
**LONG-TERM AND RECENT TRENDS IN THE COCOA AND
CHOCOLATE INTERNATIONAL MARKET**

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ABSTRACT

This study describes the long-term trends of cocoa production, in terms of areas, yields and total output. The structure of the international value chain is then described. The international cocoa market looks exactly like an old-style hourglass. On one side there are about 5 million small producers, in developing countries, and on the other side stay billions of final consumers, mostly in high-income countries. In between, very few global players, giant traders and processors, producing semi-finished and finished goods, marketed with several trademarks, accompanied by thousands of small traders, processors, and grocery producers. Eight countries represent 90 percent of the global cocoa output; six processors, in Europe and USA, control 70-75 percent of the processing; 10 brands cover about 70 percent of the final market. The world consumption of chocolate products is growing steadily, and it is now about 130 billion US\$, with Switzerland first (8.8 kg per person per year). Some recent phenomena are then illustrated, concerning the new trends of the consumers' behaviour, linked with health, environmental protection and social awareness. Forecasts underline the growing demand for high-quality products, single variety, geographical indications, organic and fair-trade. Most cross-national firms are beginning to adopt some Corporate Social Responsibility practices. The need for more sustainability of the sector, all along the value chain, was emphasized during the 4th World Cocoa Conference in 2018. More processing should take place in the cocoa-producing countries, to add value and to create employment, while trade barriers imposed by developed countries should be lowered or eliminated

Keywords: Value chains; Organic; Fair-trade; Corporate Social Responsibility.

1.0 INTRODUCTION

Cocoa has always been a much-studied and much-discussed commodity (Dand, 1993). Since it was "discovered" by the Spanish "conquistadores" and the first cups of chocolate were tested in Europe, the beans of *Theobroma cacao* (Lin.) – the "drink of the Gods" – have generated huge richness and deep poverty. The unbalance between the producing countries

and the consuming ones have been object of studies, critics and attempts of modification. The dramatic misery of millions of producers contrasts with the high living standards of many consumers, who spend for one single bar of chocolate what a smallholder rarely gains in one day of hard work.

This paper, based on existing data and literature, both published and grey papers, briefly describes the supply of cocoa beans, the long-term trends in the agricultural sector, the bottleneck represented by the traders and processors and the most recent evolution of the final markets, where new needs are expressed by the consumers.

The international cocoa value chain is to some extent regulated by ICCO (International Cocoa Organization), composed by producing and consuming countries, representing respectively 85 per cent of the cocoa output and over 60 percent of the world cocoa consumption. ICCO was established in 1973 with its headquarters in London, to implement the first Cocoa International Agreement, previously negotiated in Geneva, Switzerland. ICCO has then moved to Abidjan, Ivory Coast. Since 1973, six more agreements have been signed, the last one in June 2010 in Geneva, that has entered into force on October 1st, 2012, during the UNCTAD Conference.

2.0 AREAS AND COCOA PRODUCTION

According to the FAO database, cocoa-growing takes place in 61 countries, but in some of them, it only occupies very small areas, in some cases just a few hectares. The data contained in Table 1 show several interesting trends over a 50-year period.

- First, against all price fluctuations and all technical, economic, social and environmental problems (BASIC, 2016) there is a constant expansion of the areas invested with cocoa, which have grown from 4.5 million hectares in 1969-71 to over 10 million in 2016 (+126%).
- Second, Ivory Coast shows a regular increase and, with a harvested area of about 2.8 million hectares, it has largely overcome Ghana in the pole position. Cocoa production in Ghana, after the dramatic fall due to its internal problems, is recovering, but the cocoa area is nowadays only at the level of 50 years ago (Asamoah & Annan, 2002; Baba Ali, Awuni & Danso-Abbeam, 2018). Together with Nigeria (Akintelu, Mele & Adewumni, 2019) and Cameroun, these four west African countries represent almost 60 percent of the total world area.
- Third, on the other side of the globe, quite impressive has been the expansion in Indonesia, where cocoa has grown from nine hectares in the 1961-73 period to over 1.7 million hectares. Furthermore, Indonesia shows relatively higher yields, up to 700 kg/ha, compared to Africa, and it has developed a well-organized value chain, with processors and chocolate industries, whose produces are largely exported in Asia (Fahmid, Harun, Fahmid & Saadah Busthanui, 2018).

