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# COMMITTEE ON COMMODITY PROBLEMS

## INTERGOVERNMENTAL GROUP ON TEA

### TWENTY-THIRD SESSION

**Hangzhou, the People's Republic of China, 17-20 May 2018**

### DEVELOPING FUTURES AND SWAP MARKETS FOR TEA

## I. INTRODUCTION

1. International tea prices are characterized by recurrent price cycles and revenue fluctuations. The 71st session of the Committee on Commodity Problems, in October 2016, urged policy makers to give due attention to such price movements. The FAO Intergovernmental Group on Tea (FAO – IGG/Tea)<sup>1</sup>, as well as industry bodies and governments, have identified tea futures markets as a possible option to help alleviate excessive price fluctuation.

2. Tea futures contracts enable producers and others to manage their price risk, and improve price discovery in the tea market. While futures contracts for coffee have been actively traded since 1882 and contracts for cocoa since 1925, there are no futures contracts for tea. Some in the tea industry believe that with its more than 3 000 varieties, tea is too heterogeneous to trade on a futures exchange. They argue that for tea, one cannot establish a “reference variety” that can be the basis for a standardized contract, nor a system of discounts and premiums that would allow for a range of teas to act as the underlying for a futures contract. Evidence may suggest otherwise.

3. This document aims to support discussions on tea futures and swap contracts during the 23rd Session of the FAO – IGG/Tea. The document briefly highlights the situation of the tea market, identifying price volatility as one of the major challenges affecting the sub-sector, before discussing conditions towards a successful development of tea futures and swap contracts.

<sup>1</sup> FAO, 2012a, 2012b.



## II. TEA MARKET STRUCTURES AND MARKETING ARRANGEMENTS

4. Tea is produced in some forty countries, with China, India, Kenya and Sri Lanka accounting for 78 percent of production and 73 percent of exports (2016, in volume terms). Most of the tea produced in China and India is consumed internally, while the bulk of the tea produced in Kenya and Sri Lanka is exported. Two thirds of tea production in China is in the form of green tea; India and Kenya mostly produce CTC<sup>2</sup> black tea. Sri Lanka specialises in orthodox black tea, which carries a price premium. At over USD 15 billion, the world tea market is large enough to support a futures market, but its segmentation can make it difficult to obtain the critical mass needed for a futures contract.

5. Some 8 to 9 million smallholders produce 70 per cent of the world's tea, the rest of the output comes from tea estates. Smallholders sell their tea to factories for processing, often at a price related to the price that factories obtain from selling their "made tea". Factories can sell tea directly to blenders, but most of the tea traded internationally is sold through auction centres. There are a number of such centres, all in producing countries<sup>3</sup>. Tea sold through auctions is tasted by interested buyers and by the auction master, and the taste test will determine at what price the tea is sold.

6. Tea auction markets provide a mechanism that permits the best possible price to be achieved on a given day for a given tea origin. The futures market provides information about the general trend of prices, and makes it possible to lock in future prices. A futures exchange can build on an auction's strengths (infrastructure, grading), while those active on the auction can use futures contracts to manage their overall price risk exposure while still using auctions to get the best price for their tea. Nevertheless, the nature of the auction, with sellers and buyers focusing on the specifics of each parcel/chest, can easily give rise to the erroneous idea that as each tea is unique, a market that relies on standardization cannot work. In fact, as coffee futures contracts show, having a standardized futures contract does not mean that one has to standardize the physical market.

## III. TEA PRICE VOLATILITY

7. Tea prices are volatile, and futures can still help improve price transparency, enable easier financing for tea stocks, and make it possible for growers and factories to shift their pricing from months of low prices to higher-price months. However, while tea shows price behaviour similar to what one sees in cocoa or coffee markets, tea sub-sector participants are typically exposed to price risk for a relatively short time frame, given that tea is produced throughout the year and moves quite fast from producer to blender. Thus, they face less economic pressure to manage their price risk. This is different from cocoa and coffee, where harvests are seasonal and stocks are kept for many months.

## IV. MARKET SEGMENTATION

8. Is there one tea market, or are there more? How well are the various origins, varieties, prices for tea that are certified under fair-trade premiums etc. correlated? The data give only partial results.

