



**International Trade Centre**

Product and market development



# *Cocoa*

*A guide to trade practices*







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# *Cocoa*

## *A guide to trade practices*

Geneva 2001

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Guide describing trade and industry practices, as well as regulations applying to cocoa – traces customs procedures, systems and techniques used at each stage of the cocoa supply chain; reviews trends in cocoa manufacturing and processing, electronic commerce, cocoa organic farming, fair trade, sustainable production and environmental issues; also provides list of main sector-related trade and industry associations; appendices contain detailed statistical data and list of relevant Internet websites.

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# Contents

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Acknowledgements	iii
<b>Introduction</b>	<b>1</b>
<b>PART ONE</b>	
<b>PRODUCTION AND SUPPLY</b>	<b>3</b>
<hr/>	
<b>CHAPTER 1</b>	
<b>Cocoa production</b>	<b>5</b>
Cocoa growing	5
Main factors in cocoa production	5
Smallholder farming	7
Weather and disease	7
Sustainable production	8
Main producing countries	9
Côte d'Ivoire	10
Ghana	10
Indonesia	11
Nigeria	12
Brazil	12
Cameroon	13
Ecuador	14
Malaysia	14
Box 1      Varieties of cocoa	5
Box 2      Bean types	6
Box 3      'Cacao' or 'cocoa'?	6
Box 4      Harvest seasons	8
Table 1    World production of cocoa beans, by country, by quantity and as percentage of total, 1990/91-1999/00	9
<b>CHAPTER 2</b>	
<b>Historical development of cocoa supply</b>	<b>16</b>
Shifts between countries in the twentieth century	16
Cocoa booms and crises	17

Shifts within countries	18	
The mechanics of the cocoa cycle	18	
Price cycles	20	
Future projections	20	
Figure 1	World production of cocoa in the twentieth century	18
Table 2	Cocoa production, by region and by quantity, projections to 2005	20

### CHAPTER 3

## Economic importance of cocoa to producing countries 21

Social and economic impact	21	
Value adding through processing	21	
Export earnings from cocoa	22	
Côte d'Ivoire	23	
Ghana	23	
Nigeria	23	
Cameroon	24	
Brazil	24	
Ecuador	24	
Malaysia	24	
Indonesia	25	
Summary	25	
Table 3	Cocoa-derived exports from selected countries, by value, over five-year periods from 1971 to 1997	22
Table 4	Cocoa-derived export earnings, percentage share in total exports by country, 1971-1997	23

### CHAPTER 4

## Marketing methods at origin 26

Free markets	26
Improved access to information	27
Purchasing schemes	27
Pros and cons of the free market system	28

### CHAPTER 5

## Fine or flavour cocoa 29

High-quality chocolate	29	
Niche markets	30	
Box 5	Light breaking and dark breaking beans	30
Table 5	Fine and flavour cocoa: annual production, by country and by quantity, 1988/89-1998/99	30



**PART TWO****EXPORTING AND SHIPPING**

31

**CHAPTER 6****Shipping cocoa beans**

33

From farm to export point	33
Producing good quality	34
Assessing quality	35
Sampling	36
Methodology of analysis	36
Supervision at departure	39
Assurance of contractual performance	39
Payment	39
FOB sales	40
Post payment	41
Weights	41
Quality	41
Infestation	41
Condition	41
Marine transport	41
Physical elements	42
Documentary elements	42
Modes of shipment	42
Marine insurance	44
FOB and CFR sales	44
CIF sales	44
Phytosanitation	46
Fumigation	46
Cooperation between exporter and importer	49
Supervision on arrival	49

**CHAPTER 7****Post-harvest treatment of cocoa**

51

Maintaining quality	51
Pest control	52
Current practices	52
Potential alternatives	53
The need for change	55

**CHAPTER 8****Standard contracts**

57

Current standard contracts	57
Two approaches	58
The most important clauses	59

**CHAPTER 9****The cocoa trade in importing countries 61**

The importer's role	61
An exporter's first sale	62
Classifications and import duties	63
Box 6 Who is who in the trade	62
Box 7 Cocoa beans and products in the Harmonized System	64

**PART THREE****COCOA TRADING 65**

---

**CHAPTER 10****Characteristics of a commodity exchange 67**

Long history	67
Physical and futures markets	68
The physical market	68
The futures market	69
Futures commission merchants	72
Cocoa options	73
Hedging: the link between physical and futures markets	73
Examples of hedging operations	74
Box 8 LIFFE and NYBOT	71
Box 9 Daily prices of cocoa beans	72

**CHAPTER 11****Risk management 76**

Physical risks	76
Performance risks (partner risks)	76
Market risks	78

**CHAPTER 12****Regulatory aspects of cocoa trading 80**

Examples from the United states	80
Automatic detention of imports from certain origins	80
Residue tolerances	81
Unauthorized entry of animals and plants	81
Jute and sisal bag specifications	82
Unusual incidents	82

**CHAPTER 13****Financial aspects of cocoa trading 83**

Document trading giving way to added-service trading	83
Working capital	84
Relationships with banks	84

**CHAPTER 14****Arbitration 86**

Quality and technical arbitration	86
Different uses of arbitration	87

**CHAPTER 15****The cocoa trade and e-commerce 89**

Legal framework	89
Electronically through a provider	89

**PART FOUR****PROCESSING AND MANUFACTURING 91****CHAPTER 16****Cocoa processing and chocolate manufacturing 93**

Cocoa processing	93
Chocolate manufacturing	94
Figure 2      The cocoa-processing chain	96

**CHAPTER 17****Processing in producing countries 97**

Obstacles	97
Viable in certain situations	98
Table 6      Grinding of cocoa beans, by quantity and by country, 1990/91-1998/99	99
Table 7      Production, grindings and stocks, by quantity, 1990/91-1998/99	99

**CHAPTER 18****The economics of cocoa processing 100**

Box 10      Profitability of a processing unit – an example	101
Box 11      Tolling	101

**CHAPTER 19**

<b>The Netherlands – an important cocoa processing centre</b>	<b>102</b>
Handling 15% of world production	102

