conventional sector).

This observation is consistent with recent studies on Fairtrade certified coffee in Ethiopia which demonstrate that only a small share of the export price differential is forwarded to the producers (around 30%), whereas more than half is retained by the cooperatives and their unions to cover their operating and certification costs.⁵³⁰

Furthermore, in light of the weakness of the yields and the small place held by coffee in the family economy (less than 10% of revenues when self-consumption is included), fair trade business is only a minor influence on the economic situation of coffee producing families.⁵³¹

Correlated to the small share of the production sold under fair trade business conditions (about 40% in 2016), the extra income created is about 100 dollars per year per family.

⁵²⁹ Value shares for coffee roasters and distributors are only indicative on account of the lack of available data in these links. The coffee roaster's share is a minimum figure calculated from the estimated direct costs of the coffee processing and logistics obtained from professionals, and of the added value declared in the accounts of French establishments which produce coffee. The value share of distributors is what is still needed to reach the price stated for the consumer.

⁵³⁰ IFPRI, Structure and Performance of Ethiopia's Coffee Export Sector, 2014

⁵³¹ DEUL, FT Coffee & Development Field Study Ethiopia, 2009

Added to this are the constraints on fair trade certification (environmental criteria, declaration of outside workers, documentation system for traceability...), which are often judged to be too binding in relation to the benefits producers hope to receive.⁵³²

In order to have a more meaningful impact, the issue isn't so much the price level obtained by the Fairtrade certified cooperatives - which is rather high in the Ethiopian context - as it is the (weak) redistribution of the value to the producers⁵³³. In light of the analysis of conventional coffee industries in Ethiopia, this issue goes beyond fair trade business and concerns the entire country structurally (coffee producers receiving on average just over 40% of the FOB export price, one of the lowest among exporter countries).

In the case of certified Fairtrade organizations, it would seem that this situation is difficult to change because of the weak level of competition in the sector. So, the three main certified cooperative unions alone represent 92% of the volume of coffee produced by organized producers in Ethiopia: Oromia Cooperative Union (47% of the total production of cooperatives in 2016), Sidama Cooperative Union (32.5% of the volume) and Yirgacheffe Cooperative Union (12.5% of the volume)⁵³⁴.

In the context of weak participation of Ethiopian cooperative producers (10% approximately), the internal dynamic of these organizations is rather weak and they seem to be essentially directed by their salaried teams and their elected officials (who have a low rate of turnover), in spite of the demands for transparency and good practices of governance associated with Fairtrade certification⁵³⁵.

The oligopoly situation in these three large unions could be called into question in the near future, because of the possibility offered to private exporters to do business outside the ECX in coffee purchased from non-unionized producers⁵³⁶. If such a change could generate positive changes for the producers (including those who belong to unions), it also represents a risk because of the difficulty of the latter to become more independent with a contractual production model, with the exporters having much more negotiation power.

At the level of the workers, even if the vast majority of producers belonging to certified Fairtrade organizations don't rely on salaried labour, there are those who possess several hectares of coffee and employ outside workers (but apparently less than in the UTZ and Rainforest systems). In these cases, the work conditions of these employees (as well as those of the processing facilities) seem to be just as difficult as work conditions in the conventional sector: salaries, employment rates, contract length, safety protection, etc.⁵³⁷

The biggest impacts of fair trade business that the field study documented hit further down the chain in Ethiopia.

Fair trade business was first of all a conduit for cooperatives and their unions to directly export their coffee to more profitable markets, without going through the ECX. Managing to take more than half of the profit of fair trade sales at export, they are able to cover their basic expenses, certification costs and processing infrastructure investment costs.⁵³⁸

Furthermore, part of the non-negotiable premium (30% to 50%) is used for community investments, which have improved school enrolment in the communities, and to support producers with services and technical training, so that they adopt better farming practices (composting for example)⁵³⁹. These investments are often such that they are accessible for all members of the communities. These beneficial impacts have a paradoxical

⁵³² IFPRI, Tracking the quality premium of certified coffee, 2017

⁵³³ Farm Africa, Ethiopian Coffee Forest: Value Chain Analysis, 2017

⁵³⁴ Farm Africa, Ethiopian Coffee Forest: Value Chain Analysis, 2017

⁵³⁵ Farm Africa, Ethiopian Coffee Forest: Value Chain Analysis, 2017 and interview with a manager from Farm Africa in July 2018

⁵³⁶ Interview with a Farm Africa official in July 2018

⁵³⁷ FTEPR, Fairtrade, employment and Poverty reduction in Ethiopia and Uganda, 2014

⁵³⁸ IFPRI, Tracking the quality premium of certified coffee, 2017

⁵³⁹ IFPRI, Tracking the quality premium of certified coffee, 2017

effect of demobilizing producers' participation in the inner life of cooperatives when they realize that non-members benefit from most of the services offered, without being forced to comply with Fairtrade specifications.⁵⁴⁰

Based on these results, it's possible to estimate the impact of fair trade business on previously evaluated societal costs (prorated on the number of producers concerned):

- The societal cost linked to the under payment of the producers is reduced by about 12% compared to conventional methods.
- The development premium reduces the need to finance essential services by 28% compared to conventional methods.
- There is no documented societal cost differential insofar as greenhouse gases are concerned (because of the very low use of chemicals in the country).

More profitable fair trade and organic value chains for producers, with apparently lower margins further downstream

There's a strong possibility that Ethiopian producers will move to organic because:

- They need to change production systems in order to conform to certification criteria (they don't even use potassium, which is allowed under the specifications).
- For now, the country has been spared any coffee rust epidemics, which have greatly impacted producers in Central and South America.

In spite of that, just a (very) small amount of coffee production is certified organic.

On the one hand, tracking the coffee resource is more complex for production in forested and semi-forested areas, which represent 45% of the volume, and on the other hand, the traceability requirements are more difficult to implement with small producers. Furthermore, ECX operations slow the development of organic farming by not authorizing the traceability of coffee to the farm, except for exports directly authorized for cooperatives' unions, and more recently the average and large coffee plantations (a change that could accelerate the development of organic farming and preserve shading in coffee culture, but also generate land grabbing problems as previously described).

These are in large part certified Fairtrade producers' organizations that have invested in the potential of organic coffee in Ethiopia, obtaining double certification for their members, which allows them to diversify their outlets (according to the FLO Cert statistics, the vast majority of them had both certifications in 2015)⁵⁴¹.

⁵⁴⁰ Mojo, The determinants and economic impacts of membership in coffee farmer cooperatives, 2017

⁵⁴¹ Interviews with Ethiopian fair trade sector stakeholders held in July 2018

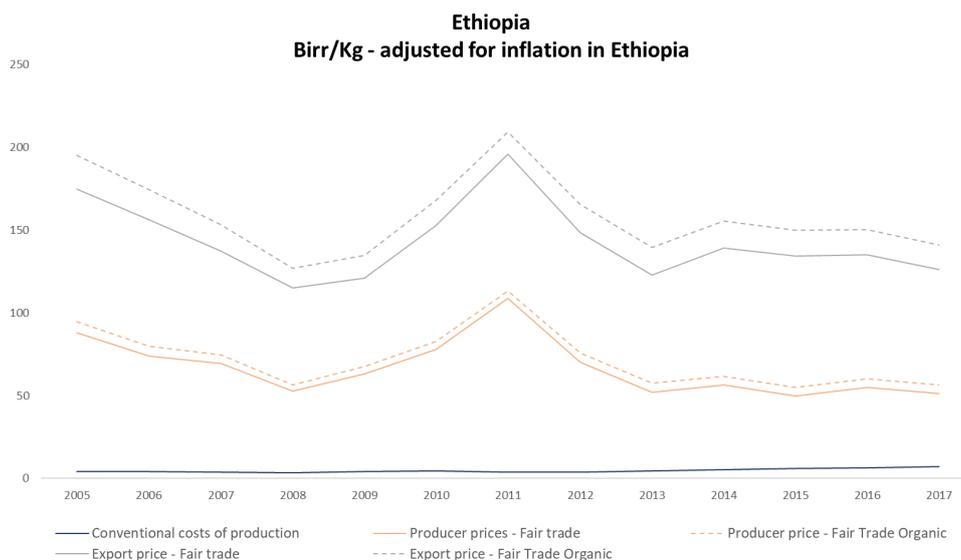


Figure 122. Evolution of the loss of value of fair trade and organic coffee up to FOB in Ethiopia. Source: BASIC.

Concerning the evolution of export prices and those paid by producers in Ethiopia, they follow similar trajectories to those of non-organic for the past 15 years.

The difference of level is essentially linked to the organic premium expected in the Fairtrade specifications (0.3 dollars per pound of coffee since 2011), which is added to the price of exportation and to the development premium⁵⁴².

When compared directly, fair trade organic farmers' production costs are very similar to non-organic because of the very low use of chemicals,⁵⁴³ and the producers' revenues are a bit higher per kilo of coffee (approximately 15% to 20%) because the cooperatives repay a portion of the organic premium received.

Coffee marketed under these two certifications generally reaches the same sectors and stakeholders, SMEs and VSEs, as coffee that only has a Fairtrade label⁵⁴⁴.

At the sales market level, Ethiopian fair trade coffee is priced in the same way as non-certified organic, as "single origin Ethiopia" (and to a lesser extent mixes that couldn't be precisely identified).

Data collected in supermarkets visited during the study made it possible to estimate the differences in the average price paid by the consumer for "single origin Ethiopia" coffee sold in 250 g packages and in Nespresso compatible pods.

⁵⁴² DEUL, FT & Development Field Study Ethiopia, 2009 and IFPRI, Tracking the quality premium of certified coffee, 2017

⁵⁴³ Solidaridad, impact study report in east Africa, 2014

⁵⁴⁴ Interviews with representatives of Max Havelaar France and brands selling fair trade coffee, held in May 2018.

Average prices found in supermarkets (July 2018) Ethiopian single-origin - 250g packet (euros/kg)

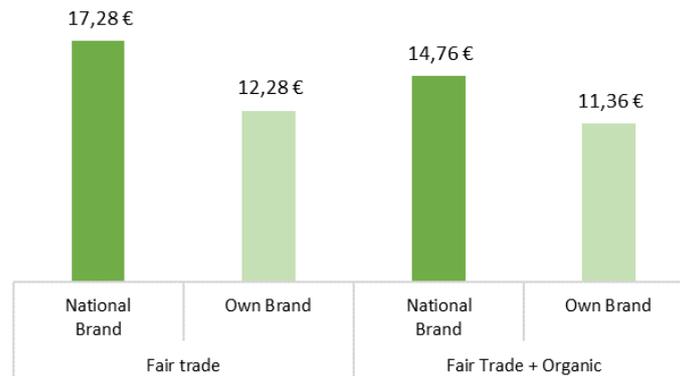


Figure 123. Summary of retail prices of organic fair trade and non-organic single-origin Ethiopian coffees sold in 250 g bags in France. Source: BASIC.

For the national brands, an organic fair trade bag is about 15% cheaper than a non-organic bag. This difference in price has more to do with differences in market positioning than with double certification (the non-organic product is sold by an SME which has developed a range of premium coffees, while the organic product is sold by an SME which has developed a diversified range of products other than coffee), leading to different mark-up strategies by supermarkets.

For the private label brands, the organic fair trade bag is 7% cheaper than the non-organic. This difference cannot be entirely attributed to fair trade labelling since the product in question is from a different brand than the one selling the non-organic coffee.

Average prices found in supermarkets (July 2018) Ethiopian single-origin - pods (euros/kg)

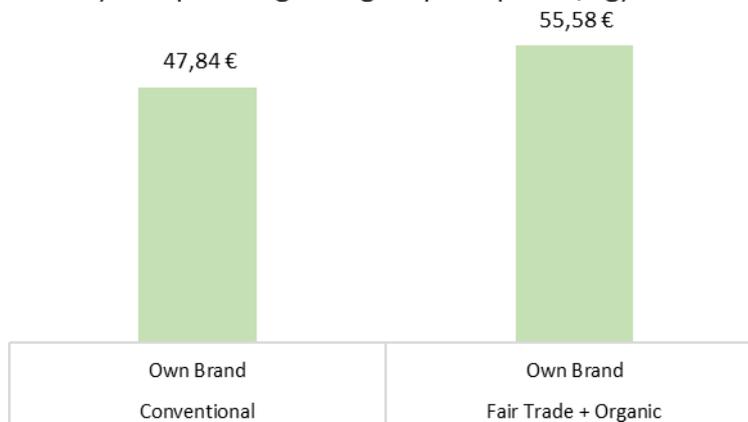


Figure 124. Summary of retail prices of organic fair trade and non-organic single-origin Ethiopian coffees sold in capsules in France. Source: BASIC.

The private label organic fair trade capsules were only compared with the similar conventional product. The double-certified capsule is 16% more expensive than the standard private label capsule. This result cannot be entirely attributed to the different labels since the product in question is from a different brand than the one selling standard capsules.

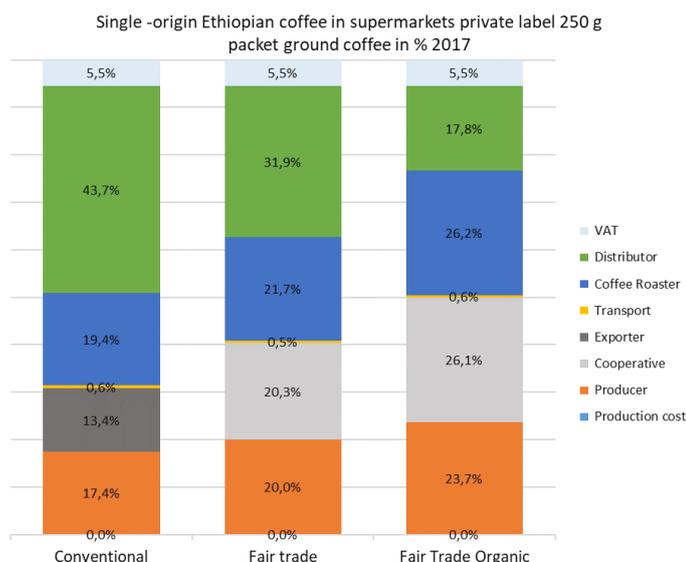


Figure 125. Breakdown of value of bags of full-price single-origin Ethiopian organic and non-organic coffee from producer to consumer in France. Source: BASIC.

Based on these results, we have estimated the value distribution for single-origin Ethiopian coffee sold in 250 g bags⁵⁴⁵. We observed that a greater share of the value of the double-certified bag went to the country of origin: 49.8% of the final price, versus 40.3% for the pack without the organic label (and 30.8% for conventional).

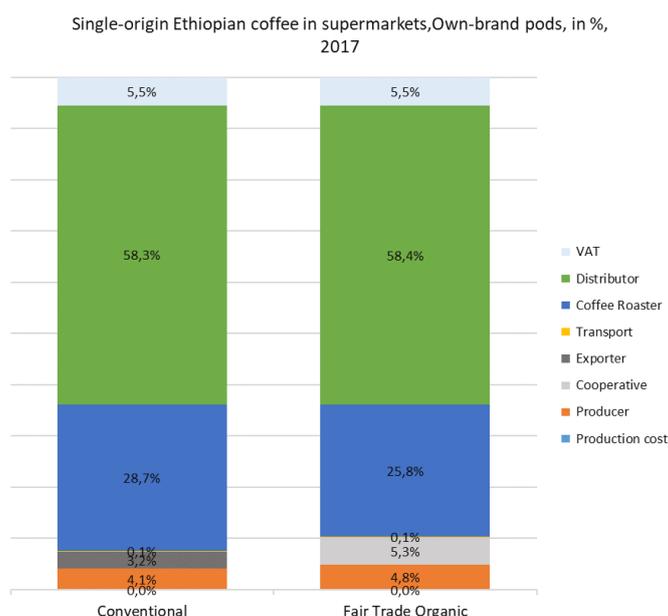


Figure 126. Breakdown of value of bags of full-price single-origin Ethiopian organic and non-organic coffee from producer to consumer in France. Source: BASIC.

