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RISK MANAGEMENT FOR COFFEE PRICE FLUCTUATIONS

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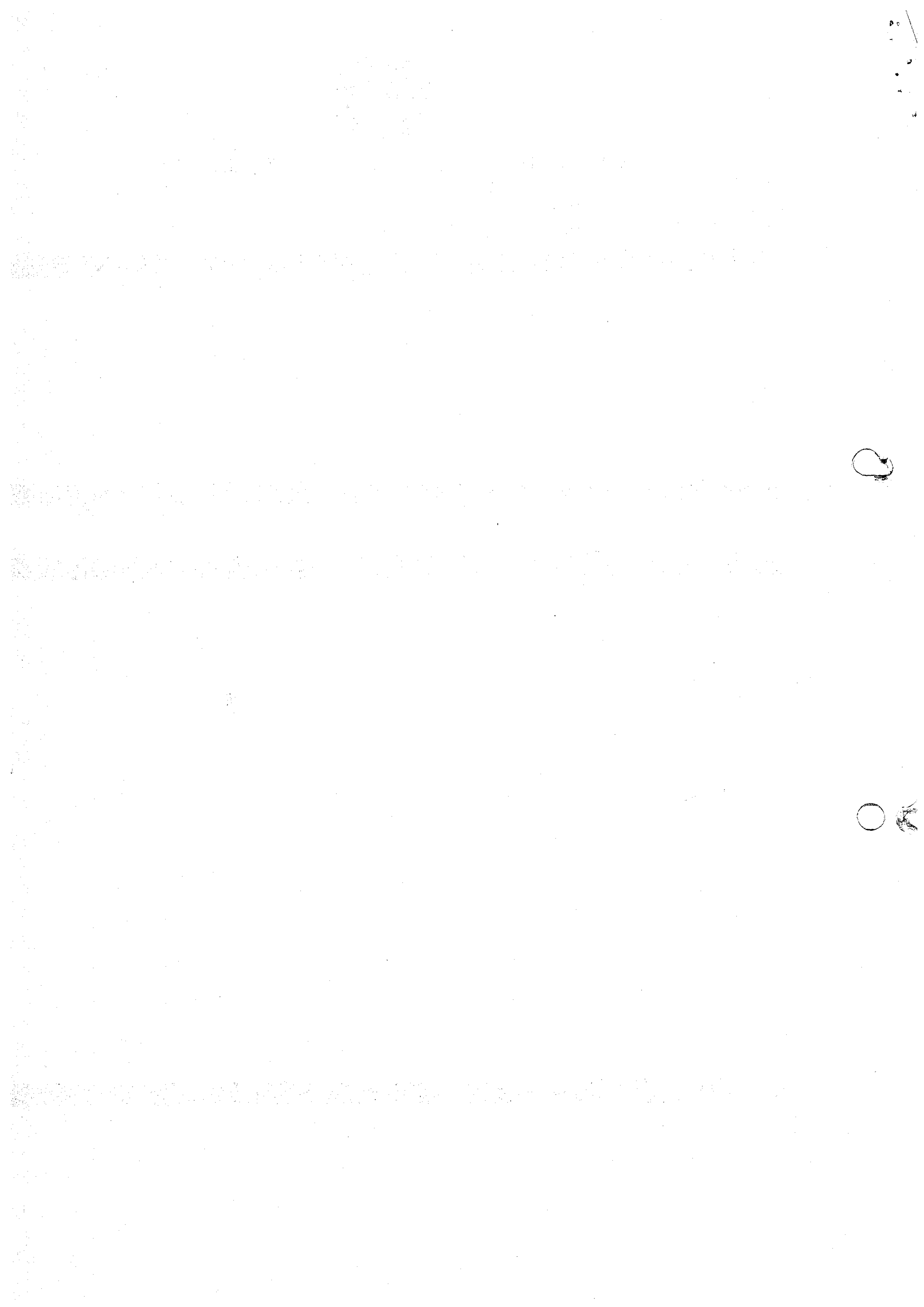

RISK MANAGEMENT FOR COFFEE PRICE FLUCTUATIONS

INTRODUCTION

1. For numerous developing countries coffee exports constitute a substantial source of foreign currency earnings and represent a large proportion of the tax receipts and gross domestic product. Fluctuations in production and prices are thus one of the major concerns of these economies that are highly dependent on coffee. In fact, the international coffee trade is characterized by a very high degree of instability compared to many other commodities. Even while the beans are still on the tree, the prospects for the coffee harvest can vary greatly on account of drought, frost, seasonal rains or other unfavourable climatic conditions. These factors can adversely affect the evolution of coffee prices. Moreover, other unforeseeable factors such as strikes and socio-political unrest may dramatically affect prices.