**PART FIVE**

<b>CONSUMER MARKETS</b>	<b>103</b>
-------------------------	------------

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**CHAPTER 20**

<b>Cocoa and chocolate consumption</b>	<b>105</b>
Conversion factors and cocoa bean equivalent	105
Markets	105
Product categories	108
Chocolate	108
Flavour	108
Beverages	109
Cosmetics	109
Table 8 Exports of cocoa products by country/area and by quantity, 1998/99	106
Table 9 Imports of cocoa products by country/area and by quantity, 1998/99	107

**CHAPTER 21**

<b>Germany – a major consumer market</b>	<b>110</b>
Foreign trade in raw cocoa	110
Intermediate cocoa and semi-processed chocolate products	110
Trade with other EU countries	111
The chocolate confectionery industry	111
The consumer market	111

**CHAPTER 22**

<b>Non-cocoa fat in chocolate: EU ruling</b>	<b>113</b>
The 5% rule	113
Cocoa producers' reactions	114

**CHAPTER 23**

<b>Health and nutrition</b>	<b>115</b>
-----------------------------	------------

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<b>PART SIX</b>	
<b>COCOA ORGANIZATIONS</b>	<b>117</b>
<hr/>	
<b>CHAPTER 24</b>	
<b>The main trade associations and industry organizations</b>	<b>119</b>
International Cocoa Organization	119
Cocoa Producers' Alliance	120
Cocoa Association of London	120
Cocoa Merchants' Association of America	121
Fédération du commerce des cacaos	122
German Cocoa Trade Association	124
European Cocoa Association	125
International Office of Cocoa, Chocolate and Sugar Confectionery Industries	126
Box 12      ICCO members as of November 2000	120
<b>APPENDICES</b>	
I.   International cocoa standards: <i>Model Ordinance and Code of Practice</i>	129
II.   Grading standards by country	133
III.   The International Cocoa Agreement: a brief history	136
IV.   New initiatives	143
V.   Useful websites	145
VI.   Statistics	148
<b>GLOSSARY OF TERMS USED IN THE INTERNATIONAL COCOA TRADE</b>	<b>161</b>
<b>INDEX</b>	<b>173</b>



# Introduction

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Cocoa is probably best known today as the raw material for chocolate, which uses approximately 90% of the world's cocoa production. On average, around 3 million tons of cocoa beans are produced each year. In the second half of the 1990s, cocoa-producing countries generated an income of more than US\$ 3 billion annually from exports of cocoa beans and cocoa-based products.

Cocoa is almost exclusively grown in the tropics, mainly on small family and subsistence-level farms. The countries and regions that are blessed with the ideal climatic and environmental conditions for cocoa growing have the opportunity to generate substantial export earnings from the crop, which can benefit their national economies and rural communities. Nevertheless, too much dependence on cocoa as a source of export revenue can sometimes lead to a country's national or regional economy becoming unacceptably vulnerable to the risks inherent in cocoa production.

The international market price of cocoa is notoriously volatile. Crops are susceptible to the ravages of disease and extreme weather conditions. The size of the harvest can vary greatly from one year to the next. The physical shipment of cocoa beans over long distances from numerous smallholdings to the main processing and distribution centres is a complex business – and not without risk. Bulk shipment and storage of cocoa have to be undertaken with extreme care and consideration for the formidable array of international rules and regulations that surrounds it.

To help alleviate some of the price risks for the producer, exporter, importer and processor, a sophisticated system of commodity exchanges exists, with futures markets and appropriate hedging facilities. This system is concentrated in the major financial centres of London and New York.

Some producing countries manage to process significant quantities of cocoa beans locally into semi-finished or finished products but, for various reasons, it has generally proved more practical and economical for this activity to be performed near to the main consumer markets. Producers therefore tend to look elsewhere for ways of adding value to their cocoa bean exports – to the area of land planted with cocoa, the selection of tree varieties, the effectiveness of disease and pest control programmes, the average bean quality of the harvest, post-harvest treatment and support services, etc. The overall efficiency with which the cocoa is brought to market can have a significant impact on a producer's costs and profits.

For anyone wanting to succeed in the cocoa business, thorough knowledge and understanding of the distribution chain, market trends and developments, and the special characteristics of trading and the exchanges are essential.

This guide describes current trade and industry practices, as well as regulations that apply to cocoa. It traces customs, systems and techniques used at each stage of the long cocoa supply chain. The appendices contain detailed statistics and selected listings of Internet websites that provide a vast amount of useful information on many aspects of cocoa. Also covered are some of the trends and

initiatives emerging today – electronic commerce, organic farming, fair trade, sustainable production and environmental issues – all of which are becoming increasingly relevant to cocoa producers and traders.

The guide is designed to inform, assist and inspire the widely spread and diverse producers of cocoa – as well as to help newcomers to the cocoa trade. Its aim is to make a positive difference to the way the market is supplied and thus to the economies of the countries that produce cocoa and to the people whose livelihoods depend on it.



*PART ONE*

*Production and supply*



## CHAPTER 1

# Cocoa production

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## Cocoa growing

The cocoa tree grows best in tropical regions, on a belt between approximately 20° north and 20° south of the equator. Most cocoa is grown at an altitude of less than 400 metres (1,200 feet) above sea level. Ideal temperatures are between 18°C and 32°C (65°F to 90°F). Rainfall should be at least 1,000 mm but not more than 3,000 mm (400 to 1,100 inches) per year. For optimal production, the tree requires protection from direct sunlight and excessive winds.

Cocoa trees can grow to a height of around 10 metres when shaded by large forest trees. The fruit, or pod, is between 15 and 25 cm (6 to 10 inches) long, and contains 30 to 40 seeds, which become cocoa beans when fermented and dried. The pods grow both along the main stem of the tree and throughout the canopy. A cocoa tree becomes productive four to five years after planting and can remain productive for several decades.

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## Main factors in cocoa production

Two factors, above all, influence the supply of cocoa in the short to medium term. One is the area planted with cocoa; the other is the yield from the trees available for cropping.

The world's stock of cocoa trees tends to be grouped, by tradition, into three main varieties – Criollo, Forastero and Trinitario – from which many different hybrids have been, and continue to be, developed.

### ***Box 1***

#### ***Varieties of cocoa***

***Criollo:*** mild-flavour cocoa grown in parts of Venezuela, Central America, Papua New Guinea, the West Indies, Sri Lanka, East Timor and Java.