Table 1: Cocoa area, harvested

Country	1969-71	1989-91	2016	Δ	
				2016/1969-71	
	000ha			%	%
Ivory Coast	405	1,451	2,851	28.0	604.0
Indonesia	9	159	1,701	16.7	18,800.0
Ghana	1,693	705	1,684	16.5	-0.5
Nigeria	683	400	838	8.2	22.7
Cameroun	387	377	724	7.1	87.1
Brazil	443	663	720	7.1	62.5
Ecuador	225	329	454	4.5	101.8
Dominican Rep.	72	121	173	1.7	140.3
Peru	4	4	125	1.2	3,025.0
Mexico	76	70	59	0.6	-22.4
Other countries	555	935	868	8.5	56.4
World	4,552	5,214	10,197	100.0	124.0

Source: FAOSTAT

Cocoa is also increasing its presence in several Latin American countries, with Brazil in a leading position. High-quality varieties are normally cultivated in these countries, where cocoa, often under organic management, could also represent an economic alternative to coca production.

A major problem is represented by the low and unstable productivity. Cocoa yield could theoretically reach 3,000– 5,000 kg/ha (ILACO BV, 1981), but in the last 50 years, no significant improvement has been achieved. Harvests above 500 kg/ha are very rare, and only Indonesia and Peru have almost reached, twice, 900 kilograms.

A very recent study (Kozicka, Tacconi, Horna & Gotor, 2018) confirms that also in the next future none of the ten biggest producers could overcome the average yield of 400 kg/ha,

without unlikely heavy and constant private and public investments, for fixed and running costs and training/extension.

The most recent FAO data indicated for the year 2016 a global cocoa output at about 4.5 million tons. The main producers were in West Africa: the four countries with the largest areas (Ivory Coast, Ghana, Nigeria, and Cameroon) have produced 64 per cent of the world output. In Asia, Indonesia alone contributed with 15 percent. In Latin America, cocoa is present almost everywhere: Brazil, Ecuador, Peru, Dominican Republic, Mexico, but with small shares.

Almost 90 percent of the production is realized in small family units, with small plantations, for a total of about 5-6 million smallholders. Taking into consideration that these units rely on family labor, tens of millions of people are involved. In Indonesia alone, it is considered that 1.6 million people are engaged in cocoa production. Countries or regions with fragile economies, often very much dependent on one single cash crop, similarly to what happens with other situations, like coffee, oil palm, rubber tree.

Table 2: Production, grinding and stock (000T)

Year (Oct - Sept)	2016/2017		2017/2018	
	Revised forecasts (a)	Forecasts	Revised forecasts (b)	
World output	4,739	4,587	4,645	
World grinding	4,396	4,531	4,568	
Surplus (or deficit)	296 (343)	+ 10 (56)	31 (77)	
Stock at year end	1,726	1,737 (1,782)	1,757 (1,859)	
Ratio stock/grinding	39.3%	38.3% (39.3%)	38.5% (40.7%)	

Source: ICCO, in brackets values calculated by Authors

ICCO (Table 2) indicates that the world output in the last two years has exceeded largely the consumption, and this has determined the formation of growth stocks, which keep the international prices at a low level. For 2018, the total world output was esteemed at 4.6 million tons, with a surplus of about 100,000 tons. Although there are some contradictions in the data released by ICCO, it is clear that there is plenty of cocoa in the producing countries

and this could increase the stocks to 1.7 – 1.9 million tons, equal to 39-41 percent of the global demand.

3.0 INTERNATIONAL TRADE

Most cocoa beans reach the collection points (private and public ones) after several steps and are then exported, in bags, to industrialized countries, where they are processed into semi-finished goods, to be sold to large chocolate factories or to small and medium firms, sometimes even to very small pastry shops, which finally produce the consumers' goods, with a very variable content of chocolate.

The cocoa beans market, at the farm gate, considered as an unprocessed commodity, is valued at about 2.1 billion US dollars, while the grocery market could be about 130 billion dollars.