For private label capsules, our results suggest a slightly greater share goes to the producing country (10.1% compared to 7.3% for conventional). However, this share remains four times smaller than that of the ground coffee sold in 250 g bags.

The impact of this increased value is that it generates greater income for producers who are members of double-certified Fairtrade and organic organizations (even though more than half the export price differential is absorbed by cooperatives and their unions, as with the fair trade non-organic sectors).

⁵⁴⁵ Value shares for coffee roasters and distributors are only indicative on account of the lack of available data in these links. The coffee roaster's share is a minimum figure calculated from the estimated direct costs of the coffee processing and logistics obtained from professionals, and of the added value declared in the accounts of French establishments which produce coffee. The value share of distributors is what is still needed to reach the price stated for the consumer.

This results in a 10% reduction in the social cost linked to the underpayment of producers with the double certification compared with the Fairtrade certification alone (thanks to the organic premium paid to coffee growers).

Even beyond effects such as these, which can be quantified in monetary terms, organic farming has numerous benefits: protection from heavy rainfall, which damages crops; dry wind, which often increases with climate change; better soil moisture; etc.

On a more structural level, this certification appears to be essential for the Ethiopian market, particularly given the current destabilizing increase in prominence of specialized plantations, because it preserves the traditional agroforestry model.

The much under-documented effects of the UTZ and Rainforest certifications

As explained at the beginning of this section, Rainforest-certified producers, and especially UTZ-certified producers, have a very different profile from most coffee growers in Ethiopia: they are similar to agricultural entrepreneurs with larger-than-average specialized plantations.

A recent study published in 2017 confirms this assessment: a sample of several dozen Rainforest-certified producers shows them to be highly specialized in coffee, with more than three quarters of their agricultural land dedicated to growing coffee (even in semi-forest cultivation), in contrast with a maximum of 25% in the case of producers who are members of Fairtrade-certified cooperatives.⁵⁴⁶

Beyond this, we have not identified any other studies which would allow us to better understand the situation of the Rainforest- and/or UTZ-certified producers, or the structure of the value chains they are part of. Likewise, we were unable to identify any coffee from Ethiopia sold in supermarkets with the Rainforest label (neither single origin nor blends) during our store surveys.

We have identified only one study which has investigated the impact of Rainforest certification in Ethiopia (but none regarding UTZ).⁵⁴⁷

The study, based on an econometric analysis comparing the situation of producers who are members of conventional, Rainforest-certified, Fairtrade-certified, organic-certified, and dual Fairtrade- and organic-certified cooperatives does not allow for any conclusions to be drawn specifically about the impact of the Rainforest certification.

Indeed, though the producers who benefit from the Rainforest certification have improved incomes thanks to their coffee production, this is due equally - possibly more - to the quality of their coffee (which predates the certification), and the markets for specialty coffee which buy from them as it is to the Rainforest program itself.

Without more precise information, it is not possible for us to draw any conclusions about the impact of the Rainforest and UTZ programmes in Ethiopia. Moreover, given the current destabilization of the traditional agroforestry model, linked to a rise in specialized coffee farms, we would need field studies investigating the potential contribution of the UTZ program (and to a lesser extent the Rainforest program) to this situation and the resulting land grabs.

2.3.5. Cross-sectional study of Ethiopia-France value chains

⁵⁴⁶ Mitiku et al., Do Private Sustainability Standards Contribute to Income Growth and Poverty Alleviation? A Comparison of Different Coffee Certification Schemes in Ethiopia, 2017, in *Sustainability* 2017, 9, 246; doi:10.3390/su9020246

Note that Rainforest certification is only available for producers that have a semi-forest coffee production model. Garden operations and specialised plantations are excluded from this certification.

⁵⁴⁷ Mitiku et al., Do Private Sustainability Standards Contribute to Income Growth and Poverty Alleviation? A Comparison of Different Coffee Certification Schemes in Ethiopia, 2017, in *Sustainability* 2017, 9, 246; doi:10.3390/su9020246

Ethiopia has a strong coffee culture, with a traditionally high level of internal consumption. However, this coffee is produced by highly diversified family subsistence farming, where coffee is a minority crop and is 70% dry processed.

The regulation introduced by the Ethiopian government is of liberal intent: its goal was to create a stock market as the sole means of export, as close as possible to the ideal of perfect competition where stakeholders of all sizes come together.

On average, producer prices have evolved with the FOB price, with very low production costs, mostly family labour, and very limited yields. The producer sees only 9% of the final selling price - which is quite high due to the quality of Ethiopian coffee and its status among single-origin products.

At the other end of the chain, Ethiopian coffee is partly used in blends and partly marketed as single-origin in France. Our supermarket surveys only identified single-origin Ethiopian products in small numbers, marketed under own-brands and sold in all formats: 250 g bags, soft pods and capsules (unlike Colombian coffee). Their retail price is between 10% and 30% higher than equivalent coffee blends, reflecting the higher status of Ethiopian coffee compared to Colombian coffee. The share of the final price received by the country of origin reaches almost 30% for 250 g bags of ground coffee (similar to Colombian coffee), but drops to 16% for pods, and falls even further to around 7% for Ethiopian coffee capsules.

Most producers earn very little from coffee production, which is one of the few sources of income for families. A small proportion of producers (20%) are organized into cooperatives. Recently, state policy has encouraged agricultural specialization and granted forest concessions, which has led to the emergence of "employer entrepreneurs", with agricultural lands ranging in size from about ten to several hundred hectares. This leads to a culture of land grabbing, deforestation and impoverishment of traditional farmers who lose access to the market to sell their coffee and instead become seasonal workers on plantations (or complementary suppliers).

Climate change has begun to affect the country, though less aggressively than in Central and South America. It puts not only the country's production potential at risk, but also the natural diversity of its forests, which will be a precious genetic resource when adapting to new climate conditions in the future.

In this context, the table below summarises the main impacts of the fair trade production chain - especially Fairtrade - including those associated with organic farming, and of the UTZ/Rainforest production chains compared with those of conventional production systems.

Ethiopia

	Conventional	Fair trade (Fairtrade)	Fair trade (Fairtrade) + organic	UTZ / Rainforest Alliance
Producers	<ul style="list-style-type: none"> Poverty (very low monetary incomes) Loss of the source of liquidity Destabilisation of the agricultural method and household food security <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Monopolisation of forested land Undervalued production method 	<ul style="list-style-type: none"> Improved incomes and living standards Limited impact given coffee's income-generating potential Access to treatment and healthcare services Collective accumulation of capital in cooperatives <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Use of the premium for social projects Direct and more balanced trade relations 	<ul style="list-style-type: none"> Higher prices for producers Coverage of increased production costs and improved incomes Promotion of organic farming <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Use of the organic premium Direct and stable relationships with buyers in profitable markets 	<ul style="list-style-type: none"> Increased revenue (existing prior to certification) <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Priority given to productivity Access limited to producers with sufficient resources and support
Workers	<ul style="list-style-type: none"> Growing inequalities between farm owners & workers Precarious and irregular work Destabilised food security system 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> No documented impacts
Pollutant emissions	<ul style="list-style-type: none"> (Very) limited use of inputs in the traditional coffee cultivation method 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> Preserving biodiversity and improving ecosystem services <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Preservation and development of an organic agroforestry method 	<ul style="list-style-type: none"> No documented impacts
Deforestation	<ul style="list-style-type: none"> Recent trends in the deforestation of large plots <p><i>Explanatory factors:</i></p> <ul style="list-style-type: none"> Economic forest concession policy for developing plantations 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> No documented impacts 	<ul style="list-style-type: none"> Low probability of deforestation
Impacts of climate change	<ul style="list-style-type: none"> Colonisation of high altitude zones Loss of productive capacity of low altitude plots Dry periods Coffee berry borer 	<ul style="list-style-type: none"> Increased investment capacity Organised producers enable knowledge sharing 	<ul style="list-style-type: none"> Reduced impacts of climate change: soil management, moisture conservation, protection against drought and heavy rains 	<ul style="list-style-type: none"> No documented impacts

Figure 127. Table summarizing impacts in Ethiopian-French sectors. Source: BASIC.

Nevertheless, the effects of Fairtrade certification on producers' quality of life are still minimal due to coffee making up a small part of their incomes and the cooperatives using most of the premium to cover their internal costs. This situation is more reflective of producers' limited participation in cooperatives and unions, a lack of internal cohesion in these organisations and the weak competition between them (these are pre-existing issues which go beyond just the fair trade initiative, but which the initiative has not as yet managed to resolve). Furthermore, the emergence of "employer entrepreneurs", including within fair trade-certified cooperatives, raises questions concerning the living conditions of the workers they employ.

The most obvious positive effect can be seen in cooperatives which have managed to leverage fair trade for their own development, build collective capital and invest in community infrastructure (e.g., education, health, etc.).

Most Ethiopian coffee is naturally organic, and a large part is double-certified Fairtrade and organic. When production is fair trade certified, producers can see a 10% increase in their income. Above all, it helps to preserve the traditional Ethiopian agroforestry model for coffee production, minimizing the effects of climate change in the country (hot winds, heavy rainfall and longer dry seasons).

At a market level, fair trade coffee, whether organic or not, is primarily marketed as single-origin, just like conventional coffee. It is mainly sold in 250 g bags, but also more recently in capsules (as private labels). Our store survey data show that the profit margins on these products for coffee roasters and distributors is slightly lower in fair trade commerce (both organic and non-organic), with the share received by the producing country (coffee growers and cooperatives) being 30% for a 250 g bag of conventional coffee, and 40% for a non-organic private label bag, and almost 50% for a double-certified private label bag (the highest rate in our three case studies). However, this share falls to 10% in the case of capsules. In this format, fair trade makes no difference to the inequalities in value distribution.

In comparison, the Rainforest program and especially the UTZ program appear to be uncommon in Ethiopia, and are primarily implemented by plantations which were already large and specialized before their

certification, in contrast with the country average and the producers in the fair trade sectors. Later, we found no Ethiopian coffee with UTZ or Rainforest certification in our results. The only available impact assessment of Rainforest certification does not concretely show its specific impacts, which mainly stem from the characteristics of the producers before certification. Moreover, given the current destabilization of the traditional Ethiopian agroforestry model due to coffee production specialization, further studies would be needed to evaluate the potential contribution of UTZ and Rainforest certifications.

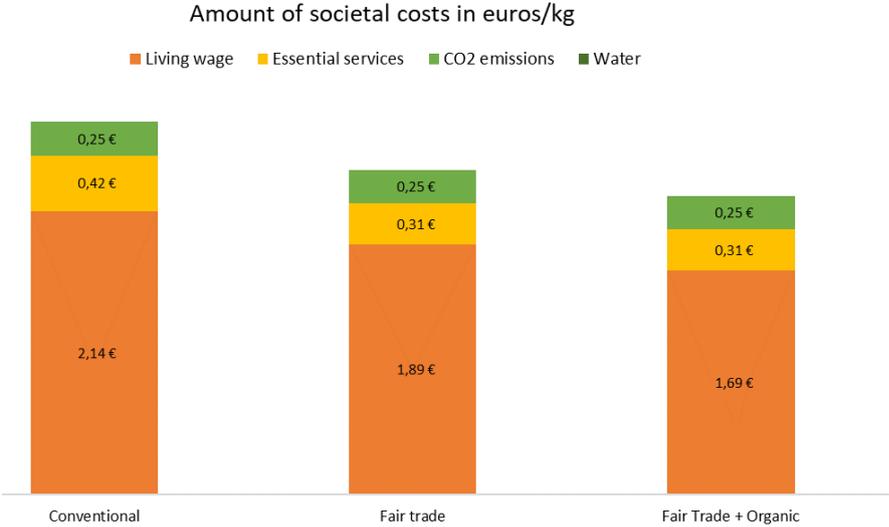


Figure 128. Comparison of societal costs in Ethiopia-France sectors. Source: BASIC.

These differences in impact translate into costs to society: in the conventional coffee sectors, these costs rose by 2.81 euros per kilo in 2017, the highest rate in the three case studies (equivalent to 735.5 million dollars on a countrywide scale). The available impact assessments show that these costs were reduced by 13% for Fairtrade-certified sectors (2.45 euros per kilo), thanks in large part to the premium being allocated to development, and by 20% with dual Fairtrade and organic certification (reaching 2.25 euros per kilo, the highest rate in our three case studies). As for the UTZ and Rainforest certifications, the studies did not allow for an estimation of their costs to society.

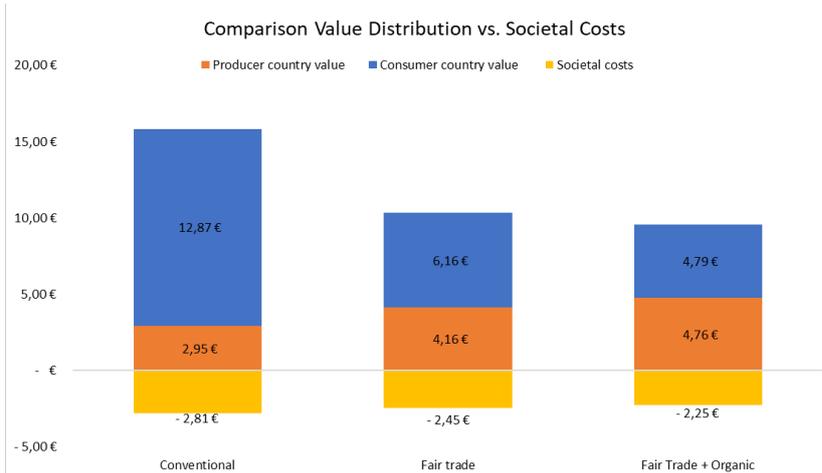


Figure 129. Comparison of value distribution and societal costs in the Ethiopia-France sectors. Source: BASIC.

Overall, our estimates indicate that these differences in societal costs correlate to a value distribution that better supports producing countries, particularly for the fair trade and organic sectors. However, these results are due in large part to the high proportion of pods and capsules in the standard sector (compared with the fair trade and organic sectors). When we study each format separately, we see that the producers receive a larger share for fair trade ground coffee in 250 g bags, with the differences being much less noticeable for

single-serve coffee, in particular for capsules, where coffee roasters and distributors receive more than 85% of the value

3. Comprehensive cross-sectional study

The coffee market has changed profoundly over the last two decades, becoming more and more polarized, both in terms of consumption and production.

On the one hand, sales of high-end products with a high added value are booming, particularly of pods and capsules consumed at home (accounting for 11% of the global market) and coffee consumed in coffee shops (about 25% of the turnover of the non-domestic catering sector).

This growth is sustained by consumer appeal for the intangible characteristics associated with coffee (specific formats and machines, brand image, places dedicated to coffee consumption, etc.), and to a lesser extent by the link between these new means of consumption and a diversified range of coffees available (specialty, origin or certified).

This trend is particularly strong in the mature markets of Europe and the US but also increasingly in emerging economies and the producing countries.