***Forastero:*** provides the bulk of the 'basic' cocoa beans produced.

***Trinitario:*** found mainly in the West Indies; a cross between Criollo and Forastero.

Criollo-based varieties trace their origins back to Central America, including Mexico. Forastero varieties, accounting for by far the greatest tonnage of cocoa beans harvested, are believed to have originated further south, in the Amazon regions. The main producing countries rely for the majority of their production on the Forastero-based cocoa varieties and hybrids, the beans of which are usually referred to as basic.

**Box 2****Bean types****Basic, bulk, ordinary or normal**

*Different terms are used in different parts of the world by the cocoa trade and industry to denote the same quality of beans that accounts for over 95% of the total tonnage of cocoa produced annually. In the United States of America, the term generally used is 'basic'; in Europe, it is 'ordinary'. The term 'bulk' is sometimes used in both areas, but as the word also refers to cocoa shipped without bags, it is probably best avoided as a standard description of quality. 'Normal' is another term used occasionally.*

*The term 'basic' is used throughout this guide.*

**Fine or flavour**

*Cocoa beans with certain distinctive, sought-after aroma and flavour characteristics, which cannot be achieved by other bean types, are generally referred to in Europe as 'fine'. The more commonly used term in the United States is 'flavor'.*

*The term 'fine or flavour' is used throughout this guide.*

Criollo and Trinitario beans, with some of their hybrids and the Ecuadorian Nacional, have produced what are known as fine or flavour cocoas. Being used almost exclusively for the making of speciality or 'gourmet' chocolate, fine or flavour cocoas have lost much of their commercial significance over the last century, even to the extent that the major trading houses have now ceased to deal in them. These bean types could have, nevertheless, some interesting niche market opportunities, particularly for smaller producers and traders. (See chapter 5 of this guide.)

Cocoa trees are capable of producing acceptable yields for several decades. Depending on the variety, it can take between eight and ten years for yields to peak, with the newer hybrids reaching their peak more quickly. The pace of decline thereafter is determined mainly by cultivation practices.

The majority of Forastero cocoa trees planted today are hybrids either of several Forastero varieties or of a mix of Criollo and Forastero. Hybrids are preferred because they are more resistant to known diseases and they yield a higher tonnage per hectare. For example, where a cocoa farm cultivated under the traditional system of minimal maintenance may typically yield 300 to 500 kg per ha annually, newer hybrids cultivated commercially under ideal farming conditions have been known to yield as much as 2,500 kg per ha.

Historically, the pattern of global cocoa production has been marked by periods of contraction, followed by periods of stabilization and then of rapid expansion. Within these trends, however, there have been factors which have provided

**Box 3****'Cacao' or 'cocoa'?**

*There is often confusion as to when the word 'cacao' should be used and when the word 'cocoa' is more appropriate. No general rule is applied consistently. Some use the term 'cacao' when describing the scientific and horticultural aspects of the plant, switching to 'cocoa' once the bean has been fermented and dried. Both terms are correct at any time and are virtually interchangeable.*

*'Cocoa' is the term used throughout this guide.*

some balance to the overall supply picture. For example, at the time production levels were declining in certain traditional growing areas such as Brazil, Ghana, Nigeria and Cameroon – mainly owing to a combination of unfavourable economic conditions and crop disease – strong expansion was taking place in other countries such as Côte d'Ivoire and Indonesia.

### Smallholder farming

Typically, cocoa is produced by smallholder or family subsistence farming. In West Africa, for example, many farms will have less than a hectare under cocoa. The same is generally true of South-East Asia, and of Indonesia in particular. There are exceptions, however. Some large cocoa farms can be found in Brazil and Ecuador, and plantations exist in Malaysia. Cocoa growing is not an especially labour-intensive activity, but at the same time it is ill-suited to mechanization. A large plantation, therefore, while probably yielding more per hectare than the subsistence farm, tends to operate on higher costs and finds profitability difficult to achieve when FOB (free on board) prices are below, say, US\$ 1,000 per ton. Other plantation crops, such as rubber or oil palm, may then represent a more attractive proposition for these particular farmers.

Harvesting cocoa consists of plucking the ripe pods from the trees, breaking them open, extracting the seeds from the pods, allowing them to ferment, and setting them out to dry – preferably in the open air and in sunshine. The dried seeds are bagged and brought to market as 'cocoa beans'. On some larger plantations this natural drying process may be assisted or even totally replaced by the use of artificial heat. When the cocoa is dried artificially, however, without the proper aeration, the acetic acid present in the beans does not have the chance to escape fully, rendering them more acidic and thus less acceptable.

### Weather and disease

The main problems encountered by cocoa crops are adverse weather conditions and disease, which are often interrelated and capable of seriously restricting production. Generally speaking, the successful production of cocoa beans requires an evenly spread rainy season and plenty of sunshine (though the plant itself, having originated in the depths of the tropical rain forest, actually prefers shade). Where such ideal conditions exist, as in Costa Rica, for example, there is a harvest practically every month. Countries with pronounced dry and wet seasons normally show two harvests a year, a main crop and a mid-crop. The relative sizes of these crops depend on how long the wet seasons last. A pronounced drought, or a long cool, rainy season, will have a major impact on the total tonnage produced – and on prices. Further details are provided in box 4.

Among the most damaging diseases are witches' broom (*Crinipellis pernicioso*), black pod (*Phytophthora palmivora*, *P. megakarya*), monilia (*Moniliophthora roreri*), the cocoa swollen shoot virus (CSSV) and, in the Pacific area, vascular streak dieback. Except for CSSV, these diseases are caused by fungi and can be treated to some extent by fungicides.

Crops in a number of producing areas also suffer damage from pests. In West Africa and, to a lesser degree, in Latin America, mirids (capsid) cause crop losses. In the Pacific area, including Indonesia and Malaysia, the cocoa pod borer (the larva of a small moth) is a major enemy.