Africa is the main exporter (Table 3), but the African countries mostly export unprocessed cocoa beans and semi-finished products with a low added value, also because of import duties imposed by importing and consuming countries. Between 2010 and 2016, the cocoa beans trade has increased by 40 percent, and the trade of cocoa paste by 35.9 percent, but the cocoa butter is stable. The export value has increased by 45 percent, but the structure of the trade is still that of a low-value commodity.

Still, in 2016, 80.8 percent of all African export was due to unprocessed beans, while butter and paste represented, respectively, 6.5 and 9.1 per cent. Compared to six years before, there has been no improvement.

Focusing on the main product, the cocoa beans, in 2016 Europe has imported 65.5 percent of the volumes, and the USA another 12.6 percent. The Netherlands alone absorbs 25.8 percent of the global trade of cocoa beans. Belgium follows in the second position, with 9.1 percent. It is therefore evident the polarization, also geographic, of this value chain: in Africa, most of the production, whereas in a few countries the processing and valorisation of the commodity, into intermediate or final products.

The global import of cocoa beans has increased by 36 percent since 2000 and remarkable growths have been recorded almost everywhere, with the USA being the only exception. Belgium reports an impressive growth: 190.5 percent. Italy grows only 19 percent, from 79,000 to 94,000 tons in the period. With a rapid look at India and China, two very different situations can be detected: the first one shows a very fast increase, although still at very low levels, whereas the latter is stagnant, always below 30,000 tons, an almost meaningless quantity.

Table 3: Export from Africa

Item	000t		%Δ	2010		2016		%Δ 2010-16
	2010	2016		US% 10 ⁶	%	US% 10 ⁶	%	
Beans	1,632	2,290	40.3	4,417	77.4	6,686	80.8	51.4
Butter	107	106	-0.9	480	8.4	540	6.5	12.5
Paste	153	208	35.9	623	10.9	757	9.1	21.5
Powder and cake	55	135	145.5	187	3.3	292	3.5	56.1
Chocolate products *	76	73	-3.9	312	5.5	267	3.2	-14.4
Total				6,019	105.5	8,542	103.2	41.9

* includes products with cocoa in any form, but white chocolate

Source: FAOSTAT

During the last two decades, the price of cocoa beans on the international market has initially fallen, with a descending spiral since 1998. The world price per tonne (average of London and New York prices) has decreased from 1,236 dollars to 833 in 1999 and to only 672 in 2000. The price is then risen again to 855 and 1,369, to fall again to 1,256. In 2004, the average world price was again only 974, to climb again to 1,200 in October. From 2005 to 2017, the price has fluctuated continuously, always above 2,000 US dollars, with a peak over 3,000. In the last months of 2018, the price has fallen again, to 2,100 US\$ per tonne.

It is important reminding that this is the price of large transactions, for large quantities of beans at the exit gate from the national traders, which is very different (much higher) from the price received by the producers back in the countryside, that can be a small share of this amount.

Tothmihaly (2018) has analysed the data 1963-2013 of the international cocoa market and he has demonstrated a substantial lack of elasticity of both supply and demand, concerning the price. This lack of adaptation to changing situations condemns the small and tiny producers to poverty. At the same time, the various mechanisms set up in the past (planned economy, marketing boards, buffer stocks, international agreements) have demonstrated their inefficiency and the more modern ones are very risky.

Another blow to the cocoa market is due to the European Union Directive 2000/36/CE, that has allowed the reduction of the cocoa butter in the composition of chocolate, which can now be legally produced also with other cheaper vegetable fats. This very much discussed Directive, strongly opposed by the international pro-development NGOs and by some Member Countries (Italy, Spain), hits very badly the economies of the cocoa-producing

countries, already stressed by the price volatility and by the output variability (aggravated by climate change).

4.0 VALUE CHAIN AND FINAL CONSUMPTION

Five companies dealing with first processing (Cemol, ADM, Blommer, Cargill and Barry Callebaut) controlled in 2013 about 72 percent of the industrial processing of the cocoa beans, with plants mainly in the importing countries, and only a small number of facilities in the producing nations (BASIC, 2010).