2. For more than a decade, the structure of the majority of the world's commodity markets has pursued a radical new approach, characterized by the almost complete disappearance of supply and demand intervention mechanisms. Given these conditions it goes without saying that the unfavourable evolution of prices and trading conditions of these commodities has a considerable effect on a large number of exporting countries. These countries are therefore forced to redouble their efforts to adapt to the changing and unstable economic environment. A mastery of the new techniques of risk management would therefore improve sales transactions. Research in this field has developed and intensified over the last decade or so. Several years ago, UNCTAD started to become involved in risk management associated with commodities through activities and seminars aimed at producing countries so that they would be in a position to safeguard themselves against the risk of price instability. The World Bank has also published several research papers in this field.

3. The present document is derived on the one hand from the work of the round table conference organized by the World Bank in April 1998 on the theme "New Approaches to commodity price risk management in developing countries"[1], and on the other hand from the meeting of experts held by UNCTAD on risk management for commodities in developing countries[2]. Accordingly, on the basis of these two important meetings the present report will provide a summary of the scope and limitations of financial instruments for managing risks associated with coffee prices.

I. PRICE RISK MANAGEMENT INSTRUMENTS

4. Among the instruments for managing the risk of price fluctuations mention may be made of forward contracts, futures and options markets, swaps and various other forms of guaranteed financing.

A. Forward contracts

5. The coffee forward contract is an agreement to buy or sell a given amount of coffee at a specified date in the future and at a predetermined price. The delivery and the payment take place at a specified date. The advantage of this contract is that the prices are predetermined and remain fixed for the buyer and seller. The risk associated with this strategy is that one of the parties to the contract suffers a profit or a loss depending on the evolution of the price of the product. If the current price (at the date of conclusion of the contract) is greater than the predetermined price in the contract, the buyer makes a profit on the transaction whereas the seller suffers a loss. Conversely, if the current price is less than the forward contract price, the seller makes a profit whereas the buyer suffers a loss. When this strategy is skilfully pursued by the exporting country, it will realize a premium

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[1] *Cf. Partnerships Group, The World Bank "New Approaches to commodity price risk management in developing countries", Round table discussion, Washington, 28 April 1998.*

[2] *Cf. UNCTAD, "Examination of the effectiveness and usefulness for commodity-dependent countries of new tools in commodity markets: risk management and collateralized finance", Geneva, 4 May 1998. Doc. TD/B/COM.1/EM.5.2 and UNCTAD/COM/15/Rev. 2.*

on a futures position and will also benefit from being able to forecast its export earnings. The exporting country may also earn interest on the volume sold if the sale proceeds are invested in financial instruments. This selling strategy is used in various forms in numerous countries, in particular those whose marketing system is controlled by State monopoly.

B. Futures contracts

6. The coffee futures contract is a properly regulated and standardized paper contract for a specific quantity of coffee (for example 5 tonnes for the Robusta futures contract in London) of a given quality, the date and place of delivery being specified. In contrast to the forward contract, the futures contract need not involve the delivery of the physical product in order to honour the agreement. The futures contract is negotiated daily on the futures markets. The futures market is a financial institution that enables futures contracts to be sold and purchased for terms ranging from 3 to 18 months. The coffee futures markets are the following:

- New York: Coffee, Sugar and Cocoa Exchange (CSCE)
- London: London International Financial Futures and Options Exchange (LIFFE)
- Paris: Marché international des cafés Robusta de Paris/Le Havre
- São Paulo: Bolsa de Mercadorias & Futuros (BM&F)
- Tokyo: Tokyo Grain Exchange (TGE)
- Singapore: Singapore Commodity Exchange.