Sufficient scientific knowledge exists today to find solutions to most of these problems, but there are obstacles standing in the way of their application. The social and economic infrastructure in a particular cocoa-producing area often presents the greatest barrier. Moreover, some measures, such as saturation spraying, are no longer ecologically acceptable, while others are simply too

**Box 4****Harvest seasons**

*Cocoa production is highly seasonal. Almost every producing country goes through two crop collection periods: the main crop and the intermediary crop (the latter is also called the mid-crop). The relative size of the mid-crop varies from country to country. It may contribute around 10% of annual production in Côte d'Ivoire, for example, or as much as 40% in some other countries.*

<b>Country</b>	<b>Main crop</b>	<b>Mid-crop</b>
Brazil	October–March	June–September
Cameroon	September–March	May–August
Côte d'Ivoire	October–March	May–August
Ecuador	March–June	October–February
Ghana	September–March	May–August
Indonesia	September–December	March–July
Malaysia	September–February	March–May
Nigeria	September–March	May–August

expensive to be practical. In cocoa-producing areas, the extension services, which advise farmers on these matters and which are usually the responsibility of local government, typically suffer from shortages of both staff and funds. A further limiting factor is a lack of proper husbandry and farm sanitation.

Scientists therefore continue to search for alternative methods. The most generally acceptable solution at present appears to be the replanting of affected areas with disease-resistant and pest-resistant hybrids. Many cocoa-producing regions have set up breeding and propagation programmes devoted to the distribution of the new plant varieties. Other measures now being employed include biological controls, such as the release of predatory insects which feed on pests, or the encouragement of fungi to inhibit the growth of disease. Another approach being closely studied is that of combining different methods into integrated disease and pest management regimes.

## Sustainable production

There is considerable disagreement within the scientific, economic and policy communities on the precise meaning of 'sustainable development' and many definitions are used. As far back as 1987, the United Nations World Commission on Environment and Development came up with a definition that is commonly accepted and widely used today. It was included in what became known as the Brundtland Report and states that: '...sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.

During the late 1990s, much interest was generated in the concept of sustainability in the cocoa economy, focusing particularly on sustainable methods of cocoa production. This led to the signing of a declaration of intent in March 1999, in Paris, by a number of bodies involved in the cocoa market. To a large extent, the declaration is based on the Sustainable Cocoa Program (SCP) developed by the industry-sponsored American Cocoa Research Institute (ACRI) in collaboration with other parties. The vision is to secure a sustainable supply of cocoa within 10 years, with emphasis on economics, and social and environmental improvements.

The International Cocoa Organization (ICCO) is also developing a sustainable cocoa economy programme, in association with its members. This includes work on both the production and the consumption side of the market. ICCO

has set up a mechanism for coordination and exchange of information among the many parties involved in the research, in the hope that as much as possible will find its way through to practical field application.

Further information on the Sustainable Cocoa Program and other sustainability initiatives can be found on some of the websites listed in appendix V.

## Main producing countries

91% of world production  
from eight countries

During the 1998/99 crop year (October through September), the world produced 2.81 million tons of cocoa beans. Some 2.56 million tons, or 91%, were produced by just eight countries, as shown in table 1. The West Africa region alone produced 1.92 million tons, or two-thirds of the world total.

	1990/91		1995/96		1998/99		1999/00 a/	
	'000 tons	%	'000 tons	%	'000 tons	%	'000 tons	%
Côte d'Ivoire	804	32	1 200	41	1 163	41	1 325	44
Ghana	293	12	404	14	398	14	440	15
Indonesia	147	6	285	10	390	14	410	14
Nigeria	170	7	158	5	198	7	165	5
Brazil	380	15	231	8	138	5	125	4
Cameroon	107	4	135	5	124	4	120	4
Ecuador	104	4	103	4	75	3	95	3
Malaysia	224	9	115	4	75	3	60	2
<i>The eight</i>	<i>2 229</i>	<i>89</i>	<i>2 631</i>	<i>90</i>	<i>2 561</i>	<i>91</i>	<i>2 740</i>	<i>91</i>
Other countries	281	11	282	10	247	9	263	9
<b>WORLD</b>	<b>2 510</b>	<b>100</b>	<b>2 913</b>	<b>100</b>	<b>2 808</b>	<b>100</b>	<b>3 003</b>	<b>100</b>

Source: ICCO.

a/ Estimates.

In the early 1970s the four largest cocoa-producing countries were Ghana (400,000 tons, rounded average), Nigeria (250,000 tons), Côte d'Ivoire (200,000 tons) and Brazil (200,000 tons).

Such a concentration in one part of the world – the tropical rain forest belt extending from Sierra Leone to Cameroon – raises the spectre that some climatic event on the scale of an El Niño could affect the whole area and lead to a major crop disaster. The industry has therefore welcomed production expansion in other areas, such as the Pacific region, as a means of bringing a better geographical balance to the cocoa supply base.

In order of annual production size, the eight largest cocoa-producing countries at present are Côte d'Ivoire, Ghana, Indonesia, Nigeria, Brazil, Cameroon, Ecuador and Malaysia.

## Côte d'Ivoire

41% of world cocoa  
production

Côte d'Ivoire harvested 1.16 million tons of cocoa beans in the 1998/99 crop year, accounting for around 41% of world production. The 1999/00 harvest was about 1.32 million tons.

Côte d'Ivoire's production growth was fostered by a government policy in the 1970s that favoured the agricultural sector, and specifically cocoa. Suitable planting material was distributed and advice given on how to grow and harvest cocoa. In parallel, a government marketing system was formed to move the cocoa from the farm to world markets.

In Côte d'Ivoire, while some larger plantations do exist, it is estimated that over 90% of the crop is produced on subsistence farms. Originally, the cocoa was purchased by representatives of exporting firms and brought to receiving stations, where it was bagged and graded for export. The price was fixed for one season ahead of time and the Government, through its stabilization fund (the Caisse de stabilisation des prix des produits agricoles or CAISTAB), absorbed the difference between the farmers' price and the price obtained in world markets.

The Government has since restructured these internal and export marketing systems for both coffee and cocoa, giving them injections of more private-sector participation and investment. It has also put in place a sustainable land and crop development programme, incorporating integrated pest control and soil management techniques. This is part of the Sustainable Cocoa Program discussed earlier.

The cocoa produced in Côte d'Ivoire is of the Forastero variety. The beans are basic in terms of flavour. Their colour is akin to the world standard (Ghana), but they are generally less well fermented and slightly higher in acidity. Prone to certain defects, including mould, germination and insect-damage, the beans also tend to be somewhat on the small side.

Côte d'Ivoire has long been attracted to the idea of adding value to its cocoa exports by capturing the cocoa-processing margin. Inherently, however, it is difficult for cocoa-producing countries to compete with the efficient large-scale processing operations in Europe. The country's processing industry – which has a capacity of around 350,000 tons of cocoa bean throughput annually – continues to be subsidized by being given access to cheaper cocoa beans as well as special tax incentives. Nevertheless, the actual volume of local grindings of cocoa beans in 1998/99 is estimated to have reached 225,000 tons.