These firms supply semi-processed products to the next step of the value chain, where the biggest company is the American Mars Wrigley Confectionary Inc., with 14.4 percent of the global market. The Italian Ferrero occupied the fourth position, but in 2018 Ferrero has acquired the American firm Hershey, that represented 7.2 percent. Consequently, Ferrero could be today the largest global player. The chocolate and grocery sector are however characterized by great dynamicity, with merging, acquisitions, dismissions, entry of new players, etc. taking place almost weekly.

Table 4 shows the net value of the sales of goods containing chocolate. Mars holds the first position, with about 18 billion US\$, followed by Ferrero. It is important to remember that each company owns dozens of trademarks.

The value of the consumers' market is appraised to be about 130 billion US dollars. In the last decades, there has been a constant growth, with some recent slowing only in USA. The individual consumption has increased in the traditional markets, while new markets have emerged. A similar trend is foreseen for the next years, with a 2-3 per cent annual growth of consumption.

The highest individual consumption can be found in Switzerland, with about 8.8 kg/year, followed by Austria (8.1) and Germany (7.9). In China, a potential market with 1.4 billion people, the consumption falls to 100 grams/year, much lower than in India, another huge country, where the individual consumption is 200 grams (Chawla & Sondhi, 2016). All Asian markets are showing positive signs, like the Russian one, where the annual individual consumption is already 4.9 kilos.

The final market is extremely varied, and segmentation is growing. There are products with a strong seasonal identity (Easter, Halloween, Christmas, etc.), products with a concentration on the coldest months and products for the everyday life (cocoa powder, bars, spreads, syrups). Ice-creams consumption was once limited to the hottest months of summer, but it is now common throughout the year. Products can be dark, very dark, with very high or very low contents of cocoa butter, or they could be with milk chocolate or white chocolate. Cakes and biscuits may have very different contents of chocolate, of different qualities. Finally, the

new emerging trends: organic, vegan, kosher, geographic indications, natural, fair trade, sustainable.

Table 4: Net sales of products with chocolate (US\$ 109)

Company	Net sales 2017
Mars Wrigley Confectionery, div. of Mars Inc (USA)	18.0
Ferrero Group (Luxembourg / Italy)	12.0
Mondelēz International (USA)	11.6
Meiji Co Ltd (Japan)	9.7*
Nestlé SA (Switzerland)	8.8
Hershey Co (USA)	7.5
Chocoladenfabriken Lindt & Sprüngli AG (Switzerland)	4.1
Ezaki Glico Co Ltd (Japan)	3.2*
Arcor (Argentina)	3.1
Pladis (UK)	2.8

* Includes non-grocery products

Source: Candy Industry, January 2018

In the richest countries, characterized by the highest individual consumption, the market is evolving towards quality products, with high contents of the best cocoa varieties, also characterised with environmental and social values, certified by Third Parties, with premium prices, recognizable in the market thanks to appropriate policies of communication and placement. For example, an Italian consumer (Table 5) could buy today a 100-gram chocolate bar for a price between 50 cents and 2.79 euro: a very wide range, due to percentage of cocoa butter, country of origin, certification, packaging and placement. The most expensive: a 70-gram bar with cocoa from Peru, organic and fair trade, positioned in a very elegant coffee shop, priced five euro.

Such variability implies well informed and educated consumers (Torquati, Paffarini, Tempesta & Vecchiato, 2019) whose choices are not guided only by the prices, but also by the environmental and social consequences of their purchasing habits (Cecchini, Torquati &

Chiorri, 2018). Appropriate information campaigns, targeted communication and marketing strategies are the logic consequence.

5.0 CORPORATE SOCIAL RESPONSIBILITY, ORGANIC AND FAIR TRADE

Corporate Social Responsibility (CSR) characterizes nowadays many decisions taken by managers and entrepreneurs (Carroll, 1999; Carroll 2015), especially in cross-national companies, which in the past have been the target of many counter-information and boycotting campaigns by global Non-Governmental Organizations. Large cross-national companies have been frequently accused of exploiting their labour force, of lack of respect for human rights, of the over-exploitation of natural resources, for the indifference towards the misgovernment in many developing countries, etc. To respond, and thanks also to new generations of decision-makers, more socially and environmentally sensitive, the large trading and processing companies mentioned in the previous paragraphs have begun to change some of their behaviours (Bruni & Santucci, 2016).