In terms of supply, this trend creates a growing demand for Arabica beans that meet demanding product traceability and quality specifications and which are produced by a small number of producers able to fulfil these requirements.

On the other hand, most of the coffee consumed globally each year is still linked to standardized products sold in mass quantities at low prices through traditional sales channels (supermarkets, cafés and restaurants).

Although this sector is in decline in the European and North American markets, it is growing quickly (particularly instant coffee) in emerging economies and coffee-producing countries, which are very dynamic markets that are increasingly important on the global scene.

This sharp rise in consumption of standardized products creates a growing demand on the international market for cheap "commodified" coffee, particularly Robusta, which now represents 40% of worldwide production.

Either way, most of the profit goes to the major players established in the country of consumption - distributors and especially coffee roasters - since they have managed to combine the key controlling factors in the chain:

- Oligopolistic market shares through mergers and acquisitions
- Development of intangible characteristics associated with their range - specific formats of consumption, brand image, specialized distribution networks - which are also later leveraged for value creation
- Control of these characteristics through filing of patents and trademarks (proprietary machines, product names, etc.)

These trends are at work most especially in France, where the market for capsules and pods is the most developed in the world. In 2017, this market represented more than 1.5 billion euros' worth of sales (all distribution channels combined), or more than half of the turnover of domestic coffee consumption.

Its growth has had a major impact on the average price per kilo of coffee bought by consumers over the last 20 years: the price has increased from 9.1 euros per kilo in 1994⁵⁴⁸- the year when coffee consumption in pods and capsules was just starting - to 15.8 euros per kilo in 2017.

⁵⁴⁸ excluding soluble and not inflation adjusted

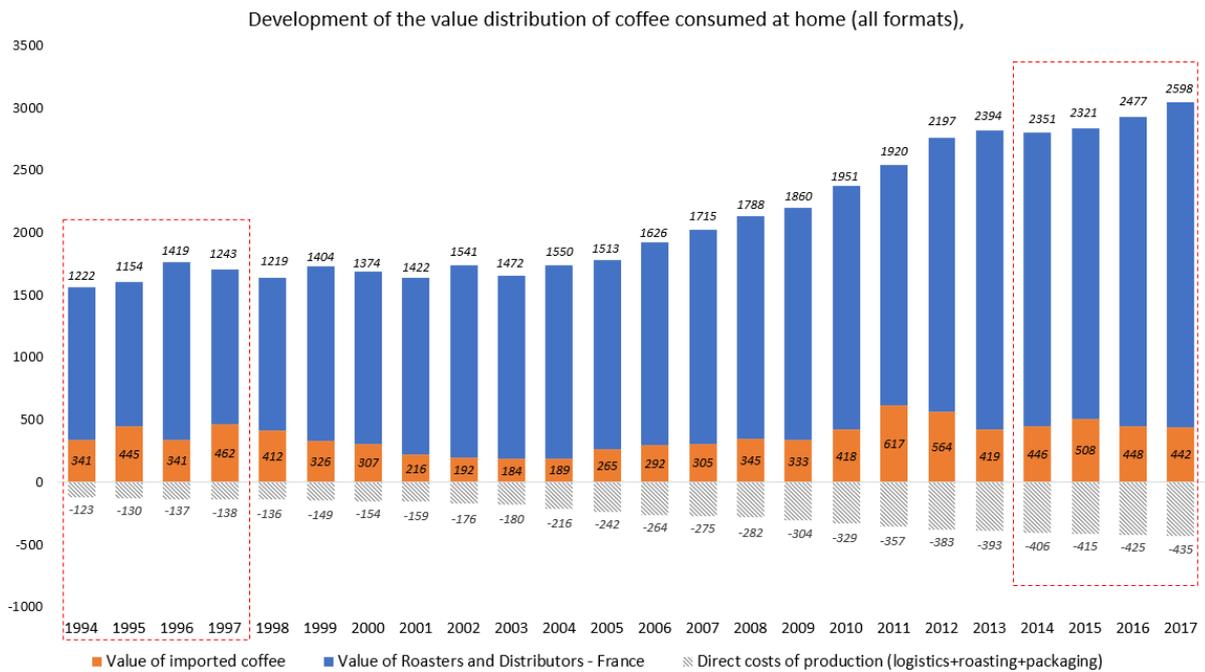


Figure 130. Evolution of the value distribution of domestic coffee consumption in France. Source: BASIC.

This value creation mostly benefits a small number of coffee roasters and distributors who dominate the market and achieve ever greater profits: the added value that they create in France tripled between 1994 and 2017, rising from 1.2 billion euros to 2.6 billion euros by our estimate. This strong growth can only be explained by the increase in costs relating to development of pods and capsules: based on our estimates, the entirety of the direct costs of processing, packaging and transport of coffee consumed in France only increased by around 310 million euros between 1994 and 2017, which is significantly lower than the additional earnings of 1.4 billion euros garnered by coffee roasters and distributors.

In the earlier stages, the value of coffee imported into France fluctuates according to changes in the prices of Arabica and Robusta, which depend on yields and stock market speculation (from 184 billion euros at its lowest in 2003, to 617 billion euros in 2011). Finally, the value appears to be both low and volatile compared with the evolution further down the chain.

Development of value distribution of coffee consumed at home (all formats), in millions of Euros

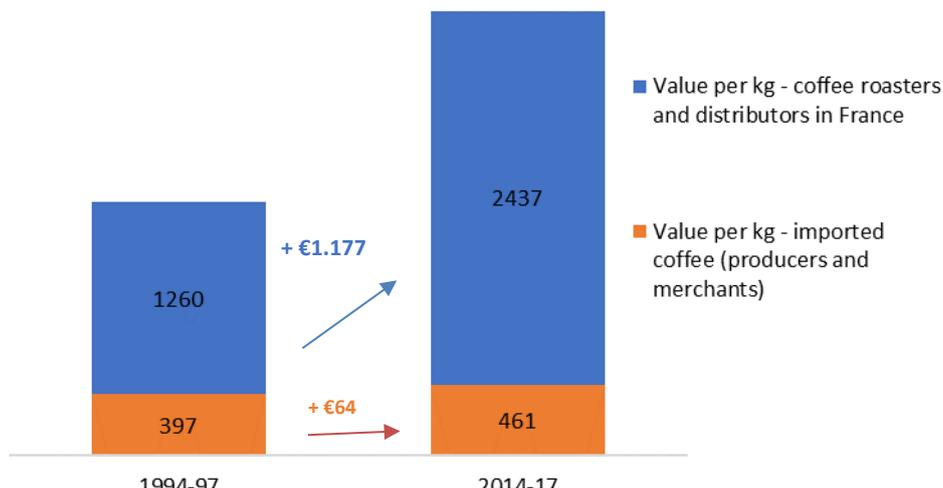


Figure 131. Evolution of the value distribution of domestic coffee consumption in France in 1994-1997 and 2014-2017. Source: BASIC.

A comparison 20 years apart (1994-1997 vs 2014-2017) of the value created by the stakeholders at the end of the chain (coffee roasters and distributors) compared with that at the beginning (producers and wholesalers) shows the profound inequality of how the industry has changed in France:

- while coffee roasters have created 1.177 billion euros' worth of extra value over the last 20 years by selling coffee to consumers...
- ...the producers and wholesalers have only created 64 million euros' worth of extra value (or 4% of the earnings of stakeholders at the end of the chain). This increase is only visible because it does not take into account inflation in the country of production (which has usually been largely superior).

The stakeholders at the beginning of the chain (producers and wholesalers) have only received 16% of the total value generated on the French market over the last four years (2014-2017), in contrast with 24% 20 years earlier (1994-97). While the value created downstream continues to grow, the share that producers receive is shrinking, a fact made worse by the asymmetrical negotiation powers they suffer from when faced with large traders.

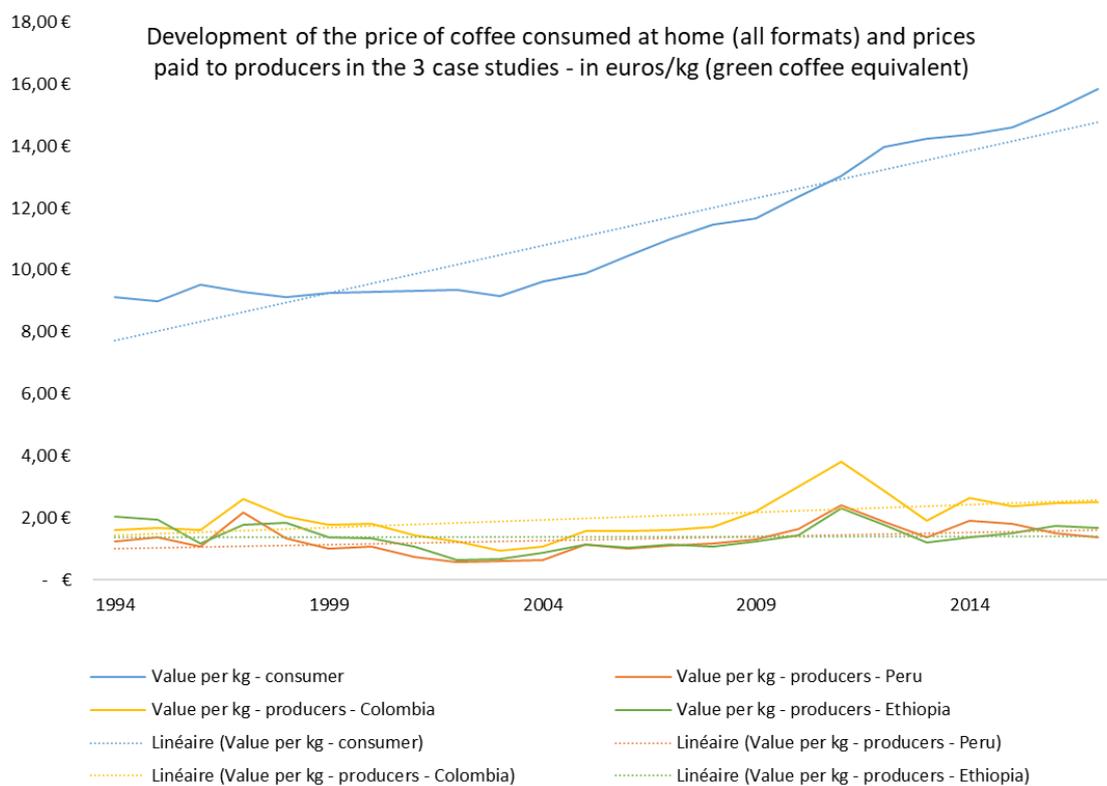


Figure 132. Evolution of the price of coffee consumed at home (all formats) and the prices paid to producers in 3 case studies. Source: BASIC.

A more detailed value chain analysis in the 3 producer countries selected for this study shows:

- In Peru and Ethiopia, prices paid to producers since 1994 were stagnant over the long term (and fell when taking inflation into account); producers received no more than about 10% of the final retail price in 2017 (all formats combined). In contrast, production costs have risen sharply, particularly in Peru, where they have gone from €0.44/kg in 2005 to €0.71/kg in 2017, thereby reducing the income available to producers.
- In Colombia, trends show a slight increase (without taking inflation into account), thanks to a specific public intervention in the country; however, even in this case, producers have only been able to receive an average of 16% of the final retail price in 2017 (all formats combined). At the same time, costs have risen sharply, rising from €0.98/kg in 2005 to €1.51/kg in 2017, cancelling the price increase gained by coffee growers.

In more detail, our price data and estimates of value loss show that beyond the disparities between producing countries, the value share received by producers is much lower for the new coffee formats:

- After deducting production costs, producers receive around 5.5% (Peru) to 17% (Ethiopia) of the final price of a 250 g package of ground coffee.
- In comparison, they only receive 1.3% (Peru) to 4% (Ethiopia) of the final price of Nespresso-compatible capsules.

Furthermore, our studies in supermarkets have shown that the supply of 'single-origin' coffees is very limited, particularly for capsules (basically linked to distributor brands), and sold at only slightly higher prices than coffee blends.

While they are not statistically representative, these results suggest consumers place little value on coffee origins compared to the names of blends that major brands are developing more and more (for example, "splendente", "satinato", etc.). This fact raises questions on the effectiveness and use of 'terroirs' as a way to create value for producers in the face of the marketing strategies of large businesses, which tend to create their own blend names rather than highlight geographic origin.

Limited to only receiving a small share of the final value of marketed coffees, the large majority of producers remain in a very vulnerable situation, as our analyses showed in the three countries studied (even if a small minority of coffee growers cope a little better by supplying high quality coffee for niche markets).

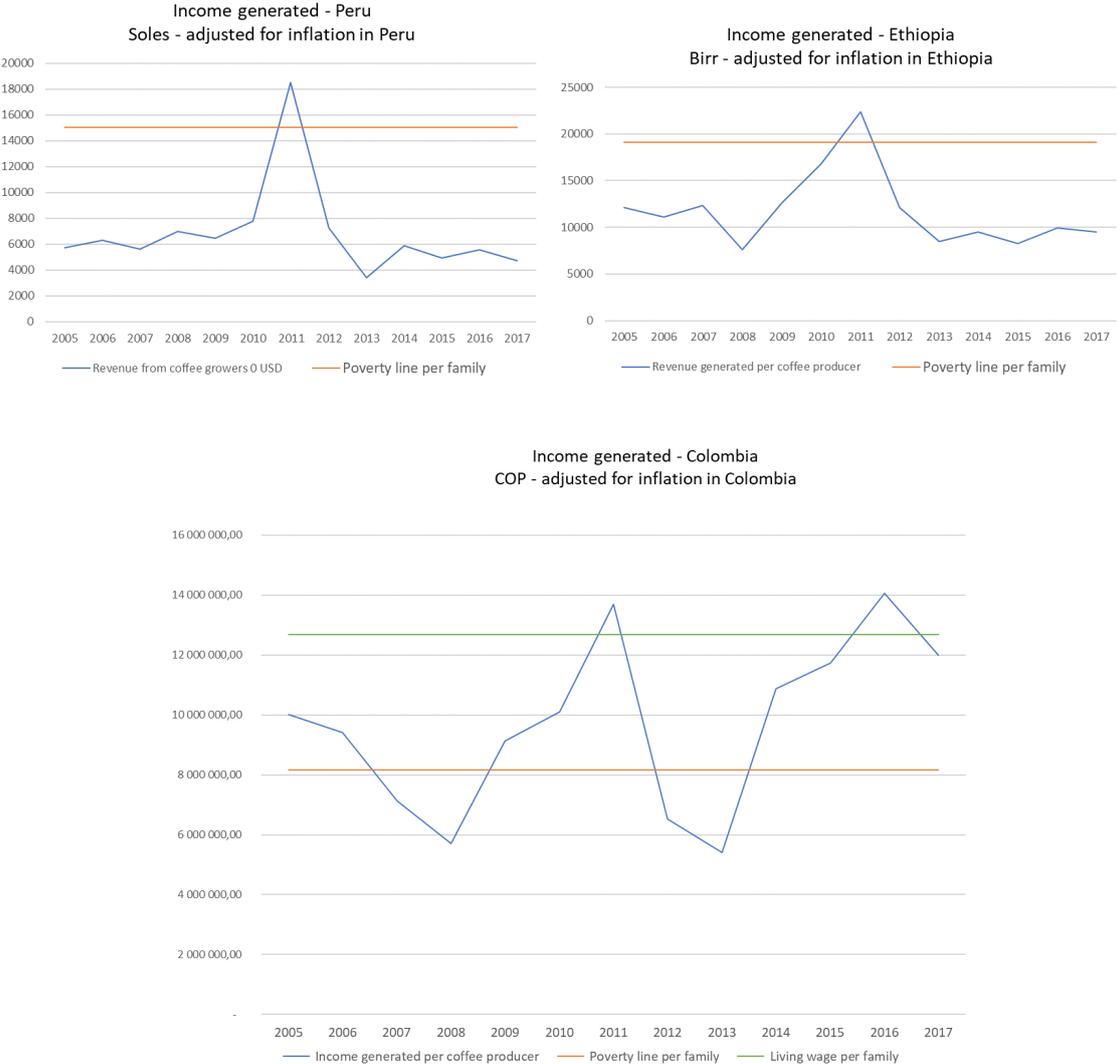


Figure 133. Evolution of Peruvian, Ethiopian and Colombian coffee growers' income in comparison with the poverty threshold. Source: BASIC.