## Ghana

14% of world total

With an output of 398,000 tons of cocoa beans (virtually all Grade One) in the 1998/99 crop year, Ghana accounts for around 14% of the world total. In the 1960s it was the world's largest producer.

Ghana has a long tradition of cocoa cultivation. Proper farming and post-harvest treatment practices are diligently observed and passed on from generation to generation of subsistence farmers. It is probably for these reasons that Ghana enjoys a certain reputation for its cocoa. Ghana cocoa is recognized as the standard for basic grade cocoa, with its uniform size, optimal fermentation, absence of defects, high nib-to-bean ratio and high fat content.

Three major diseases present problems: the cocoa swollen shoot virus (which has some particularly pernicious strains not present in other West African countries), black pod and mirids (capsid). There has been a noticeable increase in the especially virulent black pod strain of *Phytophthora megakarya* during recent years, which is causing some concern among experts.



Swollen shoot is a West African phenomenon. It is carried by mealy bugs and is the only virus known to cause significant damage to cocoa. The bugs feed on cocoa and numerous other local host plants which have managed, over time, to build up a resistance to the virus. Some years ago the Government made a serious attempt to prevent the spread of the virus from east to west by ordering a cordon sanitaire, or cocoa-free belt, to be created across the country. With so many alternative host plants available, however, the belt failed to deter the spread of the virus.

At present, the only remedy showing any real promise of positive results is the development of disease-tolerant varieties. The newer Amazon Crosses, for example, which are bred to replace the traditional Amelonado variety, appear to be able to survive better.

Ghana's somewhat drier climate offers less opportunity for the black pod fungus to form. This particular disease is therefore not such a problem there as it is in some neighbouring countries.

On the other hand, the fight against Ghana's third major cocoa disease problem, mirids, has turned into something of a running battle. Damage is particularly severe during dry spells and to trees already weakened by swollen shoot. This is exacerbated by breaks in the cocoa canopy, thus increasing the likelihood of attack. The main defensive weapon being used is selective spraying with insecticides. Now, the search for an environmentally acceptable bio-control technique is being pursued as a matter of urgency because:

- The number of insecticides authorized for use is diminishing.
- The ability of science to detect even modest levels of pesticide residue is increasing.
- The insects themselves are building up a resistance to the control methods and substances being used.

Ghana's cocoa is purchased by the Cocoa Marketing Board (Cocobod), either through licensed private intermediaries or through its own purchasing agency, at a price fixed for the season. Cocobod is the country's sole seller of cocoa to the international market. It absorbs the difference between the price paid to the farmers and that obtained in world markets. There are some pressures for purchasing and marketing to be privatized.

Ghana has a small processing industry which converts some beans into cocoa butter and cake. Factories have not done well, however, mainly owing to a lack of spare parts, some lengthy power failures and the scarcity of suitable beans. On occasion, therefore, Cocobod has entered into tolling agreements with cocoa processors in Europe. (For a detailed description of tolling, see chapter 18, box 11.)

## Indonesia

From 58,000 tons to  
390,000 tons in 10 years

Indonesia's total acreage under cocoa expanded rapidly during the 1990s. From only 58,000 tons in 1987/88, production grew in each of the next 10 years, to reach 390,000 tons in 1998/99.

Further expansion has now been slowed, however, by the effects of the cocoa pod borer, which has reached Sulawesi and is to be found practically everywhere throughout the Malaysian and Indonesian cocoa-producing area. Historically, fine or flavour cocoa was produced in Java and East Timor, but again production has been restricted by the presence of the cocoa pod borer.

Although, at first, farmers simply abandoned infected farms and went elsewhere to plant up new ones, efforts to fight back are now being made by government

and private entities, using both chemical insect control and improved farm sanitation methods. It has been demonstrated that infestation can be controlled through the better timing of harvesting, the planting of less susceptible cultivars and (possibly) the use of biological controls (black ants, parasitic wasps, etc.). It is generally considered normal for low-level infestation to cause a crop loss of up to 10%. A loss of this order would be comparable to that suffered elsewhere as a result of other diseases and pests such as black pod and mirids.

Farmers get up to 90% of the market price

Another factor in the expansion of cocoa production in Indonesia has been the free marketing system of bringing the crop to market. This has allowed farmers to earn up to 90% of the international market price.

While total tonnage has grown rapidly, however, standards of post-harvest care and treatment have been allowed to decline. Indonesian cocoa beans are considered somewhat below the quality of standard West African cocoa. Nevertheless, they do find a ready outlet at a discount on futures markets. Processing innovations adopted by major cocoa grinders, particularly in the United States, also ensure an acceptable level of demand.

## Nigeria

Nigeria used to be the world's second most important cocoa producer, after Ghana. It also exported a bean quality second only to well-fermented main-crop Ghana cocoa. Marketing was tightly controlled by the Nigerian Produce Marketing Board, which paid a fixed price to farmers and sold the cocoa at world market prices.

Towards 200,000 tons

The good reputation of Nigerian cocoa was seriously damaged during the early 1990s by a combination of two years of poor weather conditions and the internal disruption of its cocoa exporting and distribution systems following the closure of the Marketing Board. Annual production was running at 170,000 tons in 1990/91 but in just two seasons it dropped to 130,000. It has since recovered and now appears to be on its way back to 200,000 tons. It was not until the late 1990s that the Government, farmers' organizations and the private sector together established a new quality modus operandi. Nigerian cocoa beans are now beginning to regain their previous reputation.

Nigeria has also been attracted to the concept of adding value to its cocoa beans by processing them locally for export as butter, cake and powder. Several factories were built, often with loans or help in the form of export subsidies from countries supplying the equipment. One operated successfully under the previous Marketing Board but many failed, not least because of their inherent dependence on subsidies.

## Brazil

According to some sources, cocoa may have originated in the Amazon region of Brazil, specifically the States of Pará and Amazonas. From there it was introduced into the State of Bahia, where Brazil's original capital was located. A cocoa boom developed, and some large farms were established. Brazil's cocoa crop, however, has proved particularly vulnerable to black pod, a disease that, at times, has affected as much as 30% of the pod population.