Table 5: Prices for a chocolate bar in Italy, October 2018

Point of sale and Products *	g	€
Specialized organic retailer or coffee shop		
Peru, Bio and Fair Trade, Dark 70%	70	5,00
Without Geographic Indication, Dark 88%	75	3,00
Bitter Ecuador - Caribe, Bio Vegan, Dark Extra 70%	100	2,79
Latin America, Bio and Fair Trade, Dark Extra 75%	75	2,50
Large retailer		
Without Geographic Indication, Dark Extra 70%	100	2,15
Without Geographic Indication, Dark Extra 99%	75	1,95
Blend from Latin America and Africa, Fair Trade, Private label, Dark 72%	100	1.20
Blend from Latin America and Africa, Fair Trade, Private label, Dark 50%	100	1.20
Hard Discount		
Without Geographic Indication, Vegan without added sugars 52%	75	1,19
Without Geographic Indication, Dark 50%	100	0,50

* *The commercial names and the name of the firms have been cancelled*

The Corporate Social Responsibility is also a marketing strategy, to propose products on rich and developed markets, where the consumers are paying more attention to what happens in Developing Countries, to the local producers, to nature and biodiversity, and to the quality of products. Another factor pushing towards more environmentally conscious behaviours (Bright, 2001; Lemeilleur, N'Dao & Ruf, 2015) has been the arrival in the financial markets of large investment funds finalized to "green companies".

To mention a few examples, in 2009 Nestlé has launched the "Cocoa Plan", to increase cocoa productivity, improve the living conditions of the small producers, diversify their income, with studies and projects in many countries and in 2012, in cooperation with the International Cocoa Initiative Foundation, a Swiss NGO operating in Ivory Coast and Ghana, launched the "Child labor monitoring and remediation system", aiming at eliminating child labor in these countries. In 2013, the American Mondelez with the UN Development Program and the Ghana Cocoa Board have launched the "Environmental Sustainability and Policy for Cocoa Production", which has involved several thousand of smallholder families. Mars, with the program "Cocoa for generations" is committed to certifying "sustainable" all the raw materials before 2012 and for this purpose, it foresees to invest one billion US dollars in ten years. Before 2020, all the cocoa imported by Germany will be certified, while the Dutch import will be totally "sustainable" in 2025. In Italy, 61 percent of the cocoa beans purchased by ICAM, a major processor whose products are distributed all over the country, was certified as "organic" and "fair-trade", and the final goods with these logos represented 56 percent of the output value.

Organic farming (Lampkin, 1990) dates back to 1924, when the philosopher Rudolf Steiner, founder of anthroposophy, gave some lectures in Slesia, presently a region of Poland. His ideas were applied by some followers, who generated the movement named "biodynamic agriculture". After this, other people followed and developed other approaches, in England, France and Switzerland. Other experiences took place in Japan and Tasmania. Very rapid expansion has been recorded in the last 30 years, thanks to the growing consumers' demand and to the supporting measures introduced by the European Union, Japan and South Korea. In other countries, organic farming grows, thanks to its sustainability and resilience, to satisfy the domestic demand and to intercept premium prices, often linked with export to rich markets.

This is the case of cocoa, that in 2016 was cultivated organically in 345,000 hectares (Willer & Lernaud , 2018), equal to 3.4 percent of the global cocoa area. The countries with the highest shares of organic certified areas are Sierra Leone (50%), Bolivia (44%), Nicaragua (40%) and Honduras.

Both ICCO (2006) and FAO (Pay, 2009) consider the organic production and the Fair-trade strategy two feasible options, although technically difficult, and there are several projects, in Africa, for their further expansion.

Fair-trade (FT) is an ethical partnership based on dialogue, transparency and respect, that seeks greater equity in international trade (Wilkinson, 2007). FT started in the 70's in USA and in some European countries, as a grassroots movement, thanks to missionaries working in Developing Countries and it is nowadays a well-organized international organization. Fair-trade contributes to sustainable development by offering better trading conditions and by securing the rights of mainly smallholders and workers – especially in Developing Countries (Djokoto, 2016). Beside the minimum price, FT producers' groups receive also a premium for the improvement of their organization and a second amount to be used for actions of community development (education, health, water and sanitation, roads, community centres, etc.).