Our estimates thus show that in Peru and Ethiopia, coffee growers have incomes (from coffee cultivation) that fall far below the poverty threshold (except during the one-time spike in global markets in 2011) and had lower incomes in 2017 than in 2005: around 18% less in Peru and 21% less in Ethiopia (corrected for inflation).

In Colombia, although coffee growers are generally able to rise above the poverty threshold, they have only rarely been able to have a decent standard of living, in 2011 and in 2016.

In all of these countries, the status of seasonal workers during the harvest period is even more precarious than that of producers.

In many regions, coffee growing continues to lose its allure and younger generations are turning away from it. Uncertainties related to climate change (rust epidemics, changes in season, extreme events, etc.) are an exacerbating phenomenon and amplify these negative impacts.

In order to more closely analyse the impacts created by conventional industry, we investigated the positive and negative factors that influence them in each case study (see table below).

	PERU-FRANCE SUPPLY CHAIN		COLOMBIA-FRANCE SUPPLY CHAIN		ETHIOPIA-FRANCE SUPPLY CHAIN	
	LEVEL OF SUSTAINABILITY	POSITIVE (+) AND NEGATIVE (-) FACTORS	LEVEL OF SUSTAINABILITY	POSITIVE (+) AND NEGATIVE (-) FACTORS	LEVEL OF SUSTAINABILITY	POSITIVE (+) AND NEGATIVE (-) FACTORS
WORKFORCE & COMMUNITY	Producers and workers living below the poverty line	<ul style="list-style-type: none"> (-) Isolation and poor organisation of producers (-) Lack of cash flow and access to financing (-) Dependence on exporters with strong bargaining power that jeopardise Producer Organisations (-) Lack of State support and liberalisation of the sector (+) Cooperative movement/structured Producer Organisations that improve producers' bargaining power 	<p>Producer incomes close to livable, but variable & uncertain</p> <p><i>(workers earning less than the living wage)</i></p>	<ul style="list-style-type: none"> (+) Regulation of the sector by the National Federation of Coffee Growers (FNC) with strong State support: national reference price, inspection of exporters, value-adding Geographical Indications for coffee, financing, support for productivity/quality, etc. (+) Producer Organisations boost the bargaining power of producers and consumer confidence (-) Incomes dependent on volumes produced because of the capital-intensive production system & subject to fluctuating exchange rates (-) Rising production costs and dependence on suppliers of inputs (-) Poor autonomy of producers who are dependent on coffee and no longer control their economic model 	Producers and workers living below the poverty line	<ul style="list-style-type: none"> (-) Small proportion of the export price returns to producers (-) Lack of cash flow and access to financing (-) Destabilisation of the traditional agroforestry model with the development of specialist modern plantations (-) Dependence on exporters with strong bargaining power (-) Poor organisation of producers, lack of internal dynamics within Producer Organisations, low level of competition between unions of Producer Organisations (+) Added value for Ethiopian coffee and its terroir on the international market (+) Ethiopian Commodity Exchange (ECX) contributions: quality improvement, support for exporters and favourable mechanisms for unions of Producer Organisations
	Lack of essential services in coffee-growing communities	<ul style="list-style-type: none"> (-) Isolation (-) Lack of State support 	Essential services provided in some coffee-growing communities	(+) FNC export levy is partly reinvested in community projects for coffee-growing communities	Lack of essential services in coffee-growing communities	(-) Lack of State support

ENVIRONMENTAL	Low emissions of water and soil pollutants linked to coffee production	(+) Traditional agroforestry shade-growing model with few inputs (-) Rust crisis and absence of State support forces producers to use more and more inputs (-) Wet processing generates discharge in rivers	High emissions of water and soil pollutants linked to coffee production	(-) FNC strategy to modernise coffee production systems that are increasingly users of fertiliser and pesticides (-) Wet processing generates discharge in rivers	Low emissions of water and soil pollutants linked to coffee production	(+) Traditional agroforestry shade-growing model with few inputs (-) State strategy to replace traditional (semi-)forest systems with modern plantations (-) Wet processing generates discharge in rivers
	Deforestation linked to the creation of new plantations	(-) Arrival of new coffee producers (+) Traditional agroforestry shade-growing model	Disappearance of shade trees on plantations	(-) FNC strategy for streamlining and modernising coffee plantations (+) Strengthening of agroforestry shade-growing models	Disappearance of shade trees on plantations	(-) State strategy to replace traditional (semi-)forest systems with modern plantations (+) Traditional agroforestry shade-growing model
	Major greenhouse gas emissions downstream	(-) Manufacture of aluminium or plastic capsules (+) Traditional agroforestry shade-growing model	Major greenhouse gas emissions throughout the supply chain	(-) FNC strategy to modernise coffee production systems that increasingly use inputs (-) Manufacture of aluminium or plastic capsules (+) Strengthening of agroforestry shade-growing models	Major greenhouse gas emissions downstream	(-) Manufacture of aluminium or plastic capsules (+) Traditional agroforestry shade-growing model

Figure 134. Table summarising the factors that influence socio-environmental impacts in conventional Peru-France, Colombia-France and Ethiopia-France value chains. Source: BASIC.

Beyond the characteristic elements of coffee value chains that have already been covered (small share of value received by coffee growers and highly volatile markets), our analysis shows the existence of three other common factors at the heart of social vulnerability and environmental degradation in the study countries:

- *Isolation of producers and the power asymmetry between them and exporters and traders*

Most coffee growers are characterised by their relative isolation (especially in Peru and Ethiopia) and their lack of negotiating power with regard to the traders and intermediaries on whom they are dependent. The latter have also succeeded in increasing their value share over the past decade, at the producers' detriment (including in Peru and Ethiopia).

The issues of isolation and weak collective organisation are also at the heart of seasonal harvest workers' vulnerability.

- *Producers' lack of cash flow*

Lack of access to funding is one of the main factors that contributes to the persistent vulnerability of most producers. Lacking sufficient means to maintain their lands and sometimes even to harvest all of their coffee, and compelled to take on debts (often from their buyers) to meet basic needs, many of them feel "trapped by poverty".

- *Incentive to use more chemical inputs to deal with an increase in coffee plant diseases*

A third key factor at the root of significant environmental pollution is the use of chemical inputs to fight the surge of coffee tree diseases related to climate change. Although their use remains (very) limited in Peru and in Ethiopia, where inputs are too expensive for producers, they are on the rise in Colombia because of incentive policies created by public institutions.

This situation is exacerbated by the impacts of global warming, up until now and through to 2050.

Climate change is already affecting coffee production. Among the examples that have had significant effects on the coffee industry are the appearance of coffee rust in Colombia in 2011/2012, then the next year in Central America (which affected nearly 600,000 hectares, or almost 55% of the total coffee growing area) and extreme drought in Brazil in 2014⁵⁴⁹.

Producers who depend on their small coffee plantations to survive, and who have little or no additional sources of income, are the most vulnerable.

Available prospective studies show that this situation could worsen between now and 2050, in particular in the coffee industry, because of:

- Less land and lower yields
- An increase in pests, diseases and extreme weather events
- Declining coffee quality
- Increasingly volatile prices with higher and higher peaks

At the same time, some key factors seem to allow us to partially curb the negative impacts documented at the coffee production level:

- *Existence of an agro-forestry model that uses few inputs*

Ethiopia and Peru are countries where coffee growing relies on a mainly agro-forestry system which has significantly lower environmental impacts in terms of water pollution, greenhouse gas emissions and

⁵⁴⁹ Hivos, Coffee Barometer, 2014

loss of biodiversity. By contrast, Colombia, which chose a capital-intensive production system focused on high yields, generates higher pollution.

- *Regulatory method of the industry and the capacity for coffee valorisation on the market*

Colombia, which has the most comprehensive regulatory system – combining price intervention, increasing value through markers of quality, reinvestment of taxes collected on the export and the control of exporters – is also the country whose producers' incomes come the closest to a decent level. In comparison, Peru, which has completely liberalised its sector, is the country with the highest level of poverty among its coffee growers. Ethiopia is between the two, with liberally-inspired regulations that have not created the same progress as in Colombia.

- *Degree of organisation and empowerment of producers*

The strongest income improvements are in Colombia, where they come in large part from the strong structuring of producers over several decades; however, this seems counterbalanced by their lack of individual autonomy (dependent on a system controlled nationally by the FNC). Likewise, in Ethiopia, the cooperative unions' weak internal dynamics (due to the limited participation of their members and the low involvement of management teams in the improvement of their situation) is a major obstacle to income improvement.

However, none of the countries studied, no matter their size or strategy, seems to have found the means to ensure the resilience of the coffee growing sector; they are caught up in the dynamics of the liberal global market from which they cannot escape.

The negative impacts from this are sizeable, as our estimates of the cost to society ('societal costs') show in social and environmental terms.

Causes	Consequences	Estimate of associated societal costs		
		Ethiopia	Colombia	Peru
Underpayment of producers that does not cover the minimum cost of a healthy, sufficient diet, shelter, education for children, healthcare, clothing and transportation	Need for other sources of finances to receive a living wage	\$477 million	\$471 million	\$414 million
Fiscal resources levied on industry stakeholders are insufficient with regard to the need for public services (education, healthcare, social services, water/electricity, transportation, environmental protection, etc.)	Deficit in the State budget for basic public services in coffee-growing regions	\$203 million	\$236 million	\$189 million
GHG emissions throughout the coffee lifecycle	Climate change, costs to society	\$56 million	\$259 million	\$73 million
Pollution from chemical inputs (fertilisers, pesticides)	Water decontamination costs covered by society		\$162 million	
TOTAL SOCIETAL COST		\$736 million	\$1,128 million	\$676 million
For comparison, the percentage of societal costs in relation to the total tax amount (excluding VAT) collected in each country		70%	8.5%	6%

Figure 135. Comparison of societal costs and the value of coffee exports in 2017 in the Peru-France, Colombia-France and Ethiopia-France sectors. Source: BASIC.

The large majority of societal costs are tied to social issues: coffee producers' inability to earn enough to meet their families' basic needs and the lack of State resources to finance basic public services in coffee-growing regions. These two factors represent 63% of the societal costs in Colombia, 89% in Peru and 92% in Ethiopia. The total amount – which fluctuates between \$600 and \$700 million per year in each of the countries studied – shows the extent of the instability that affects coffee-growing communities and the burden placed on public

authorities. The similar orders of magnitude among the case studies demonstrate that, beyond differences in context, the systemic nature of the social issues is deeply tied to the operation of coffee value chains.

In terms of the environment, there are more marked differences between the case studies. Colombia is the country where coffee growing creates the most greenhouse gas emissions (per kg of coffee produced) as well as significant nitrate water pollution. This results in large societal costs that are explained by the production model chosen by the country - a model based on a significant use of synthetic fertilisers and pesticides. In comparison, environmental costs are much lower in Peru and Ethiopia which are (still) characterised by mostly agro-forestry systems with low use of chemical inputs, the costs of which are too high for most producers.

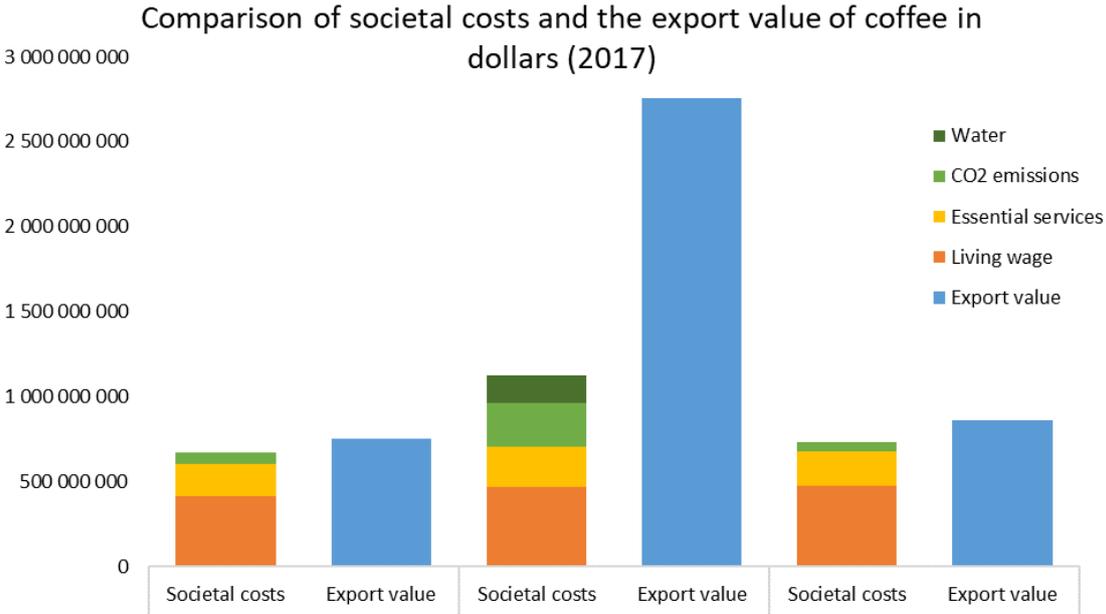


Figure 136. Comparison of societal costs and the value of coffee exports in 2017 in the Peru-France, Colombia-France and Ethiopia-France sectors. Source: BASIC.

The comparisons of these estimates to the coffee export value in each of these countries shows that in 2017 societal costs represented 90% of the value created by the coffee industry in Peru and 86% in Ethiopia, which raises strong questions regarding its sustainability and permanence. (Regarding Colombia, although the total amount of societal costs is higher than the other two countries, it only represents around 41% of coffee's export value because of the country's successful marketing strategy).

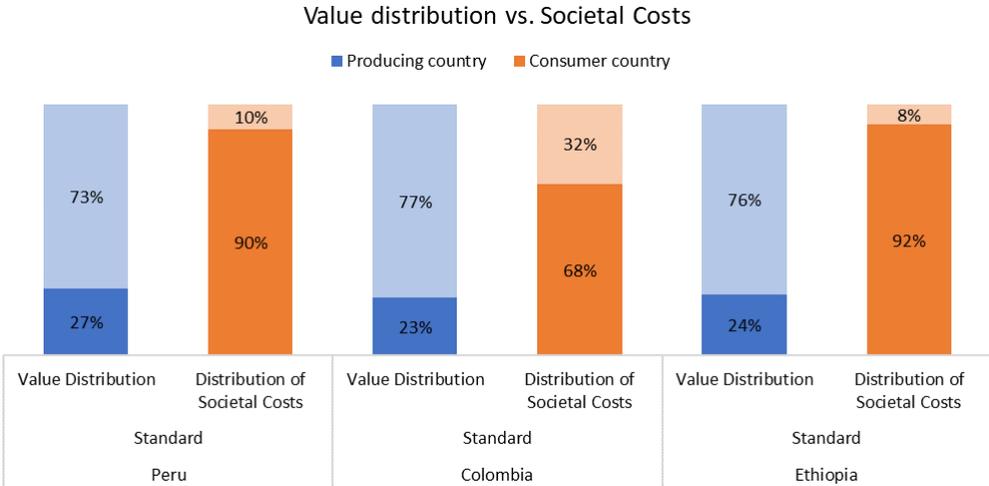


Figure 137. Comparison of the distribution of societal costs and the value between producing country and consumer country in the Peru-France, Colombia-France and Ethiopia-France sectors. Source: BASIC.