The most common variety of cocoa planted is the *Cacau comum*, recognizable by its smooth yellow pod and rather dark and pungent bean (when properly fermented and dried). It has an average bean count of 91 to 100 per 100 grams in a good crop year. With the Bahia cocoa zone being geographically on the fringe of the cocoa belt, its crops are more often affected by adverse weather

conditions than those in the more typical cocoa-growing areas of Latin America, Africa and the Pacific. As the rainy season tends to be cool, conditions favour the development of black pod disease.

In the 1980s, through its financing, research and development agency CEPLAC (Comissão Executiva do Plano da Lavoura Cacaueira) and funded by levies on the trade of cocoa, the Government embarked on a major effort to expand cocoa cultivation, concentrating on such areas as Espírito Santo, Pará and Rondônia. Production increased significantly to a peak of about 380,000 tons in 1990/91, then subsequently fell to 138,000 tons in 1998/99.

The rapid expansion of planting in Rondônia, however, had to be stopped because the particular tree varieties planted were not sufficiently resistant to the witches' broom fungus (*Crinipellis pernicioso*), endemic to the Amazonas areas (of which Rondônia is a part). Moreover, inadequate quarantine measures allowed the fungus to spread practically uncontrolled into the Bahia area, where it caused a major catastrophe. Farm productivity in the affected areas dropped by as much as 90%. Little was known about remedies and many farmers simply abandoned their farms (causing the infection to spread even further), planted alternative crops, or switched to raising cattle.

The traditional cocoa exporting community collapsed. Firms and major producers went bankrupt and processing plants moved out, closed or severely reduced their activities. Production had fallen to 138,000 tons by 1998/99. To keep some of the factories running, particularly those owned by foreign investors, Brazil was forced to import cocoa beans from Africa and Indonesia.

Disease reduced production  
from 15% to 5% of the  
world total

## Cameroon

Cameroon is considered part of the West African cocoa belt and has been a cocoa-producing country for over 100 years. Believed to have come originally from a Trinitario strain, Cameroon cocoa is slightly different from the regular West African basic bean. It has a darker, more reddish break and a more pungent flavour. It tends to be preferred by the European cocoa-pressing industry for its higher-than-average cocoa butter content. Furthermore, it can be processed into a highly prized red powder, which is used as a colouring and flavouring agent in the dairy and baking industry.

The main diseases which Cameroon's cocoa crop has to contend with are black pod and mirids (capsid). Because of the high ambient humidity and the comparatively high altitude of the cocoa belt, the nights are on the cool side, and this combination favours the growth of fungus. Cameroon cocoa beans, if not exported on time, also have a particular tendency to become mouldy and this has been a major obstacle to finding them markets in the United States. Exporters were not willing to risk rejection by the United States Food and Drug Administration (FDA).

From the mid-1940s cocoa export marketing was controlled by a government organization similar to Côte d'Ivoire's Caisse de stabilisation, called the Office national de commercialisation des produits de base. This guaranteed farmers a stable price for a season and assumed price risks in the international market. Occasionally, Cameroon's ample oil revenues were tapped to maintain farmers' prices above world market levels. This system, however, was abolished in 1991 and replaced by the National Coffee and Cocoa Board, which was to facilitate the change-over to full privatization.

The short-term result was that standards of export quality and marketing declined and, with no great support, annual production volume also eventually started to fall back from a peak in 1995/96 of some 135,000 tons. Production in 1998/99 was 124,000 tons.

4% of world total

The situation has now stabilized. The fewer but larger exporters remaining have direct links with the European processing industry. Quality is improving. Moreover, with the assistance of international donors, Cameroon has embarked on a pilot scheme for sustainable cocoa cultivation, which is showing promise.

## Ecuador

Largest producer of fine or flavour cocoas

For a long time, Ecuador has been, and remains, the world's most important producer of fine or flavour cocoas. The traditional, distinctive flavour known as Arriba, particularly sought after by makers of fine, high-quality chocolate, is a special characteristic of the Cacao Nacional variety of beans, native to Ecuador.

The prevalence of certain diseases, however, such as ceratocystis, witches' broom and monilia, led to the decimation of the original Nacional tree population. This was replaced with new, more disease-resistant cultivars brought in from plant-breeding centres in Costa Rica and Trinidad, with the result that the traditional, distinctive flavour is more difficult to find.

The local cocoa research and development services are distributing new selections of seedlings of the Nacional variety, said to be resistant to both monilia and witches' broom. Commercial interests and the farmers themselves favour a selection known as CCN-51, which has demonstrated its resistance to witches' broom (the Ecuadorian strain, not the Brazilian) and is a good producer. It appears, however, that CCN-51 is susceptible to monilia after all – in addition to not having the traditional Arriba flavour.

Ecuador's production reached 104,000 tons in 1990/91. It held up at around 90,000 tons until 1997/98, when the effects of El Niño caused the crop to fail. Only 30,000 tons were harvested that season, but it has fully recovered since.

The 1997/98 crop failure was devastating for growers, exporters and processors alike. Ecuador was also in the grip of a severe economic and financial crisis at the time, with many farmers and exporters unable to obtain financing, either because their deposits were frozen or credit was simply unobtainable.

Finding itself short of beans, the local grinding industry, which traditionally absorbed about half of Ecuador's own crop, was forced to import cocoa from Indonesia. The industry originally produced cocoa liquor for export to the United States, and subsequently cocoa butter, powder and cake for Latin American markets. It was found, however, that it was not able to impart the typical Arriba flavour to these intermediate products. Consequently they could not command the premium prices which high-flavour beans would normally be expected to achieve.

Chocolate as a drink has been popular in the Andes for centuries and there is a small, but steady, demand for cocoa products throughout Latin America. In addition to the cocoa-processing industry concentrated in the Guayaquil area, therefore, domestic grinding activities in the Ecuadorian Andes account for perhaps another 700 tons annually.

## Malaysia

Cocoa production on the Malaysian peninsula dates back to the late eighteenth century, but in those days it attracted little attention. It was in the 1950s that the British, faced with the outbreak of swollen shoot disease in cocoa crops in West Africa, sought to develop an alternative area of production, and looked towards Malaysia. The island of Borneo offered a suitable soil and climate and a

cooperative venture was set up involving the Colonial Development Company, later known as the Commonwealth Development Company (CDC). A cocoa research and propagation station at its Bal Plantation in Sabah was established.