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<sup>2</sup> Crushing, Tearing and Curling tea, produced in a more "mechanized" manner, and often used for blending

<sup>3</sup> The London tea auction, established in 1679, was closed in 1998

9. Price correlations for CTC black tea in India are as follows:

**Table 1. Coefficients of Correlation of weekly Indian Tea Prices (CTC leaf & all dust), 2008–2017**

	Kolkata	Guwahati	Siliguri	Jalpaguri	Cochin	Coonoor	Coimbatore
Kolkata	1	0,79	0,69	0,40	0,31	0,19	0,27
Guwahati		1	0,72	0,40	0,30	0,18	0,26
Siliguri			1	0,34	0,30	0,20	0,26
Jalpaguri				1	0,18	0,14	0,15
Cochin					1	0,69	0,84
Coonoor						1	0,85
Coimbatore							1

Source: FAO IGG/Tea Secretariat.

10. If price correlation is below 0.7, the two locations do not form one market. So for CTCs in India, there are two markets, one in the North (Kolkata-Guwahati-Siliguri), and one in the South (Cochin-Coonoor-Coimbatore). For international auction centres there is a longer monthly price series, as shown in Table 2:

**Table 2. Coefficients of Correlation of Tea Prices, 2000–2017**

	Cochin	Colombo	Mombasa
Kolkata			
2000-2017	0.74	0.72	0.71
2000-2009	0.62	0.57	0.52
2009-2017	0.05	-0.01	0.13
2000-2017 (trend-corrected)	0.52	0.34	0.53
Cochin			
2000-2017		0.89	0.79
2000-2009		0.82	0.63
2009-2017		0.39	0.18
2000-2017 (trend-corrected)		0.62	0.58
Colombo			
2000-2017			0.78
2000-2009			0.58
2009-2017			0.14
2000-2017 (trend-corrected)			0.43

Source: FAO IGG/Tea Secretariat. The trend-corrected prices use each auction price series corrected for its linear trend from 2000 to 2017.

11. In the long run, prices moved together, but this was partially because they all followed an upward trend. If this trend is removed, correlations fall. Further, from the 2000s to 2010s, markets seem to have become much less correlated.

12. Thus, the tea market consists of a number of poorly-connected segments, the main ones being China for green tea; Colombo for orthodox black tea; and weakly-linked CTC black tea markets in North India, South India and Kenya. Prima facie, the behaviour of the three CTC black tea markets is difficult to understand, as they have common buyers and much of their teas are used for blending. It may be that once there is a central reference market (e.g. a futures contract), prices will become better integrated.

13. Of the various segments of the tea market, that of green tea in China (USD 4 billion) is the largest. If a futures contract were to be introduced, it would have to be focused on the domestic market. However, year-to-year price changes in China are low, and low volatility means no demand for futures. Furthermore, the Chinese market appears somewhat fragmented and disorganized to support a futures market.

14. Black tea markets are well organized, with auctions not only acting as nodal points for physical trade flows, but also offering a mechanism through which market participants agree on grades and standards. A futures exchange can build on this, with physical deliveries organized around the auction infrastructure, or using auction prices to establish a generic reference price for tea. The best futures market potential is in the USD 2 billion North Indian CTC tea market. South Indian CTC tea futures, if they share a platform with North Indian CTC tea, can perhaps feed on the latter's liquidity. The USD 1.2–1.4 billion markets in Kenya and Sri Lanka cannot rely on an established futures exchange to add tea to their product offerings so would have to look for a partnership with a foreign exchange.

## V. READINESS OF THE TEA SECTOR FOR A FUTURES CONTRACT

15. On the positive side, several of the conditions for a successful tea futures contract exist. China's green tea and North India's black tea markets meet the minimum market value criteria of futures exchanges. All countries have an active, relatively well-organized private sector, and with one exception, in the black tea market, there are no companies large enough to prevent markets from freely determining prices. Industry groups in Dubai, India, Kenya and Sri Lanka have in the past two decades expressed support for tea futures. Except perhaps in China, the infrastructure (grading, warehousing, etc.) for successful futures trading exists, managed by auctions with which a futures exchange can collaborate.