Comparison of the distribution of these societal costs between producing and consumer countries to the value distribution between them shows that even though producing countries only earn 23% to 27% of the final product value, they bear 68% to 92% of the societal costs. Our estimates thus show that producer countries only receive a minority value share and suffer the industry's main social and environmental impacts, which are linked (variation between countries is also linked to the aforementioned factors).

In this context, we investigated how much the alternative sectors related to fair trade – whether associated with organic agriculture or not – and UTZ and Rainforest certifications were able to respond to these issues and create greater resilience in the coffee industry.

'Sustainable' certifications like Rainforest and UTZ – now merged lack independent studies, which make it difficult to objectively analyse their impact. Their vision of economic sustainability for producers is centred on an increase in yields in order to improve profitability and income, the idea being that there is no need to regulate the market to solve social and environmental problems in the industry once downstream businesses have developed criteria on the issue, which is far from being supported by the study.

In the three producing countries studied, the Rainforest and UTZ initiatives seem essentially accessible to producers who have the means and sufficient support to benefit from the system, and are characterised by their focus on increased yields that allow producers to improve their income and cover compliance costs.

In comparison, there are more studies and publications on fair trade that allow us to evaluate the effects. The three case studies have similar results in showing that this system has allowed coffee producers to improve their situations:

- By requiring the fair trade sector to deal with collective organisations of producers, this has allowed producers them to break from their isolation and strengthen their negotiation power. The success of these organisations is linked to the development of self-sufficient strategies that have been collectively decided, which have enabled their members' coffees to be marketed to consumers (particularly in Peru and Colombia).
- By proposing a safety net (a minimum price) in a context of price volatility and regular drops below production costs, as well as a collective premium and pre-financing opportunities that meet the cash flow needs of producers and their organisations.
- By associating with organic agriculture, in an effort to preserve agro-forestry models without synthetic fertilisers and pesticides (notably via the organic premium that allows for compensation for yield losses and the achievement of sufficient profitability).

In order to evaluate the ability of different alternatives to reduce socio-environmental impacts, we have estimated the societal costs they engender in comparison to conventional sectors (per dollar of coffee exported in order to account for their different sizes and the value differences created in the exporting country).

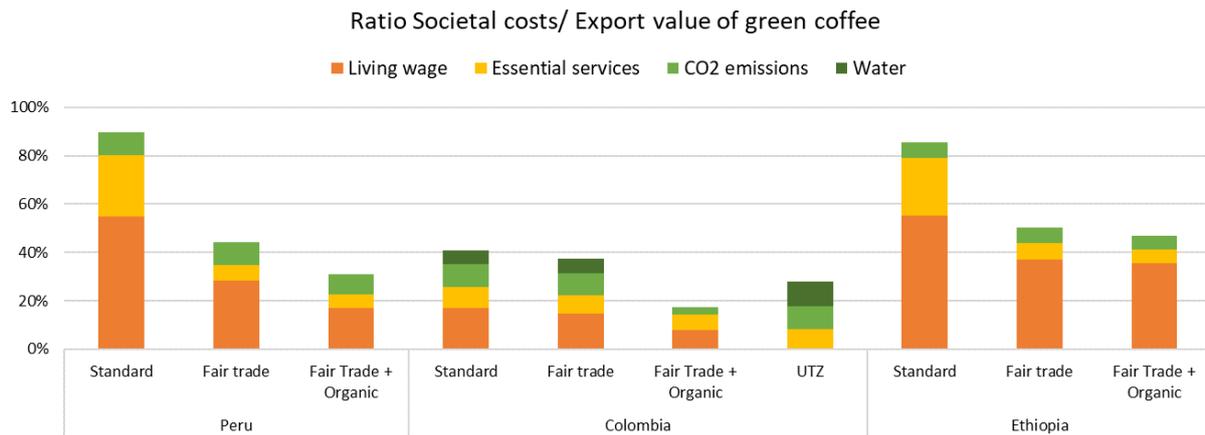


Figure 138. Comparison of societal costs in Peru-France sectors by dollar value of exported coffee. Source: BASIC.

In the three case studies, the double certification of Fairtrade and organic generates the greatest decrease of societal costs.

The lowest cost level is in Colombia, where these two initiatives combine with the Colombian regulation system and the development of an agro-forestry model in the Northern and Southern regions of the country. A significant decrease in societal costs is also seen in Peru, where cooperatives took up the fair trade and organic initiatives in order to develop strategies that would benefit producers and the traditional agro-forestry model. This is in a context of liberalisation and an absence of government support, which explains why the societal costs remain higher than in Colombia, even with the double Fairtrade and organic certification.

Lastly, in Ethiopia, the effects of these two certifications appear weaker than in the aforementioned cases, in large part due to a lack of participation by producers in cooperatives and unions, an issue which goes beyond the framework of fair trade, but for which the latter has not yet found a solution.

Regarding the Rainforest and UTZ initiatives (which have now merged), available impact studies have only allowed us to make estimates for Colombia, where the effects of UTZ certification appear weaker than the double Fairtrade and organic label due to a higher use of chemical fertilisers.

PERU-FRANCE FAIRTRADE & ORGANIC SUPPLY CHAIN		COLOMBIA-FRANCE FAIRTRADE & ORGANIC SUPPLY CHAIN		ETHIOPIA-FRANCE FAIRTRADE & ORGANIC SUPPLY CHAIN	
LEVEL OF SUSTAINABILITY	POSITIVE (+) AND NEGATIVE (-) FACTORS	LEVEL OF SUSTAINABILITY	POSITIVE (+) AND NEGATIVE (-) FACTORS	LEVEL OF SUSTAINABILITY	POSITIVE (+) AND NEGATIVE (-) FACTORS
<p>Producer incomes close to livable</p> <p><i>(no information on workers)</i></p>	<p>(+) Coffee quality potential and growing demand for certified, organic, quality, traceable coffee</p> <p>(+) Guaranteed minimum price which helps safeguard profitability for Producer Organisations during periods of low exchange rates</p> <p>(+) Investment of the fairtrade premium in quality to add value to coffee and increase incomes</p> <p>(+) Organic premium helps producers to increase their incomes</p> <p>(+) Direct relations with committed buyers allow Producer Organisations to secure markets and become autonomous</p> <p>(-) Unfair competition with big exporters whose practices jeopardise producer organisations</p> <p>(-) No documented impact on seasonal workers</p>	<p>Producer incomes close to livable</p> <p><i>(no information on workers)</i></p>	<p>(+) Growing demand for certified, organic, quality, traceable coffee</p> <p>(+) Organic premium helps producers to increase their incomes</p> <p>(+) Direct relations with committed speciality coffee buyers allow Producer Organisations (associations) to become autonomous</p> <p>(+) Guaranteed minimum price helps Producer Organisations to safeguard their profitability and cash flow during periods of low exchange rates</p> <p>(-) Low autonomy of producers in FNC modernisation programmes</p> <p>(-) No documented impact on seasonal workers</p>	<p>Slight improvement in producer incomes</p> <p><i>(no information on workers)</i></p>	<p>(+) Growing demand for certified, organic, quality, traceable coffee</p> <p>(+) Fairtrade premium and organic premium partly redistributed to producers</p> <p>(-) No improvement in the internal governance of Producer Organisations or in involvement with grassroots member organisations</p> <p>(-) No documented impact on seasonal workers</p>
<p>Improvement of essential services in coffee-growing communities</p>	<p>(+) Investment of the fairtrade premium in community projects for coffee-growing communities</p>	<p>Sufficient financial resources to provide essential services in coffee-growing communities</p>	<p>(+) Investment of the fairtrade premium in community projects for coffee-growing communities</p>	<p>Improvement of essential services in coffee-growing communities</p>	<p>(+) Investment of the fairtrade premium in community projects for coffee-growing communities</p> <p>(-) Substantial part of the premium used to cover the internal costs of cooperatives and of their unions</p>
<p>Low emissions of water and soil pollutants linked to coffee production</p>	<p>(+) Organic certification and organic premium incentive</p>	<p>Low emissions of water and soil pollutants linked to organic</p>	<p>(+) Strengthening of agroforestry shade-growing models with few inputs, associated with organic certification</p>	<p>Low emissions of water and soil pollutants linked to coffee production</p>	<p>(+) Organic certification and organic premium incentive</p>

		coffee production			
Retention of shade trees on plantations	(+) Strengthening of agroforestry shade-growing models, associated with organic certification	Retention of shade trees on plantations	(+) Strengthening of agroforestry shade-growing models, associated with organic certification	No information on the disappearance of shade trees on plantations	<i>No documented impact</i>
Greenhouse gas emissions, particularly downstream	(+) Strengthening of agroforestry shade-growing models, associated with organic certification <i>No documented impact on downstream emissions</i>	Greenhouse gas emissions, particularly downstream (organic sectors)	(+) Strengthening of agroforestry shade-growing models, associated with organic certification <i>No documented impact on downstream emissions</i>	Greenhouse gas emissions, particularly downstream	<i>No documented impact</i>

Figure 139. Summary table of factors influencing socio-environmental impacts of the fair-trade and organic Peru-France, Colombia-France and Ethiopia-France value chains. Source: BASIC.

The most thorough analysis of the factors influencing the reduction of negative impacts – notably in the case of fair trade (Fairtrade) coupled with organic farming, which is correlated with the lowest societal costs – shows that the improvements are related to the ability of producers' organisations to:

- become more autonomous,
- strengthen members' participation in their internal governance,
- provide the members sufficient access to financing (for their harvests, etc.)
- invest the fair-trade premium in essential public services, improving the quality of the coffee produced by their members, and strengthening their agroforestry model
- enable their members to acquire organic certification and use the organic premium to enhance their income
- gain access to the most lucrative markets and structure the sectors on the basis of those that are most directly connected with committed buyers who value the quality and origin of its members' coffee.

Moreover, a strategy to consolidate and promote an organic agroforestry model, which is already being used by double-certified producer organizations - particularly in Peru and Colombia - appears to be one of the main paths to a solution. This would not only address the persistent blight epidemic but would also serve as a model of resilience and sustainability in the coffee industry, which faces increasing uncertainty due to climate change.

Aside from these cross-functional factors, disparities observed among the results in the three case studies can be explained as much by the differences in context as by the fact that only some of the above factors exist in the countries concerned.

Furthermore, a number of limitations were noted in the various case studies (e.g., related to unfair competitive practices among some of the large exporters in Peru or minimal participation by the producers in the Ethiopian co-ops) and are the subject of specific recommendations (see the following section).

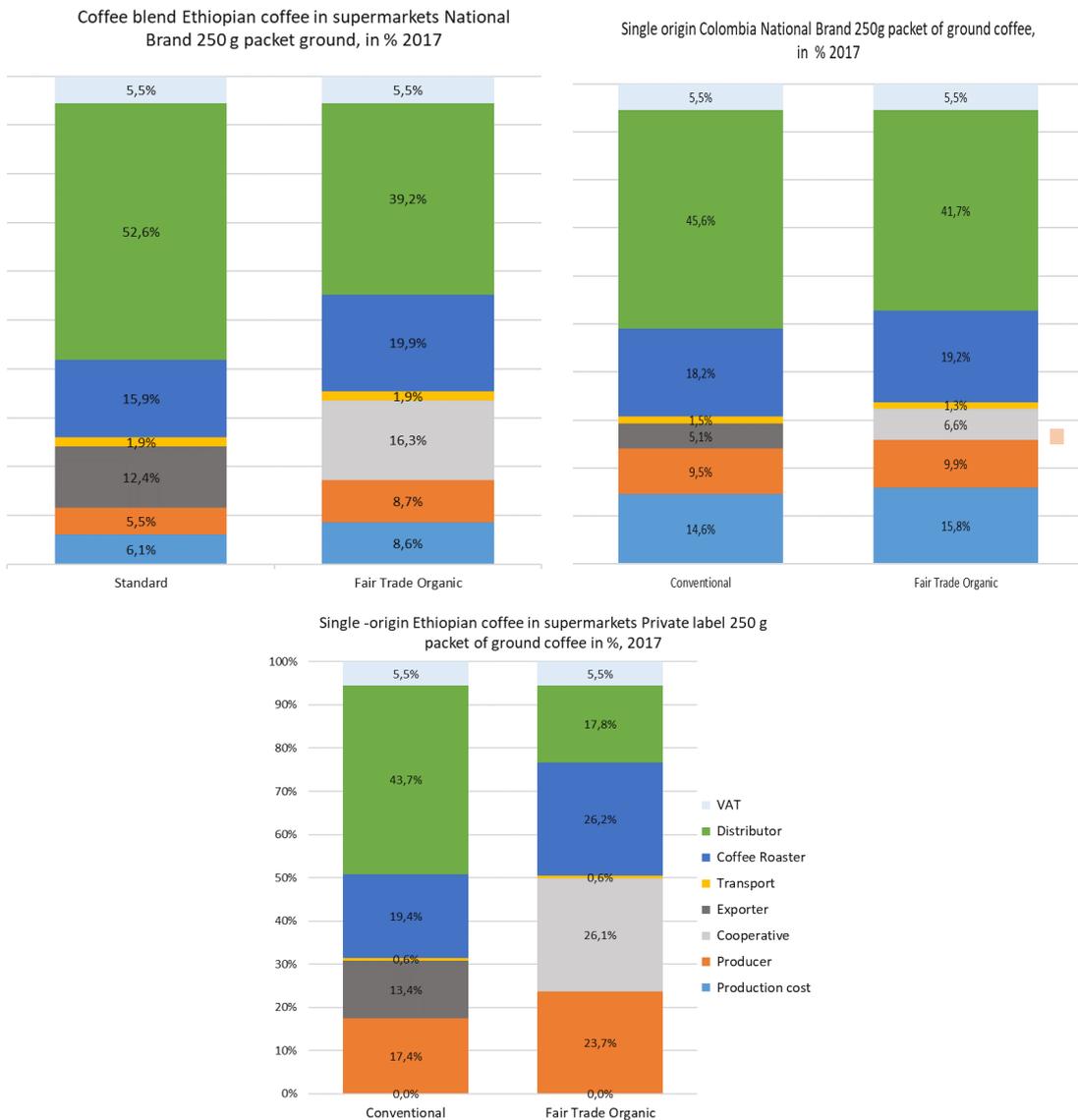


Figure 140. Comparison of the division of income earned from 250 g bags of full price ground coffee between conventional sectors and fair-trade sectors in each of the three case studies. Source: BASIC.

A study of the value chains, up to final consumption of the products, shows that the revenue made by the coffee roasters and distributors is highest in conventional sectors, whereas the producer countries earn the lowest share of the value and the societal costs are the greatest.

Conversely, it is in the fair-trade and organic sectors that the societal costs are the lowest and the share of profit for the producer countries is the highest, in comparison with that of the downstream players (see above estimates for 250 g bags of ground coffee).