Presently, about six percent of the global cocoa output is certified organic and about one percent is certified Fair-trade. About one-tenth of the organic output is also Fair-trade. Certification guarantees to organic producers a premium price of 100 – 200 US dollars per tonne, while presently the minimum price for one tonne of Fair-trade product is 2,300 US\$, compared to the average international price at 2,130 US\$. Other benefits of the FT approach are the security of earnings, due to long term purchase contracts, and an additional premium price of 200 US\$ that is not given to the individual producer, but to its organization, to improve its structures (storage and offices) and to pay for extension agents, to increase yields and quality, and for social investments (water purification, sanitation, schools and health posts, roads, etc.)

6.0 CONCLUSIONS

The present value chain system, in the case of cocoa as well as in the case of many other commodities, is not sustainable and is destined to fail: it does not guarantee sufficient income to the agricultural producers, pushes towards the self-exploitation of the labour force (especially the children), impacts negatively on environment and biodiversity and on the health of farmers.

The extreme poverty of the smallholders makes impossible access to modern and improved means of production, and this becomes at the same time cause and effect of the increasing marginalization of entire communities. The adoption of different practices labelled "Corporate Social Responsibility", by almost all large companies, must be seen positively, but the figures of a) areas and b) producers involved are still almost meaningless at the global level. It is important to keep monitoring such programs and projects, to be sure that these actions are not only a marketing strategy.

Much bigger impact could have the reduction and elimination of entry barriers by the consuming countries, and the growth of processing in the cocoa-producing countries, to guarantee jobs and income in situ, although this development might lead to more competition for the industries based in high-income countries.

The dramatic socio-economic situation experienced in many cocoa-producing countries needs to be modified: public and private investments are required, not only in the agricultural phase but all along the value chain. The few international firms controlling most of the trade, grindings and chocolate-based consumers' products must bring more added value to these developing countries.

As a matter of fact, the 4th World Cocoa Conference, held in Berlin (Germany) in April 2018 and attended by over 1,500 participants from all producing and consuming countries, with representatives of all stakeholders, has issued a final Declaration containing 18 recommendations, based on the discussions within four working groups. Synthetizing their contents, the Conference has urged all stakeholders to work together:

- a) To guarantee an acceptable income to small producers
- b) To increase and stabilize yields, with beans of better qualities,
- c) To decrease the environmental impact, with less deforestation and more agro-forestry
- d) To eliminate child labour
- e) To improve the producers' self-organizations
- f) To increase the added value generated in the producing countries
- g) To improve the traceability all along the value chain.

The expansion of different types of sustainable production, like the organic farming, as well as the growth of the Fair-trade market, accompanied by intelligent consumption in the leading final markets, could also contribute to reduce the pressure on the planet and to have some more social justice in this world, characterized by explosive contradictions. Through some premium prices, the consumers could recognize higher prices to the first producers in developing countries and to the high-quality products made by medium and small size companies: a win-win situation, where all players enjoy a benefit.

7. REFERENCES

- [Akintelu, S., Mele, L. & Adewumni, M. \(2019\) Adoption of some cocoa production technologies by cocoa farmers in Kogi State, Nigeria. *International Journal of Agriculture Innovation, Technology and Globalization*, 1 \(1\): 31–43. DOI: \[10.1504/IJAITG.2019.099602\]\(https://doi.org/10.1504/IJAITG.2019.099602\)](#)
- [Asamoah, D. & Annan, J. \(2002\). *Analysis of Ghana's cocoa value chain towards services and standards for stakeholders. International Journal of Services and Standards*, 8 \(2\): 116-132, DOI: \[10.1504/IJSS.2012.049423\]\(https://doi.org/10.1504/IJSS.2012.049423\).](#)
- Baba Ali, E. Awuni, J.A. & Danso-Abbeam, G. (2018). Determinants of fertilizer adoption among smallholder cocoa farmers in the Western Region of Ghana. *Cogent Food and Agriculture*, 4: 1-10.
- BASIC (2016). *The dark side of chocolate*. Accessed 27 October 2018. Available: https://lebasic.com/wp-content/uploads/2016/07/PFCE_Cocoa-Value-Chain-Study_Final-version.pdf