7. The New York futures market (CSCE) and London futures market (LIFFE) are the main centres for international coffee trading. The main features of contracts in these two futures markets are shown in Tables 1 and 2 hereinafter.

TABLE 1

NEW YORK CSCE "C" FUTURES CONTRACT
(Contract for washed Arabica)

Transaction unit	37,500 lb (approx. 250 bags) per contract	
Quoted price	US cents/lb	
Dates	March, May, July, September, December	
Sources of supply and differential		Supplied at:
	Mexico, El Salvador, Guatemala, Costa Rica, Nicaragua, Kenya, Papua New Guinea, Tanzania, Uganda	Base or contract price
	Colombia	Base plus 200 points
	Honduras, Venezuela	Base less 100 points
	Burundi, India, Rwanda	Base less 300 points
	Dominican Republic, Ecuador, Peru	Base less 400 points

TABLE 2

LONDON LIFFE FUTURES CONTRACT FOR ROBUSTA

Transaction unit	5 tonnes	
Quoted price	US$/tonne	
Dates	January, March, May, July, September, November	
Sources of supply and differential		Delivery price according to defects:
	Angola, Brazil (Conillon), Cameroon, Central African Republic, Ecuador, Ghana, Guinea, India, Indonesia, Côte d'Ivoire, Liberia, Madagascar, Nigeria, Philippines, Democratic Republic of the Congo, Sierra Leone, Tanzania, Thailand, Togo, Trinidad & Tobago, Uganda, Vietnam	
	Grade 1: maximum 225 defects per 500 grammes	Base price
	Grade 2: maximum 226 to 350	Base less US$18
	Grade 3: 351 to 400	Base less US$27
	Screenings: at most 25% of coffee passes through a No. 14 screen, and at least 10% passes through a No. 12 screen	Base less US$54

8. The futures markets offer participants three types of operations, namely hedging, speculation and arbitration. Hedging a coffee position consists in safeguarding against the risk of price variation by adopting a futures market position that counterbalances the already existing position. Futures hedging does not guarantee the complete elimination of price risk, though it does lessen it and provides protection against market uncertainty. Speculation consists in accepting the price risk by taking the position on the paper contract that the investor wishes to offload. Arbitration operations consist in taking simultaneous buying and selling positions for different places or dates. The important feature of arbitration operations is to benefit from changes in the relationship governing the prices of these contracts. The costs involved in a futures market operation cover the transaction commission, the deposit, and the possible margin calls (in the event of an unfavourable change in price).

C. Premium options or operations

9. The option is a risk management instrument that protects against negative price movements while still preserving the possibility of profiting from a favourable change in price. In other words, an option corresponds to the right, but not the obligation, to purchase or sell a given quantity of coffee (physical contract or paper contract) at a specified price, the so-called "exercise price", during a specified period or at a specified date. The price paid for buying an option is the premium. The option to buy is termed a call option, and the option to sell is termed a put option. It is only the purchaser of the option who is entitled to exercise or not this right, which the seller of the option has to accept. The costs of this operation cover the payment of a premium, which may be high depending on the specific circumstances.

D. Swap operation

10. A coffee swap contract is an agreement to exchange a fluctuating price for a fixed price for a given quantity at specified intervals. In a swap agreement producers are able

to fix the prices that they receive in the medium and long term, and the consumers are able to fix the prices that they will pay. This is a purely financial mechanism since there is no physical delivery of any merchandise. The swap contract serves to guarantee the earnings derived from transaction operations.