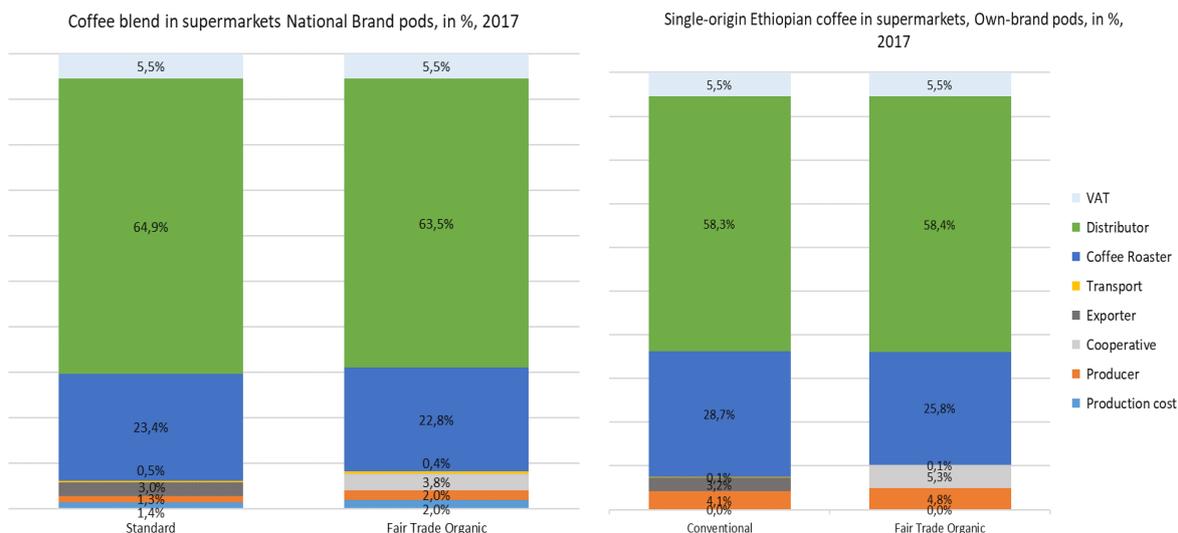


Figure 141. Comparison of the breakdown of revenue from capsules between conventional and fair-trade sectors for two case studies. Source: BASIC.

When each format is studied separately in detail, however, our estimates show that this effect is largely minimized by the format effect: while producers are receiving a higher share for ground coffee sold in 250 g packets, these differences are much less significant for single-serving coffee, particularly for the capsules where the downstream stakeholders (coffee roasters and distributors) are collecting between 85% and 90% of the value, even for fair-trade products.

These results confirm the fact that the key issue is redistribution of profits generated downstream in the coffee value chain, especially in France, where profits have never been so high at a time when the producers have never needed it so much (both in order to make a decent living from their work and to adapt to the growing impact of climate change).

To address this issue, and to ensure the resilience of the coffee industry, it seems essential to establish a link between the existing fair trade and organic certification procedures (the sector approach) and public regulations in the producing and consuming countries (the territorial approach).

4. Recommendations and levers of change

As sketched out above, the main issue is to ensure the sustainability of the coffee value chain, from producers to consumers, on an international scale as well as at the level of the various countries and their specific contexts.

To accomplish this, we propose utilizing simultaneously a number of levers, which are laid out below (according to category of the stakeholders for whom they are intended).

In the consumer countries: create a motivating framework that is conducive to the alternatives whose impact has been demonstrated

1. Raise awareness of the inequities regarding value distribution in the coffee industry

→ *Observation: Inequality in value distribution in the coffee industry has grown for more than 20 years, particularly in France. The rising values generated by coffee roasters and distributors through new formats (pods and capsules) and marketing tools is not being shared with producers, even as they need it more than ever to escape endemic poverty and deal with the effects of climate change.*

→ *Proposal: When the International Coffee Organization launches its campaign in October 2018 to educate consumers about the crisis, which is having a major impact on producers, it seems imperative that the general public should be told how much value is being generated downstream in the industry, so as to encourage public debate about the issue of value-sharing in the coffee sector.*

2. Commit to transparency for consumers (origins, etc.)

→ *Observation: Conventional coffee sectors (differentiated coffees aside) are characterized by their lack of transparency, both in terms of the country of origin of the coffee contained in the products sold to consumers, as well as the price paid to producers - and the wages paid to workers - with respect to revenue levels and living wages.*

→ *Proposal: To support the businesses which already have strong transparency among consumers (like certain fair-trade labels), advocacy efforts should be undertaken, possibly in collaboration with consumer associations like CLVC or UFC Que Choisir. The goal would be to press upon the French authorities the need for regulations that would require transparency on labels regarding the country of origin of the coffee contained in products.*

3. Implement due diligence among sector stakeholders (particularly regarding payment of revenues and decent wages)

→ *Observation: Voluntary initiatives undertaken by businesses rarely result in new ground rules across an entire industry due to price competition among stakeholders (particularly on the part of the lowest bidders). The recent due-diligence law adopted in France goes even further and opposes the legal obligation of businesses to chart the socio-environmental risks in their entire sphere of influence or to implement any means necessary to protect themselves against doing so.*

→ *Proposal: In this regard, it would be a matter of the civil service stakeholders involved in the monitoring of the due-diligence law to shine a light on the following issues: underpayment of producers and workers in the coffee supply chain, and developing mechanisms which measure the commitments of the businessmen, coffee roasters and distributors based in France to make sure they are up to the challenge (especially as regards payment of decent wages upstream).*

4. Create a polluter-payer tax on the packaging of pods, depending on their composition and impact

→ *Observation: In the French market, pods and capsules account for more than half of domestic coffee sales. The volume of waste matter each year amounts to approximately 1,900 tons of aluminium and 3,400 tons of plastics, most of which is not recycled.*

→ *Proposal: In this regard, it would be a matter of lobbying the public authorities, potentially in collaboration with consumer protection associations like CLCV or UFC Que Choisir, to request the imposition of a polluter's tax, specifically on the packaging of pods and non-biodegradable capsules (similar to the current eco-tax on electronic waste) in order to generate the revenue necessary for collection and treatment of waste and to make the alternatives to these types of packaging more competitive.*

5. Adjust the VAT rate on coffee, depending on the socio-environmental effects

→ *Observation: An initiative launched by Ademe, in collaboration with the 2019 foundation, is currently studying the feasibility of mechanisms that can be used to adjust the VAT rate based on an evaluation of their positive and negative impacts.*

→ *Proposal: In view of the high price competition among supermarkets, any change in VAT would likely be passed on to consumers. It would be a matter of approaching the coordinators of the initiative started by Ademe to see if they would consider initiating a specific study on the coffee industry, based on the results of the present study.*

For the sector stakeholders: make a commitment to guarantee transparency throughout their sectors

1. Commit to paying prices that will guarantee decent incomes and wages (multi-party agreements/contracts regarding the coffee supply)

→ *Observation: The current situation of poverty among producers and workers (preceding point) is a direct result of the very low price at which the producers sell their coffee. At the other end of the chain, average prices per kilo paid by consumers continue to rise with the increase in popularity of new coffee formats. To resolve this issue, agreements are necessary to ensure that the creation of downstream added value can guaranty fair upstream revenues to producers.*

→ *Proposal: As with the tripartite accords implemented by supermarkets in the last two years for the fair and responsible milk industry in France (and to a lesser extent for the World Banana Forum), it would be a matter of persuading the major industry players (coffee roasters and distributors selling private label brands) to develop similar agreements in the coffee sector to guarantee decent prices for the producers.*

2. Develop pre-financing tools which can be adapted to the needs of the producers and their organizations, according to their degree of autonomy and vertical integration

→ *Observation: Lack of funds has a negative impact on producers and confines them to a state of poverty. The only loans they are able to get often come from coffee buyers, who use the loans to exert undue pressure on producers during negotiations.*

→ *Proposal: The aim would be to persuade certain major players in the coffee industry (coffee roasters and distributors selling private label brands) to develop pre-finance commitments that would benefit coffee growers upstream of their supply chain, possibly drawing inspiration from Agrofine's similar efforts in the late 2000s.*

3. Ensure transparency regarding the origin of mass/standardized coffees

→ *Observation: Except for differentiated coffees (fair trade, organic, specialty, etc.), it is impossible to know the origin of the coffee in most of the products sold to customers today. It is therefore impossible for consumers who are concerned about the impact of their purchases to know about the issues related to their coffee consumption. For the coffee producing countries, this lack of transparency diminishes their ability to place a value on the specific qualities of their production.*

→ *Proposal: The aim would be to persuade the major industry players (coffee roasters and distributors selling private label brands) to systematize wording on product packaging regarding the origin of the coffee, similar to what is already done for fruits and vegetables.*

4. Ensure transparency regarding the value percentage that goes back to producers.

→ *Observation: The vast majority of producers and labourers in the coffee industry continue to live in extreme poverty, and coffee farming does not allow them to earn a decent living. Beyond the issue of transparency regarding the origin of the coffee (preceding point), consumers currently have no way of knowing if the price they pay for their coffee properly compensates the producers and workers at the other end of the chain.*

→ *Proposal: The aim would be to convince the major industry players (coffee roasters and distributors selling private label brands) to label their product packaging with a description of the how the price is divided among producers, intermediaries, and coffee roasters/brand, similar to the fair trade labels that have already been initiated.*

In the producer countries: support the collective structuring of the producers from the outset, as well as the development of diversified agroforestry models.

1. Expand access to financing for producers and their organizations.

→ *Observation: Lack of funds has a negative impact on producers and confines them to a state of poverty. The only loans they are able to get often come from coffee buyers, who use the loans to exert undue pressure on producers during negotiations.*

→ *Proposal: The aim would be to work with agriculture finance institutions and development banks, such as the AFD, to investigate the possibility of new (pre-)financing mechanisms for producers and their organizations, similar to Agrofine's efforts in the late 2000s.*

2. Support producer and worker organizations, their development and their internal democracy

→ *Observation: The structuring of the producers in coffee growing communities, their active participation within their organizations, and the organizations' autonomy are key factors for increasing revenue for coffee growers' families and mitigate the social impact created by the coffee industry.*

→ *Proposition: To address this issue, the aim would be to develop programs in certain key countries to support coffee growers' organizations, in partnership with the public authorities and international lenders. Based on the results of this study, it would be a matter of designing programs from the perspective of change/regulation of the value chains into the which the producers are integrated, possibly modelled on the strategies developed by NGOs like Oxfam to support stakeholders in the agricultural sector in countries of the Global South.*

3. Document and disseminate information about alternative organic/agroforestry coffee models.

→ *Observation: Most of the research and development (R&D) funds dedicated to the struggle against blight are today oriented toward implementing strategies based on the use of (chemical) inputs and new variety development. There is (very) little documentation about strategies based on low-capital, diversified agroforestry models. Their implementation/development suffers from limited R&D investments while the stakeholders in the field see them as genuine tools for resiliency.*

→ *Proposal: The proposal is to lobby governments of the countries and their lenders to consider rebalancing the R&D budgets allocated to development of agroforestry and organic models as a response to climate change issues, especially with regard to blight epidemics in Latin America.*

4. Develop specific information and training programs regarding the inequality women in the coffee industry face and carry out necessary reforms to resolve them (e.g., relating to land).

→ *Observation: Women are the most affected by inequality in the industry. While they are responsible for 70% of work to maintain land plots and harvest the coffee, they are generally paid the least, and are very seldom the owners of the land on which they work.*

→ *Proposal: In light of the gender issues in the coffee industry, it seems essential to disseminate information on a large scale within coffee growing communities (among both women and men) regarding the inequality that women face in the industry, their rights and ways to resolve these problems. Furthermore, ambitious programs are more necessary than ever to improve women's access to training and land ownership, as well as having a role in the decision-making process in the coffee industry.*

For institutional stakeholders: better regulate and improve awareness about existing issues

1. Create a permanent monitoring centre responsible for coffee industry sustainability, starting by publishing annual estimates on industry prices and profits.

→ *Observation: Growing inequality of the value distribution in the coffee chains is minimally documented and recorded. In view of the poverty experienced by many coffee farmers and the effects of climate change, both now and in the future, it is imperative to start a dialogue between the various stakeholders in the coffee industry (producers, exporters, importers, coffee roasters, distributors, governments) regarding issues related to the value distribution in order to ensure the industry's sustainability.*

→ *Proposal: Drawing from the experience of the French Monitoring Centre with regard prices and profits in the food sector, a similar monitoring centre could be established for the international coffee industry, with the participation and commitment on the part of the various stakeholders in the loan chain (possibly with the agreement/support of the ICO). Its objective would be to publish figures every year relating to the changes in value distribution among stakeholders in the various countries of production and consumption in order to start a dialogue on the subject within the industry.*

2. Finance new field studies regarding fair incomes/wages in the coffee-growing areas and integrate the results in the monitoring centre

→ *Observation: In addition to the issue of value distribution, the industry stakeholders need to discuss setting remuneration levels that would allow producers and workers in the coffee industry to earn a decent living. Evaluations like these are already being carried out in other sectors by several member organizations of the Global Living Wage Coalition (GLWC) - which includes Fairtrade International - based on the methodology developed by R. Anker and M. Anker, which is used today.*

→ *Proposal: Based on work already carried out by the GLWC, and especially by Fairtrade International, the institutional stakeholders should finance new studies to estimate fair income and wages in the primary countries of production, particularly in Latin America. In addition, the results should be made widely available (possibly with the support of ICO) so that all industry stakeholders can evaluate whether prices paid to producers would enable them (and labourers) to make a decent living.*

3. Fund studies on deforestation in the coffee producing areas and include the results in the monitoring centre

→ *Observation: Imported deforestation is a growing issue for European governments, and France has taken a leading role in this area. Coffee is one of the commodities concerned (together with cocoa, palm oil, soy, etc.). In this context, the issues related to deforestation within the framework of this study show the pertinence of the subject as well as the lack of information on the ground.*

→ *Proposal: Inspired by the experiment carried out on cocoa in West Africa (in particular, that by the NGO Mighty Earth), a proposal has been made to finance studies on the ground that will enable the extent of deforestation to be measured in the main coffee-producing areas (Peru, in*

particular), and to evaluate to what extent the cultivation of coffee is responsible for this, as well as its determinant factors.