16. There are some mixed factors. One is that tea price volatility is sufficiently high to warrant hedging, but (given also that tea production is not as seasonal as cocoa and coffee) not high enough to make survival difficult for companies that do not hedge. So industry participation will not be automatic. Also, tea price volatility may be too low to attract large speculative interest. Speculators are necessary for a successful futures contract because they provide the liquidity that makes use of the exchange easy and low-cost. A further issue is that the legal and regulatory framework for commodity futures trade exists in China and India (with constraints on foreign users), but would need to be built in Kenya and Sri Lanka.

17. Negative for the potential of a futures contract is that there is no "standard", dominant type of tea and tea grading remains subjective. A similar constraint in the coffee sector has been successfully resolved. To what extent could a tea futures contract be constructed along similar lines? After all, "any consumer knows coffee is not coffee; there are many grades and varieties."<sup>4</sup>

18. The main coffee contract, for Arabica coffee, deals with the wide variety of coffees traded by having three levels of discounts and premiums:

- For specific grades (origin countries);

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<sup>4</sup> [https://www.theice.com/publicdocs/ICE\\_Coffee\\_Brochure.pdf](https://www.theice.com/publicdocs/ICE_Coffee_Brochure.pdf)

- For specific delivery locations;
- And for specific deliveries, determined by exchange experts who will actually taste the coffee that is delivered to decide whether it merits an additional premium or discount.

19. Thus, all coffee delivered to an exchange is valued very closely to its actual value on the market. The coffee itself is not standardized: individual quality differences, even as they differ from lot to lot, are clearly recognized and valued. However, coffee sector participants have become used to thinking of their product in relation to a somewhat abstract “standard contract”, rather than existing in isolation. While it will require a change of mind-set, a similar mechanism could be feasible for a tea futures contract.

## VI. MOVING AHEAD

20. A number of actions are necessary to move ahead with futures contracts and swaps. First, while futures markets are in continuous search of new products, tea is not an easy candidate. The tea sub-sector, therefore, has to engage the futures exchanges. It is expensive to develop the infrastructure of an exchange just for tea, and demanding in terms of dedicated experts. The tea community could own the intellectual rights to a tea contract, but not have an ownership stake in the futures exchange.

21. Second, the tea futures contract needs to be elaborated. Commodity futures markets have to reflect the market conditions of the underlying physical commodities. For this, exchanges rely on the final settlement mechanism of their contracts. This can be a physical delivery mechanism, or financial settlement based on a reference price (an index). In the case of black tea, such an index can be construed on the basis of auction prices. Or instead, physical delivery can rely on auction facilities, with a premium/discount system.

22. Third, the futures exchange and the tea industry will need to work closely together on building contract liquidity. A contract that is useful is not automatically successful. Typically, futures exchanges have to collaborate in the early years of a contract with market makers (who have to come from the tea sector) to provide continuous bids and offers and in return, share the trading revenue.

23. Fourth, the donor community and governments should give support to growers groups so that they too can benefit from an exchange – through its market information, or because in a competitive environment, processors and traders can use futures exchanges to offer an expanded range of pricing options to growers.

24. Tea swaps have been mentioned as an alternative to futures contracts. They are not, but they can offer sufficiently creditworthy companies a means to manage their price risks. Through a broker, tea swaps can link those who want to receive a fixed price to those who want to pay a fixed price. A trial was started by Teaswap in Sri Lanka in March 2018. But as the broker cannot take on considerable risk – as is the case now – the growth of the tea swap market will be seriously constrained.

## VII. CONCLUDING REMARKS

25. It is, prima facie, surprising that there is a vibrant futures market for cocoa and coffee, but not for tea. One reason is that cocoa and coffee are seasonal, with higher risks of market disruptions and a greater need for storage (and thus, exposure to the risk of price falls for those owning the stored produce). Also, the tea market is slightly more segmented. Nevertheless, the differences between the sectors are a matter of degree. Cocoa and coffee markets are segmented, tea a bit more so. Cocoa and coffee have many grades and varieties, tea a few more. Therefore, it would seem that the practices adopted in, say, the coffee sub-sector, to match the need for standardized futures contracts with highly diverse physical product, are a good starting point for a tea futures.

26. Further work is still required in moving ahead towards tea futures contracts, ranging from building the knowledge base on tea trading and market practices to obtaining industry agreement on what varieties/grades can form the basis for a standardized futures contract. But with coffee as a precedent, tea futures contracts seem achievable. And while not a panacea to all of the producers' and exporters' problems, futures provide an effective way of dealing with price and revenue fluctuations.

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