II. EFFECTIVENESS AND USEFULNESS OF RISK MANAGEMENT TOOLS FOR THE PLAYERS IN THE COFFEE CHAIN IN EXPORTING COUNTRIES

11. The financial instruments that have been developed are very useful for the players in developing commodity-producing countries. This way of managing risks associated with price variations may provide numerous benefits to the participants in the coffee chain in exporting countries. In the coffee economies of developing countries the private sector consists mainly of local coffee growers, buyers and exporters. With the liberalization of the coffee chains, the private sector has become important in a number of exporting countries traditionally controlled by State monopolies. Competition between the players in the coffee chain has increased on account of the liberalization of the internal and external marketing system. These players need to use management instruments in order to tackle the numerous market pressures. The use of these instruments will help local buyers and exporters to protect their profit margins against price fluctuations, thereby enabling them to agree relatively high buying prices with the producers. In the absence of the possibility of using these tools, buyers and exporters will be forced to set large margins on the prices paid to the growers so as to offset negative fluctuations in international prices. For example, an exporter who buys coffee from producers in order to sell it to an international broker is exposed to the risk of negative price fluctuations. If the price falls, his profits margins will be affected. In order to guard against this risk of a fall in prices, the exporter will sell futures contracts when he buys the coffee from the producers. When he comes to sell to an international broker, he will redeem the contracts initially sold on the futures market. If the price has fallen between the date of purchase from the producers and the date of sale to his international broker, he will suffer a drop in earnings, though this loss will be compensated by the gain that he will make on the futures market. The favourable

price movement will produce a gain that will be cancelled out by his losses on the futures market. However, if the exporter wishes to ensure a minimum sale price he will cover himself on the options market by paying a premium.

12. The use of risk management instruments gives exporters a degree of flexibility in their strategy for supplying the world market. The exporter will therefore protect the value of his coffee stocks so as to regulate the market supply and thereby prevent a drop in prices caused by dumping. To what extent can producers in exporting countries use these tools in order to manage their price risk?

13. Producers in developing countries are small farmers who produce only small amounts of coffee. One of the possibilities available to them is to offer their production to a cooperative. Let us take the practical example of a producers' cooperative that knows it will harvest 250 tonnes of Robusta in six months' time and wishes to fix its price immediately by a hedging operation. Accordingly, it will sell paper contracts representing the volume of its expected harvest. When at the end of the six months the cooperative sells its physical product, the spot price may have fallen. In this case it will compensate this drop in the value of its coffee by a gain on the redemption of the paper contracts. However, if the movement of the market is favourable it will not profit from this rise on account of its hedging position. Nevertheless, the important point is that it will have been able to predict its earnings to some extent, for these instruments enable one to predict costs and earnings with more certainty. The players who expose themselves to the risks associated with coffee prices, even though risk management instruments exist, are actually engaging in speculation.

14. When considering all the players in a coffee chain in exporting countries, risk management instruments could be used at several levels. Producers or their cooperatives are going to guarantee their prices by approaching their local banks, which will take positions on the New York or London futures markets through brokers or their agents. The

local banks will act both as advisers and as information agents for the cooperatives. The local buyers and exporters may likewise make use of the New York or London futures markets, either directly by going through brokers, or indirectly by approaching their local banks that have the necessary competence and expertise. In the case of the public sector, the public or semi-public bodies that act as marketing boards or *caisses de stabilisation* would be able to take on the role of risk manager. Accordingly, they are going to analyse and assess the market risks and gather useful information so as to take appropriate measures to manage these risks and at the same time help certain players in the private sector.

15. The advantages provided by risk management instruments apply in theory to all bodies (public and semi-public sector, marketing boards and *caisses de stabilisation*, private companies, cooperatives of planters or small farmers, etc.). It should be noted that these modern types of instruments are not a panacea, for they do not help to stabilize the world coffee market. However, they certainly help to deal with an already unstable market and thereby adapt to the instability of the market. Coffee growers or their cooperatives as well as manufacturers and agents in developing countries have relatively little recourse to these modern financing and risk management instruments. Even though they know of the existence and the potential advantages of these instruments, they encounter a certain number of obstacles in accessing the markets. Although these risk management tools offer advantages, the difficulties faced by the players in the agricultural chain in developing countries should not be forgotten. One must learn how to use these tools properly, and moreover there are other constraints, among which the following may be mentioned:

Lack of suitable technical training

16. A number of players in the private sector who are now active in the commodity chains in exporting countries have very little experience of international trade.

Consequently their knowledge and understanding of the risk management methods for commodities and financing are limited. An effective use of these instruments requires an apprenticeship through training programmes and seminars.