- Bright, C. (2001). Chocolate could bring the forest back. *World Watch Magazine*. November-December.
- Bruni, M. & Santucci, F.M. (2016). Agribusiness at global scale and smallholders. *Bulgarian Journal of Agricultural Sciences*. 22 (1): 01-09.
- Carroll, A.B. (1999). Corporate social responsibility: evolution of a definitional construct. *Business and Society*. 38: 268-295.
- Carroll, A.B (2015). Corporate social responsibility, The centrepiece of competing and complementary frameworks. *Organizational Dynamics*. 44: 87-96.
- Cecchini, L., Torquati, B. & Chiorri, M. (2018). Sustainable agri-food products: A review of consumer preference studies through experimental economics. *Agricultural Economics*. 12: 554-565. DOI: 10.17221/272/2017.
- [Chawla, D. & Sondhi, N. \(2016\). Local versus global brand preferences amongst urban Indian chocolate consumers: an empirical study. *International Journal of Indian Culture and Business Management*, 12 \(4\): 508-533. DOI: 10.1504/IJICBM.2016.076823.](#)
- Dand, R. (1993). *The international cocoa trade*, Cambridge: Woodhead Publ. Ltd.
- [Djokoto, J.C. \(2016\). Ghanaian fair-trade cocoa-producing households' livelihood diversification and efficiency. *International Journal of Green Economics*. 10 \(2\): 191-212. DOI: 10.1504/IJGE.2016.080536](#)
- Fahmid, M., Harun, H., Fahmid, M.M. & Saadah Busthanui, N. (2018). Competitiveness, production, and productivity in Indonesia. *IOP Conference Series, Earth and Environmental Science*. 157: 1-6.
- ICCO (2006). *A study for the organic cocoa market*. 2006. Accessed 27 October 2018. Available: <https://www.icco.org/sites/www.roundtablecocoa.org/documents/EX-130-10%20-%20ICCO%20-%20Study%20on%20Market%20for%20Organic%20Cocoa.pdf>
- ILACO BV (1981). *Agricultural compendium for rural development in the tropics and subtropics*. Amsterdam: Elsevier.
- Kozicka, M., Tacconi, F., Horna, D. & Gotor, E. (2018). *Forecasting cocoa yields for 2050*. Rome: Bioversity International.
- Lampkin N. (1990). *Organic Agriculture*. Ipswich: Farming Press.
- [Lemeilleur, S., N'Dao, Y. & Ruf, F. \(2015\). The productivist rationality behind a sustainable certification process: evidence from the Rainforest Alliance in the Ivorian cocoa sector. *International Journal of Sustainable Development*. 18 \(4\): 310-328. DOI: 10.1504/IJSD.2015.072661.](#)

- Pay, E. (2009). *The market for organic and Fair-trade cocoa*. Rome: Trade and Markets Division, FAO. Accessed 27 October 2018. Available: http://www.fao.org/fileadmin/templates/organicexports/docs/Market_Organic_FT_Cocoa.pdf
- Torquati, B., Paffarini, C., Tempesta, T. & Vecchiato, D. (2019). Evaluating consumer perceptions of social farming through choice modelling. *Sustainable Production and Consumption*. 19: 238-246. DOI: 10.1016/j.spc.2019.04.005.
- Tothmihaly, A. (2018). How low is the price elasticity in the global cocoa market? *African Journal of Agricultural and Resource Economics*. 13 (3): 2019-223.
- Wilkinson, J. (2007) Fair-trade: dynamic and dilemmas of a market oriented global social movement. *Journal of Consumer Policy*. 30 (3): 219-239. DOI: 10.1007/s10603-007-9036-3.
- Willer, H. & Lernaud, J. (2018) Editors. *The World of Organic Agriculture 2018 - Statistics and Emerging Trends*. Frick and Bonn: FIBL – IFOAM. Accessed 27 October 2018. Available: <https://shop.fibl.org/CHen/mwdownloads/download/link/id/1093/?ref=1>