4. Create new management tools monitoring price volatility at the international level

→ *Observation: the volatility of global coffee shares has not stopped increasing since the mid-2000s which has had a major negative impact on the producers, and the mechanisms of the futures market seem to be amplifying this situation. An aggravating factor, climate change risks greatly amplifying this volatility in the next 3 decades.*

→ *Proposal: In this context, a study with the interested/involved parties of the coffee sector should be set up to design and shape a new mechanism for regulating prices at international level, if possible under the umbrella of the ICO. If such a mechanism cannot be based on the management of quotas and stocks by governments, as was the case in the era of the ICA, the challenge will be to develop new tools that will put more pressure on private actors in the sector, especially roasters and distributors in addition to traders.*

5. Create shared governance mutual funds to invest in the sustainability of coffee production

→ *Observation: Faced with the scale of social and environmental challenges linked to coffee cultivation in producing countries, which risk becoming more amplified by climate change over the next 3 decades, governmental support would appear to be crucial for the producers and workers in the sector.*

→ *Proposal: In this context, work within the ICO should be undertaken to create mutual funds between governments of producing countries and countries where coffee is consumed, but also with the principle actors in the sector (traders, roasters and distributors) to accompany the producers, especially the most vulnerable, so that they can get organised, have access to adequate finances, improve their yields and develop agroforestry production models.*

For the "sustainable" label and the internal steps to be taken by the roasters

1. Establish minimum prices for producers to allow them to cover their production costs and to earn a decent income (for them and for the workers)

→ *Observation: The way the stock trade market for green coffee works means increasing price volatility for producers and price levels that don't allow producers (in the majority of cases) to make a living from their work or to ensure a decent quality of life for their family. In this context, systematic regulation of prices would appear to be an indispensable tool, as the experience in Colombia has shown.*

→ *Proposal: The stakeholders in "sustainable" certification systems as well as the roasters who have developed their own internal auditing steps should implement a minimum price like that which fair trade has put in place in order to allow producers and workers in the coffee sector to earn a decent living from their work.*

For stakeholders in fair trade: improve tools to increase the positive impact at the level of the producers and to establish greater equity in the sector

2. Regulate the arrival of new producers based on job prospects

→ *Observation: Sustainable volumes sold by Fairtrade certified producer organisations are now limited to 28% of their annual production. In the context of insufficient demand, the arrival of new organisations tends to increase the pressure on supply further.*

→ *Proposal: Similar to the situation in the 2000s, the Fairtrade system stakeholders should look at the feasibility of placing conditions on the first certification of new producer groups based on existing job prospects.*

3. Monitor merchants more closely

→ *Observation: In the Peruvian context, the increased power of private exporters who have obtained Fairtrade certification and have weakened the producer organisations that are also certified may pose significant risks to the Fairtrade system.*

→ *Proposal: Fairtrade system stakeholders will have to set stricter conditions for certification of private exporters – especially when they are branches of multinationals - and to see in what way more precise criteria regarding collective organisation of the producers prior to their first certification might prevent the development of phantom groups in Peru.*

4. Develop systems of redistribution for high value added products

→ *Observation: According to the results of this study, a fairer distribution of value all along the coffee chain correlates with a decrease of the social and environmental impact in producing countries. More fundamentally, the principle of equity, much lauded by the fair trade movement, creates high expectations among consumers in terms of fairer distribution of value among producers and other stakeholders in the chain regarding the fair trade coffees that they buy.*

→ *Proposal: To respond to consumer expectations, and to increase coherence between lauded principles and actual impact, fair trade stakeholders (Fairtrade system, other labels, brands and committed distributors) will have to develop mechanisms (tiered licensing system, for example) to allow the redistribution of a portion of the profits generated from high value added coffee (pods and capsules sales) to producer organisations. Such mechanisms should respond to the promise for legitimate fair trade in commercial relationships and to share the fruits of value creation within the sector.*

5. Reconsider minimum prices while taking income and decent salaries into account

→ *Observation: In Peru, where the minimum guaranteed Fairtrade price has been in place since 2017, the margins made by the certified producers of member organisations per kg of coffee is not sufficient to allow them to reach or cross the poverty threshold. In addition, decent income is becoming an important issue among members of ISEAL, which FTI is a part of, and which participates in a lot of ongoing work in relation to this question (especially concerning the banana and cocoa sectors).*

→ *Proposal: In this context, and similar to work already begun in other sectors (banana, cocoa), Fairtrade system stakeholders (and also other fair trade labels) would have to commence the work of estimating what a decent income for coffee producers in the main coffee exporting countries should be (or participate in such a task in collaboration with other organisations) and begin the process of revising minimum prices in order to integrate these results into it.*

6. Develop criteria and specific incentive funding for agroforestry

→ *Observation: According to the results of this study, agroforestry and organic models for cultivation of coffee are part of 3 major levers that would lead to a fall in socio-environmental impact in the coffee sector and ensure the recovery of production in the long term.*

→ *Proposal: To increase the impact of fair trade, the stakeholders of the sector (Fairtrade system, as well as other fair trade labels) will have to develop mechanisms to aid and incentivise coffee producers to preserve their agroforestry models, by redeveloping them and making their investments profitable, similar to the organic funding that exists now in fair trade.*

Methodology appendix

This report is a meta-study. It consists of consolidating and analysing existing knowledge based on the detailed objectives in the introduction. It doesn't aim to be exhaustive or to provide precise figures, but to try to give an overall view of the coffee sector and at least some estimate of the extent of the impact it has. We are aware of the limits associated with consolidating socio-economic, environmental, sanitary and sociological studies based on approaches that are sometimes very different. We endeavour to cross-reference and make their methods and results as transparent as possible in order to allow the reader to form their own opinion.

The main objective of this study is to analyse the links between:

- the main environmental and social impacts in relation to the existing coffee sector with a focus on the effects on climate change,
- the value chain and its evolution (creation and distribution of economic value, societal costs, balance of power, etc.), especially from a governance perspective,
- the current and future impact of climate change on coffee production, the circumstances for the producers and, more globally, the worldwide market and value chains

On this basis, the current research examines the alternative configurations of value chains in order to best respond in a positive manner to the issues that affect the sector, starting with climate change.

Finally, it concludes by identifying prerequisites and targeted recommendations for a sustainable coffee value chain, particularly addressing the challenge of climate change.

Key research questions pertinent to the study

The objectives outlined above can be recast as different research questions to which the study will attempt to provide verified responses:

- *What are the key environmental, social and economic impacts of the sector?*
- *What are the key production/consumption models that create and distribute economic value in the coffee sector? How have these models evolved over time?*
- *What are the main types of public and private governance in the sector?*
- *How does climate change impact coffee production? What will be the probable evolution by 2050? What effect will they have on the market, the structure of the sector?*
- *How can we estimate societal costs linked to trends in production/consumption?*
- *To what extent do various sustainable initiatives, in particular fair trade, whether or not associated with organic agriculture, respond to coffee sector challenges? To what extent do these initiatives generate a variety of societal costs?*
- *What are the best value chain models to ensure the resilience of coffee faced with climate change?*

Overall Approach

In order to identify the key challenges that influence the coffee sector, the report launches studies pertinent to current environmental, social, and economic impacts of coffee production and consumption through extensive bibliographical research and the collection and processing of available quantified data.

In order to be in a position to rebuild the operation and the development of the coffee sector, the study is based on a socio-economic analysis such as *the global value chain analysis*. This qualitative and quantitative analysis will provide a comparison between the development in structural features of the sector and the development of impacts previously analysed.

It will be combined with bibliographical research and studies on the impact of climate change - current and potential - on the conditions of coffee production and more generally the sector as a whole to investigate ongoing and future transformations in coffee production and consumption. Finally, it will be based on Basic's R&D for evaluation of societal costs to objectify the differences in possible configurations of the sector (conventional, organic, equitable and "sustainable"⁵⁵⁰).

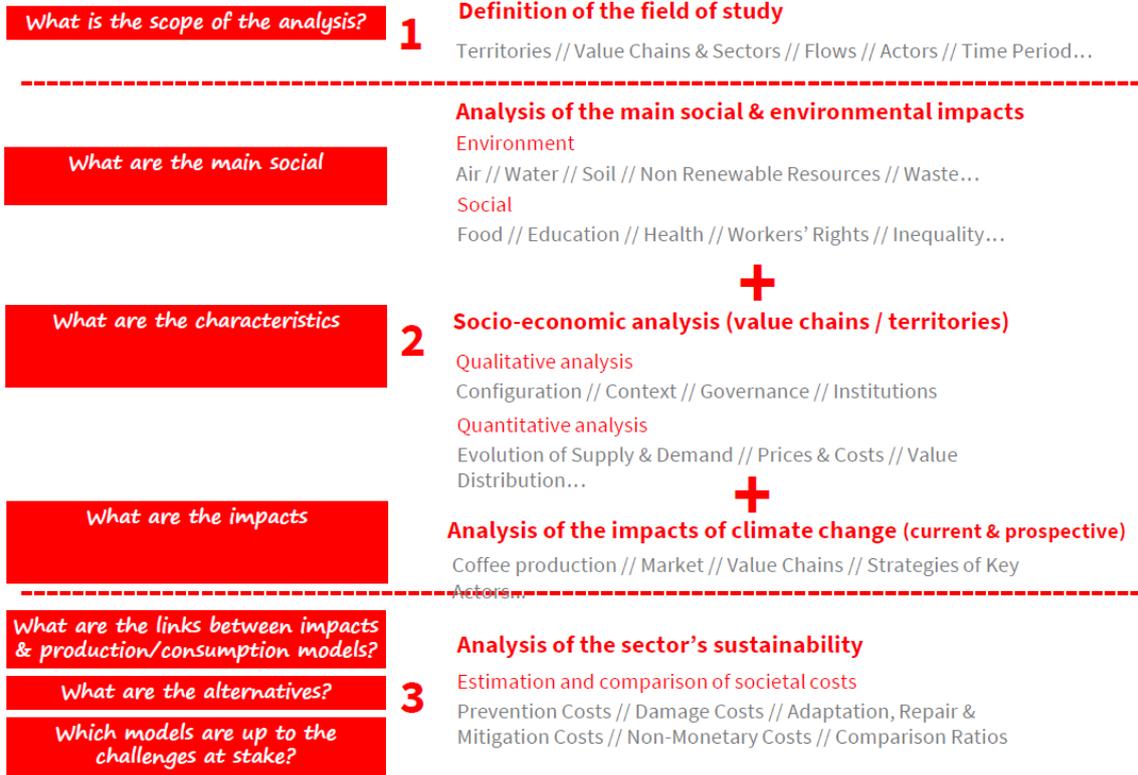


Figure 142. Process of analysis of value chains and their impacts. Source: BASIC

Scope

The study is conducted on value chains, i.e., on all flows and successive interactions that link raw material production to marketing and consumption of finished products.

As for raw materials, the study focuses on the two varieties: Arabica and Robusta. As for the finished products, it has taken into account all the products largely made up of coffee: beans or ground, roasted coffee, instant coffee. Quantitative analysis will cover the average aggregate data on this parameter, with a focus on the main consumption formats (depending on the availability of information): ground coffee in bags – mixed and single origin - and pods.

For the downstream part of the value chain, the study will focus on the French market. For the upstream part, it has first analysed the main producing countries at a global level (Brazil, Vietnam, Colombia, Ethiopia), before investigating in more detail three countries - Peru, Colombia and Ethiopia - to

⁵⁵⁰ With reference to labels which are serving as ethical and sustainable, as the image of Rainforest and UTZ which today are merged

compare the differences in impact between conventional sectors, "sustainable" and fair trade (in association or not with organic agriculture).

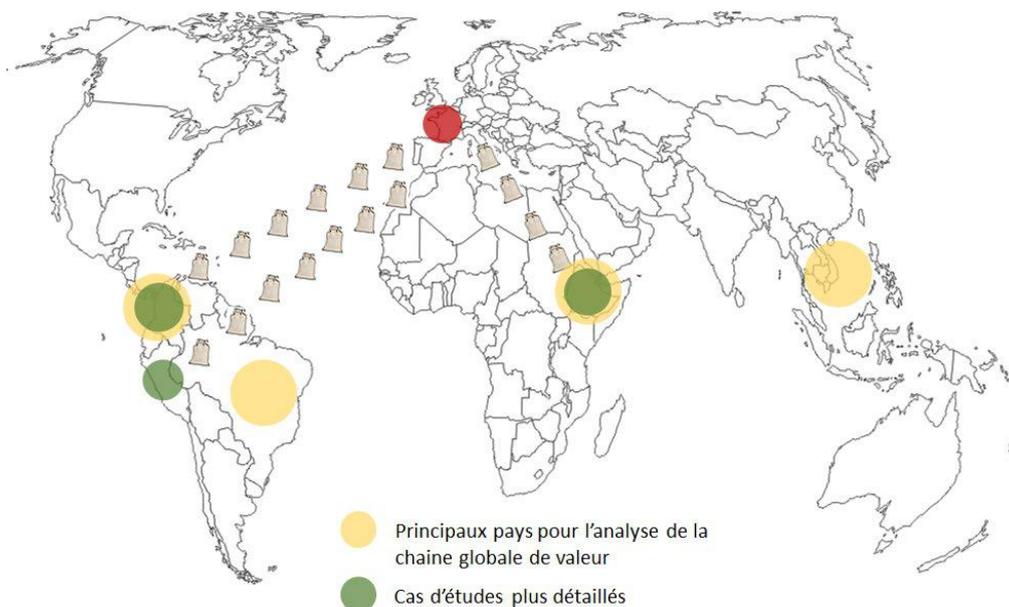


Figure 143. Scope of the study. Source: BASIC

Methodology

To analyse the coffee value chain, its impacts and its societal costs, we collected and analysed more than 600 documents published by academic researchers, national and international institutions, actors from civil society, businesses and journalists (see the main sources in the summary table below).

<i>Document type</i>	Coffee value chain	Impacts (Colombia, Peru, Ethiopia)	Social costs (Colombia, Peru, Ethiopia)
<i>Academic Publications</i>	Duke University (USA), Copenhagen Business School, University of Lund (Sweden), University of Vienna, Colby University (USA), University of Florence, University of La Molina (Peru), University of the Sorbonne	University of Utrecht, University of Humboldt (Germany), University of Michigan, Tulane University (USA), Stanford University (USA), University of Manizales (Colombia), AgroParisTech, CIAT, INCAE, CEVAL	University of Wisconsin (USA), University of Michigan (USA), University of Wechimo (Ethiopia)
<i>Reports from institutions</i>	FAO, UNCTAD, World Bank, ICO, IDS, SCAA, WIPO, Sintercafe, EJBM, FNC, Colombian, Peruvian and Ethiopian Ministries	ICO, USDA, ILO, SECO, IFPRI, SCAA, CRECE, HDI, CIRAD, Kew, Earth Institute, Climate Institute	IMF, World Bank, FAO, ICO, CIMS, INEI, DANE, FNC, EDRI, IFPRI, Colombian, Peruvian and Ethiopian Ministries, ILO
<i>NGO Reports</i>	Oxfam, Hivos, Fairtrade International, Rainforest, UTZ	Oxfam, Hivos, PAN, SOS Hunger, Fairtrade International, Solidaridad, Rainforest, UTZ	Hivos, Hivos, Fairtrade International, Rainforest, UTZ
<i>Business reports and studies</i>	Euromonitor, Xerfi, Syndicat du café, IISD, Bain & Company, Crédit Suisse, Nespresso, Nestlé, JDE, Starbucks	Nespresso, Nestlé, JDE, Oréade Brèche, Technoserve, NRI, CEVAL, KPMG, Quantis	Oréade Brèche, Technoserve, NRI, CEVAL, Quantis
<i>Press articles</i>	LSA, LMDC, Les Echos, La Croix	The Guardian, Libération	El Tiempo, La Republica
<i>Books</i>	Le paradoxe du café [The Coffee Paradox]		

Figure 144. Main sources consolidated in this study of the coffee sector, its impacts and societal costs. Source: BASIC

The first phase of the research deals with consumption, based on:

- Reports published by research institutions, Industry Research (Euromonitor...), the professional press (LSA...),
- Public statistical data (ICO, Eurostat, INSEE...) as well as data compiled by professional organisations (French coffee union...),
- 3 interviews with coffee consumption experts.

The second phase explored socio-economic data from producers all the way up to product distribution, (sales revenues, value distribution, jobs created...) and the structure of the sector (types of stakeholders, organisation models, power reports, regulation by States...).

It also explored the social and environmental impacts generated in the intermediate links (greenhouse gas emissions, water consumption, working conditions...).