Institutional weaknesses

17. Almost all local banks in the developing countries have no experience of commodities financing and are thus unable to advise their clients on the practices and techniques of modern risk managements. However, the initiative of a regional bank, namely the PTA-Bank[3], should be highlighted, which in collaboration with Commodity Risk Management S.A., Cargill and Smith Barney, has launched a price risk management instrument termed PGC (Price Guarantee Contract) for the operators of the agricultural and petroleum chains in East Africa. This initiative deserves to be supported in order to improve and extend it to other exporting countries so as to reduce the costs involved in the use of these instruments.

Transaction costs

18. Transaction costs may also constitute a restraining factor. The price movement may give rise to margin calls, which increase the hedging charges. The use of these tools requires adequate credit lines. It should be remembered that access to credit is very limited in the exporting countries. The local banks have no expertise in financing techniques guaranteed by stocks, nor the system of financing guaranteed by a third party holding. In addition to this, bank interest rates are prohibitive.

19. Moreover, one of the disadvantages of these instruments is that they are complicated and can be used to manipulate the market, which can lead to considerable losses and even bankruptcy. Nevertheless, there are ways of overcoming these difficulties and promoting the use of these instruments by the players in the coffee chain in exporting

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[3] *Cf. PTA-Bank, Eastern and Southern African Trade and Development Bank, Nairobi, Kenya.*

countries. As a matter of fact, unfortunate experience in the past has forced these markets to take strict measures to ensure that risk management instruments are properly used. Futures markets therefore have a clearing house that handles the processing and execution of the transactions and the successful completion of commitments concerning contracts bought or sold by the participants. The market clearing house authorizes and can disallow transactions and monitors daily the settlement and calculation of the margin calls of all the market operators. It is thus the keystone to the security and integrity of the system and imposes sanctions on abuses and improper practices, including price manipulation and disseminating false information in order to upset and distort dealing between operators so as to falsify the prices and destabilize the market. Other precautions have also been taken by the clearing house. For example, the financial intermediaries have to monitor their clients' accounts so as to determine the size of the commissions as well as the level of risks and losses. These intermediaries should also update information given to their clients and carefully monitor the responsibilities of the staff.

III. CONCLUSION AND ROLE OF THE INTERNATIONAL COFFEE ORGANIZATION

20. Modern portfolio management involves the use of risk management instruments in order to limit the risks and improve export earnings. Much still remains to be done in this regard. The complexity inherent in this field possibly makes it even more difficult to employ these instruments. Once all the operators, either because of the inevitable influx of a younger generation of professionals, or the situation imposed by the market itself, have familiarized themselves with these instruments, we shall see the widespread use of these instruments by the players in the agricultural chains in exporting countries. Given this prospect, what role can the International Coffee Organization play?

21. A large range of supporting activities is necessary in order to meet the needs of developing countries in the area of commodity risk management. The experts have repeatedly highlighted the role played by the World Bank and UNCTAD, which have

already analysed the situation and provide advice in these fields. In this regard the UNCTAD experts have recommended, among other things, that Governments establish suitable conditions for the efficient utilization of modern financial instruments by producers or their cooperatives, brokers, processing companies, financial institutions and investors in the commodities sector. Transactions in these futures markets should also be protected and ring fenced by appropriate legal, regulatory and institutional measures so as to avoid difficulties associated with exchange regulations and control. Governments should also try to ensure that the pricing policy and commercial policy are compatible with the use of risk management instruments.

22. In the same way as these two major development institutions and other international commodity organizations, the International Coffee Organization might be able to act as an intermediary between the bodies offering these instruments and the users in the coffee exporting countries. Among other activities, the ICO could act as a source of information on risk management techniques and promote seminars and training sessions on the techniques and practices of these modern instruments, since a good knowledge of these instruments is essential for the private sector, now facing the competitive challenge of the international market. The local banks and the producers' associations or cooperatives have an important role in promoting these instruments. The International Coffee Organization might therefore be able to help improve the competence, expertise and facilities of these two groups. In this connection it could attract financing from backers in order to promote suitable projects. The Organization should also follow the heated debates in the World Bank and UNCTAD so as to keep its Members abreast of progress in this matter. It is against this background that this introductory paper has been written, in order to provide a summary of current thinking on this important matter.