The station developed seedlings especially suited to Borneo and, from there, planting expanded quickly. Cocoa was grown intensively, without shade but with fertilizer, on large plantations. From Sabah, serious cocoa growing then spread to the Malaysian mainland, where similar plantations were established, based on the West African Amelonado/Forastero varieties.

Starting from a base of less than 1,000 tons in 1979, the Malaysian annual cocoa bean production increased rapidly, peaking at 240,000 tons in the 1989/90 season. The crop then suffered from the combined effects of the spread of the cocoa pod borer (*Conopomorpha cramerella*) and unfavourable local economic conditions. Cocoa found it difficult to compete, as a crop, with other more profitable products such as palm oil. Many plantations were converted or closed, including Bal. The 1998/99 harvest was just 75,000 tons.

The domestic output of 75,000 tons was nearly all processed locally

The rapid growth of bean production spawned a large processing industry, supplying Europe, the United States and Asia, with cocoa butter and cake. It is estimated that the local processing capacity exceeds 100,000 tons annually. With falling levels of local production, however, the industry has had to import cocoa beans from Indonesia and elsewhere to keep its factories going.

Now, with new methods of controlling the pod borer being developed and deployed, and with less competition from other crops, the downward trend of Malaysian cocoa seems to have been reversed. It is developing again, less on plantations and more on sustainable smallholder farms.

The Malaysian Cocoa Board, a government organization, conducts scientific research on cocoa but is not involved in marketing. Another government agency, the Federal Agricultural Marketing Authority, sets standards and supervises grading (except in Sabah, where this remains a voluntary activity). Growers are free to sell where they choose and to obtain the best price they can. The export business in raw cocoa beans remains small because such a high proportion of production is processed locally.



## CHAPTER 2

# Historical development of cocoa supply

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The cocoa plant is indigenous to the tropical rain forests of South and Central America and the origin of the genus *Theobroma* appears to have been to the east of the Andes. The earliest evidence of its use for culinary purposes is in the pre-Columbian era in Central America where the Mayan civilization prepared and consumed a chocolate-type drink. Later it became a favourite drink of the Aztec nation, in Central America. Its movement beyond this area, eventually to encompass the globe along the humid tropical belt, started with the Spanish conquest of the region in the sixteenth century. Chocolate subsequently became accepted in the Spanish court and later spread throughout Europe.

Increasing demand for cocoa in Spain led to the introduction of the tree species into a number of Spanish colonial territories during the early part of the seventeenth century. Cultivation was established in the areas now known as the Dominican Republic, Trinidad and Tobago, and Haiti in the West Indies, Ecuador in South America, and on the island of Fernando Po off the western African coast. Later in the century, merchants from other European nations, in particular France, England and the Netherlands, responded to growing demand by introducing cocoa trees to other islands of the Caribbean and into parts of South America, including Brazil. At that stage, apart from a minor presence on Fernando Po, cocoa remained a crop cultivated exclusively in the region known today as Latin America (encompassing Central and South America and the West Indies). In the eighteenth century, Venezuela was the most important producer, with trade from that country under the control of the Dutch.

The next stage of expansion of cocoa cultivation into other parts of the world began in earnest in the nineteenth century. The most significant development was the introduction of the crop to many parts of western Africa. Initially, cultivation was started with planting material from Brazil on the islands off western Africa: Principe, São Tome and again Fernando Po. From there, cocoa was introduced to the mainland, eventually leading to successful developments in Ghana and Nigeria in the latter part of the century. Also in the nineteenth century, the crop was introduced into Asia (various territories in and around the Pacific and Indian Oceans), and into parts of East Africa.

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## Shifts between countries in the twentieth century

In the early twentieth century, cocoa was still predominantly produced in the Americas: Ecuador, Brazil, and Trinidad and Tobago being the largest producers. The only production of any significant volume to have developed outside this region was in Sao Tome and Principe. This was soon to change, however, with the rise of what was ultimately to become the dominant region for cocoa production in the remainder of the twentieth century, West Africa. African production started to overtake that from the Americas as early as 1920. At that time, Ghana (then the Gold Coast) alone was producing over 100,000

tons a year, a volume that had not been even remotely approached by a single country before.

Ghana remained the world's largest producing country until the late 1970s, when it was displaced by its neighbour to the west, Côte d'Ivoire. Production in Côte d'Ivoire continued to grow inexorably over the next 20 years, such that in the latter half of the 1990s it was consistently harvesting over 1 million tons a year – another landmark for a single country in the history of cocoa production.

The last two decades of the twentieth century also saw rising production in South-East Asia, first in Malaysia, and later in Indonesia. Returning plantation workers from the Malaysian mainland established smallholder cocoa farms initially in Kalimantan (Borneo) and then on the island of Sulawesi (Celebes), where forest land was being cleared by timber companies. These areas were ideally suited to the planting of smallholder cocoa. Recently, in fact, the Asia/Oceania region overtook Latin America to become the world's second largest cocoa producer.