To this purpose, the research was based on:

- Reports published by research institutes (Duke University...), French and international institutions (World Bank, ICO, UNCTAD, ILO...), ministries of producing countries, transformation and consumption, Industry Research (Euromonitor, Xerfi...),
- Public statistical data (ICO, CGP, Comtrade, Statistical Institutes and ministries of production and consumption countries...) as well as available data compiled by professional organisations (Coffee union...) and/or some private actors,
- 5 interviews with coffee transformation experts.

The third phase was devoted to a more detailed study of the agricultural production of coffee and its challenges, in particular its vulnerability in the face of climate change, and its evolution (supply trends, production systems, typologies of producers, organisational models...).

It also explored social and environmental impacts in the producing countries (underpayment, living conditions, greenhouse gas emissions, pollution, deforestation...).

To this purpose, the research was based on:

- Reports published by research institutes (University of Michigan, INCAE, IFPRI, Wageningen...), French and international institutions (AFD, World Bank, ICO, FAO, SECO...), the ministries of producing countries...,
- Public statistical data (ICO, CGP, FAO, Statistical Institutes of producing countries...) and data compiled by professional organisations and/or private actors.
- 3 to 4 interviews with coffee production experts in each country studied (10 in total)

The following research phase allowed all data and quantification aspects to be consolidated regarding social, economic and environmental impacts previously documented, and to analyse correlations with organisational models of the value chains.

This analysis concludes with a societal cost evaluation based on:

- Reports that investigate and consolidate expenses incurred by public institutions and individuals in order to reduce, mitigate or compensate for their impacts.
- Public statistical data (Statistical Institutes of producing, processing and consumer countries...) and data compiled by professional organisations and/or private actors.

The fifth phase of the study was devoted to the analysis of the impacts of climate change on coffee production in different regions of the world, to date and by 2050, based on:

- Available studies on the current impact of climate change on coffee production
- Projections and prospective analysis on the impact by 2050 and the potential consequences on market balance and the structure of value chains.

On the basis of the previous results, the next phase investigated to what extent the fair trade system, in conjunction or not with organic agriculture, and the systems referred to as "sustainable" (the now merged Rainforest Alliance and UTZ) had differentiated impacts in relation to standard coffee value chains, both socially and environmentally.

Differences in impact were quantified on the basis of data and available studies; the systems were compared by using societal costs that they generated as an indicator, based on:

- Available studies on impact on equitable, organic and "sustainable" systems,
- Available data compiled by fair trade actors, organic farming and actors in systems considered "sustainable".

The research concluded with a cross-functional analysis that investigated concrete levers of change with experts on governance issues in the coffee sector, and more widely, regulation issues in international trade and the practices of businesses were examined in more detail, particularly at the French and European level (competition law, duty of care, climate conventions, etc.). The resulting recommendations could be activated to achieve more sustainable production and value chains in response to the challenge of climate change, beyond the traditional advocacy field of fair trade actors.

Details and methodological limits on assessing value distribution

Value share should not be confused with benefits or profits: each actor in the chain takes whatever value share they can to cover their internal costs and eventually make a net profit once all expenditure has been covered.

STAKEHOLDER	Content of value share
Distributor (supermarket, shop...)	<ul style="list-style-type: none"> - Profit - Employees' salaries and social contributions - Shop operating costs (rent...) - Storage and logistics costs from buying platforms to shops - Financial costs (loans...) - Payment of taxes
intermediaries (coffee roaster, trader...)	<ul style="list-style-type: none"> - Profit - Logistics and processing costs - Employees' salaries and social contributions - Financial costs (loans, exchange risks...) - Payment of taxes
Producer	<ul style="list-style-type: none"> - Profit (producer incomes) - Social contributions
Worker	<ul style="list-style-type: none"> - Salaries - Social contributions
Cost of agricultural inputs	<ul style="list-style-type: none"> - Seeds and inputs (fertilisers, pesticides) - Water & energy - ...

Figure 145. Overall methods for calculating value distribution. Source: BASIC

As illustrated in the preceding diagram:

- Distributors' value share is the money that is left over after they have paid their suppliers. They use this money to pay their employees, manage their shops, organise logistics via their distribution centres, invest in marketing and communication, pay their taxes and financial costs... and eventually make a net profit.

- The value share for processing parties and traders is the amount that they receive after deducing payment to their own suppliers. They use this money to cover their production costs (energy, packaging, machines...), pay their employees, conduct marketing campaigns, pay their taxes and financial costs, and potentially make a net profit.
- The value share for producers in our estimates is that which is left over (for them and their families) after they've paid their workers and costs of agricultural inputs (fertiliser, pesticides, water, energy...)

The main purpose of this study was to collect detailed and credible information on the distribution of value, from the producers to the distributors. In fact, prices, costs and margins are among the most confidential information within businesses, very difficult to access from the exterior and difficult to cross-check.

To meet this challenge, we decided to:

- Begin by collection, comparing, and analysing statistics available through public and private databases (INSEE, Eurostat, Comtrade, World Bank, Euromonitor, research institutions, government departments...).
- Combine this quantitative data with the qualitative analyses put out by a wide range of publications (in economics, sociology, history...) in order to verify its relevance,
- Compile and add to these analyses via a network of experts on the sectors and countries studied

Also, to estimate the distribution of the value of finished goods, we needed to develop models for specific coffees and the associated value chains:

- To identify these products, we carried out price surveys in late July 2018 in nine supermarkets and superstores from six different chains, half in Paris and the surrounding area, and half in the western provinces of France (Morbihan, Loire Atlantique, Vendée). These surveys allowed us to document the price to consumers of 35 products sold by 22 different brands in three different formats: 250 g packets of ground coffee, soft coffee pods and capsules (compatible with Nespresso, Dolce Gusto, Tassimo...).
- To calculate the value distribution in kilos of green coffee, a conversion factor of 1.19 between roasted coffee and green coffee was used
- The coffee roasters' share was estimated using *at a minimum* the direct processing and logistical costs of coffee obtained from French professionals, and from the value added rates declared in French coffee manufacturers' records (around 20% on average). The distributors' value share is what is still needed for the consumer's stated price. It is therefore potentially overstated as a result of the aforementioned hypotheses and because it is estimated "excluding promotions" (knowing that promotions represent up to 30% of sales for certain brands).

The value chain models only provide estimations/quantitative approximations for the most common actors and operations from agricultural production to consumer purchases in stores. In reality, a large variety of other organizational structures can be found, leading to potential variations in value distribution estimates. Still, the estimates and trends calculated in this study provide a first objective evaluation to allow for discussion among the stakeholders in the value chains.

Regarding the estimation of growers' profits and workers' salaries in different countries, our approach only gives an initial estimate. A refined methodology would be necessary to collect current field data on the cost of living in the sectors and regions in question. Given the study's objectives and the time and resource constraints, we used the most recent studies on this subject in the countries and products studied. They did not allow us to calculate average prices or profits, which exist in a wide variety of different situations (to go further, we would need calculations for median rates at a minimum).

In order to take into account the magnitude of socio-environmental impacts and to evaluate the sustainability of the coffee sector, from agricultural production to the final consumer, we sought to evaluate the associated societal costs.

The societal costs are the reported costs to society linked to the sector's impacts. These can also be referred to as "hidden costs". They can be defined as "all direct and indirect, present and future losses and expenditures that are borne by third parties or the community as a whole due to the social, health, and environmental impacts of production and consumption patterns and which could have been avoided"⁵⁵¹.

For example:

Coffee growers use synthetic fertilizer on their parcels, which introduces nitrates into the soil. Some of the nitrates are washed away by the rain and flow into nearby watercourses and on to the rivers and streams that provide water to cities downstream.

The cities' water becomes unfit for consumption. The community must therefore take on the cost of treating the water to make it drinkable again in its public budget. They raise local taxes to cover these new expenditures.

As a result, citizens are required to take on the cost of water purification while the grower causing the pollution continues to produce coffee without absorbing the cost of treating the water to make it drinkable.

To evaluate the societal costs within the scope of this study, we posit a sustainable sector model as a reference point that would represent a "zero societal costs" situation, in that the economic activities would respect the collectively defined social and environmental norms, in particular:

- The Universal Declaration of Human Rights (in particular articles 1, 23 and 25),
- The Conventions of the International Labour Organization, (in particular Nos. 29, 87, 98, 100, 105, 111, 138 and 182),
- The Standards of the World Health Organization,
- The Declaration of the United Nations Conference on the Human Environment (in particular principles 1, 3 and 5),
- International Conventions (UNPCC, CITES, CTOC...).

This approach has several advantages:

- it is based on a record of the actual losses and expenses – stated, planned or anticipated – and not on a theoretical evaluation of social or environmental values.
- It is by nature cumulative, the different expenses taken on by third parties and the community being added without the possibility of compensation between the different social and environmental dimensions.
- it uses money as a common resource, which allows us to question the existing economic models by linking society's shared expenses with value creation.

To concretely evaluate the societal costs, we recorded the actual expense of prevention, damage, repair, and adaptation on third parties and the community (in particular public authorities) in the sector's different key territories in Colombia, Peru, Ethiopia, and France.

⁵⁵¹ K. W. Kapp, *Social costs of private enterprise*, Les Petits Matins, 2015

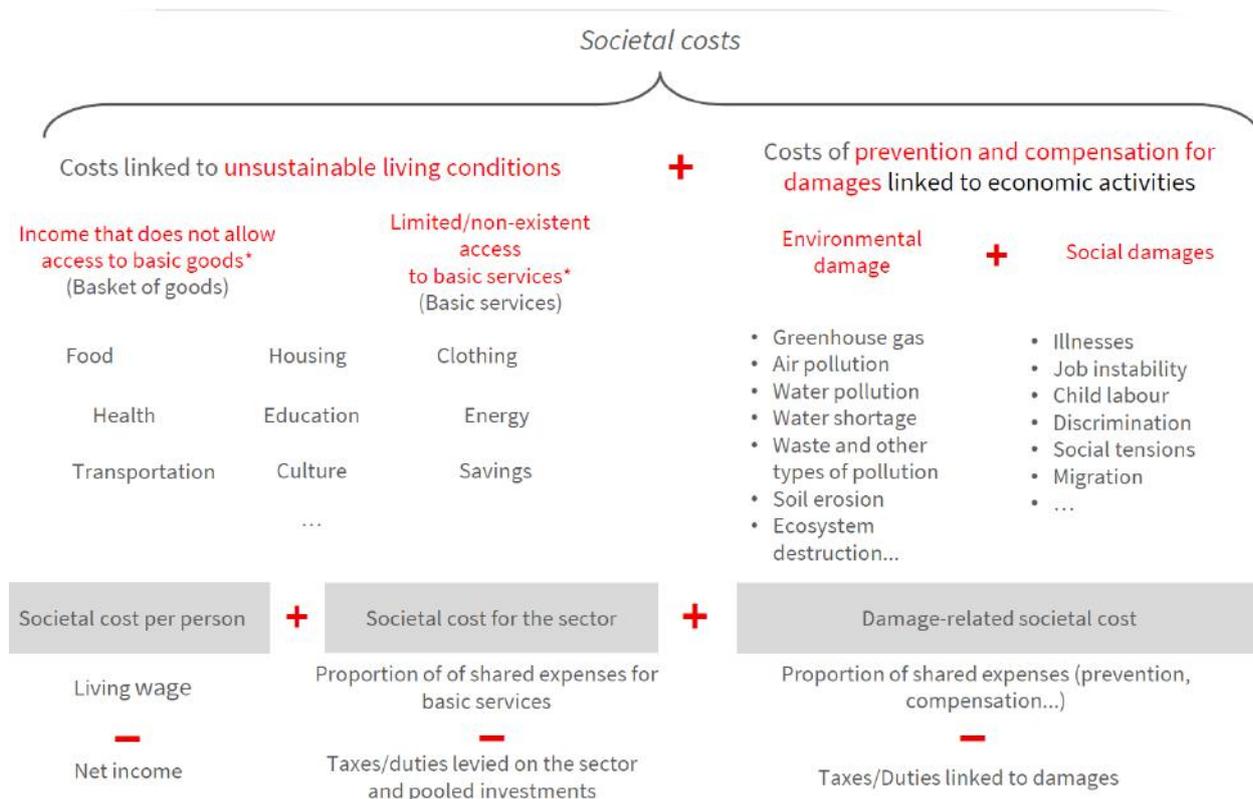


Figure 146. Global diagram of calculations of societal costs. Source: BASIC

- The societal costs recorded this way represent the expenditures put in place each year to (see diagram above):
- Allow growers and workers to meet the essential needs of their families (nutrition, education, health, shelter, savings) and to benefit from sustainable living conditions;
 - Reduce as much as possible the social and environmental impacts created throughout the sector (pollution, climate change, workplace accidents...).

Below are the main calculation methodologies and sources used to estimate societal costs:

<i>Impact</i>	<i>Evaluation Method</i>	<i>Bibliographical sources</i>
<i>Underpayment of growers</i>	Estimation of average annual income earned by coffee growing families and comparison with the income level necessary to meet their basic needs	<ul style="list-style-type: none"> • Average annual income and number of people per family: ICO, FNC & TechnoServe (Colombia), Hivos & Ministry of Agriculture (Peru), EDRI & IFPRI (Ethiopia) • Absolute poverty line by individual, calculated in studies by the national institutes of statistics in Peru (INEI 2015) and Colombia (DANE 2015) and by researchers in Ethiopia (Mekore 2017). Reasonable income in Colombia calculated by CIMS for the World Banana Forum.
<i>Critical services</i>	Estimation of the coffee sector's contributions to public spending required for critical services in coffee growing communities	<ul style="list-style-type: none"> • Public spending required for critical services, estimated from the State's detailed budget and published by the World Bank for Peru (BOOST Peru), from the State's budget and published by the Plan initiative for Colombia, and pro-poor spending consolidated by the FMI for Ethiopia. • Number of coffee growers: ICO, FNC & TechnoServe (Colombia), Hivos & Department of Agriculture (Peru), EDRI & IFPRI (Ethiopia)
<i>Climate change</i>	Estimation of costs incurred on the international level to fight climate change, prorated to the greenhouse gas emissions attributed to the coffee value chain compared to total global emissions.	<ul style="list-style-type: none"> • Average greenhouse gas emissions throughout the book's life cycle (Centre for Sustainable Systems – University of Michigan 2017) • Consolidation of global spending to fight climate change: (CPI 2015; IPS 2016; EC 2016)
<i>Pollution related to inputs</i>	Estimation of costs incurred in Colombia to fight water pollution related to fertilizer	<ul style="list-style-type: none"> • Spending to fight water pollution: USAID, Analisis Sectoral Agua in Colombia, 2016 • Estimation of the portion of water pollution in Colombia generated by coffee growing: Mekonnen et al., Sustainability, Efficiency and Equitability of Water Consumption and Pollution in Latin America and the Caribbean, 2015

Figure 147. Methods and information sources used to calculate societal costs. Source: BASIC

This approach presents a number of limitations to keep in mind: many factors are not quantifiable because of inaction by public authorities, lack of available data, or simply because of their nature. The relative importance of the social and environmental questions arising from putting them in monetary terms remains, therefore, naturally subjective.

The societal costs, if they can be quantified by tallying the expenses taken on by individuals and the community, are also in many cases essentially qualitative losses.

The measurable incurred costs aren't enough to give a precise and complete evaluation of the societal costs, but they do allow for a basic measure of the shared expenses resulting from the social and environmental impacts brought on by these economic activities.