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## Cocoa booms and crises

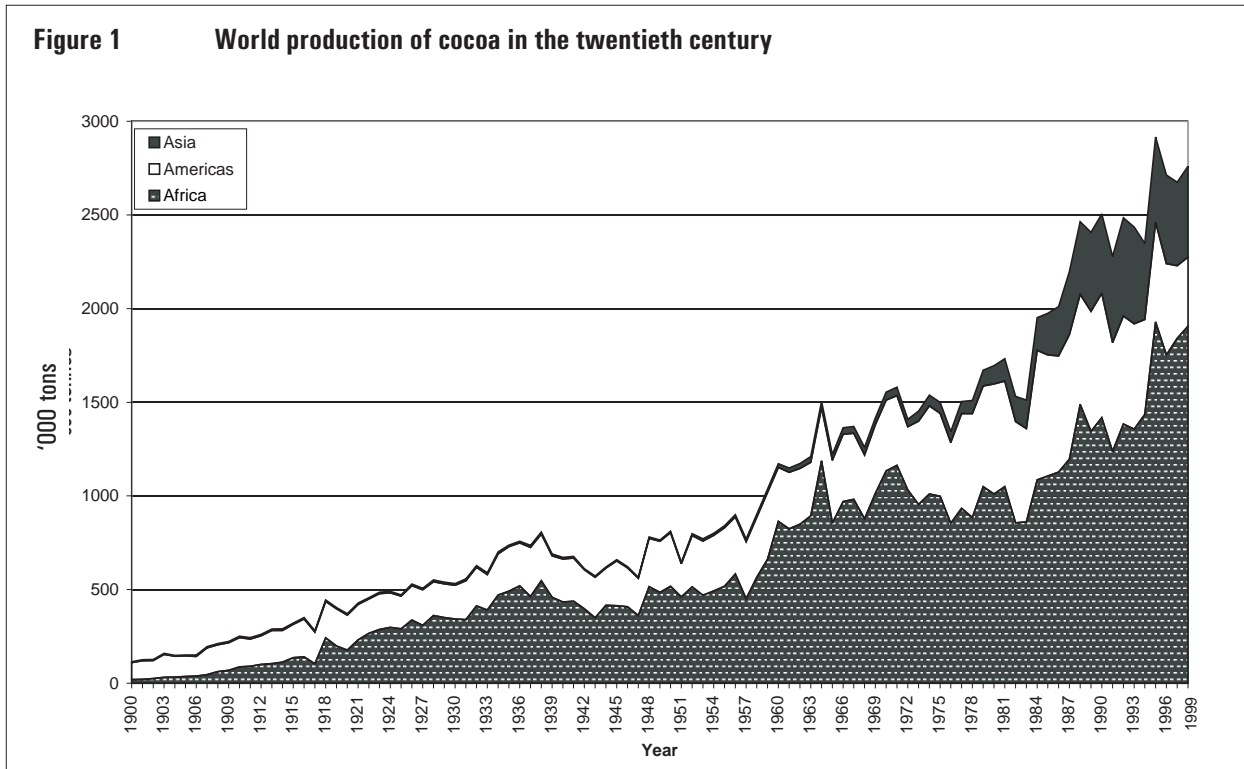
World production of cocoa throughout the twentieth century is shown in figure 1. The enormous growth over that time has not been at a consistent rate. It has been characterized by periods of comparative stagnation followed by periods of strong expansion.

Producing countries have tended to experience spectacular surges in their output levels over comparatively short periods. Typically, these cocoa booms eventually give way to periods of fairly stable production, followed in turn by declines or crises, sometimes gradual, sometimes steep. The entire progression from boom to crisis is referred to as the 'cocoa cycle'.

Historically, cocoa booms have invariably resulted in shifts in the geographical focus of world production. From its origins in Central America, the early development of cocoa as an international commodity was accompanied initially by a production shift towards South America (particularly Venezuela and Ecuador) and to some extent to the islands of the West Indies. In the early part of the twentieth century, industrialization of the processing of chocolate and its subsequent rise in popularity as a consumer item (especially in Europe and other parts of the northern hemisphere) was mainly fed by the cocoa boom in Ghana. Although Brazil steadily increased its output over this period, the major shift from Latin America to West Africa was driven by the Ghana phenomenon.

After a period of comparative stagnation in the 1970s, there followed a sustained rise in world production. The principal contributor this time was Côte d'Ivoire which, as production in Ghana went into decline, replaced the latter as the world's largest cocoa producer. At the time this shift was taking place within Africa, growth in South-East Asia started. This region has subsequently become at least as important as Latin America.

Figure 1 shows the breakdown of world production by region over the twentieth century. It illustrates the rise to dominance of Africa, as well as the more recent growth in importance of Asia.



Source: ICCO.

## Shifts within countries

From east to west in Ghana  
and Côte d'Ivoire

Cocoa booms and crises can occur not only on a national scale, but also within a particular producing country – and the two processes can take place simultaneously. Ghana provides a good illustration of this shift. In the late 1940s almost 80% of the country's production was in the eastern (Eastern Region and Volta) and central parts (Central Region and Ashanti) of the cocoa-producing belt. During the second half of the 1990s, the western part of the belt (Brong-Ahafo and the Western Region) accounted for more than 60% of national production. A similar change from east to west has taken place in Côte d'Ivoire.

## The mechanics of the cocoa cycle

A cocoa boom within a country usually results from the conjunction of availability of two key resources: land and labour. The process is triggered by the necessary physical, political, economic and social conditions combining to create an environment which encourages the development of new cocoa smallholdings and, in some cases, plantations. The price of cocoa on the international market plays a part in shaping the economic environment but is by no means the only factor at work.

All cocoa booms to date have depended upon the availability of abundant supplies of land suitable for new cultivation, i.e. tropical rain forest. In its virgin state, the tropical rain forest provides exactly the right microclimate for cocoa growing. Its soils are initially rich in nutrients and there is little danger of



disease from the type of organisms that attack the cocoa plant. Cultivation of cocoa in such an environment is relatively easy and there is usually no shortage of entrepreneurs eager to invest in its development.

A cocoa boom also depends on the availability of labour. When the right conditions are in place, this is invariably supplied in the form of migrants from surrounding areas and regions – often from across borders. The cocoa booms in Côte d'Ivoire and Ghana, for example, were largely developed by migrant labour from the Upper Volta region (now Burkina Faso).

After the boom phase, various problems typically start to manifest themselves, leading to the crisis stage of the cocoa cycle. Under the monoculture that has been established, a greater susceptibility to cocoa pests and diseases starts to develop. The farmer is then faced with either investing more in disease control, or risking lower production levels. At the beginning, cultivation would have benefited from the natural nutrients in the soils of virgin forest land, but lack of proper soil maintenance and fertilization thereafter leads to a gradual decline in the soil's structure and nutrient values. Usually, after an initial period of comparatively high and stable production at little cost in terms of material and labour, yields from established farms start to decline.

Other factors also play their part. The destruction of the original tropical forest (not only for cocoa-growing, but also perhaps for other purposes) can change the microclimate, turning it drier and more erratic in its rainfall patterns. And at the social level, the working lifespans of farmers are similar to that of the production cycle of the cocoa farm. If their children do not take over the farm, the farmers are faced with a falling output in their own declining years.

The usual reaction to a cocoa crisis is, where conditions permit, a migration of activity from older worn-out producing areas into new, unexploited areas of virgin forest. Examples of this development can be seen in both Côte d'Ivoire and Ghana.

#### Exceptions to the classic production trend

The above is a general description of the typical progression of cocoa production, but there have been exceptions. In Brazil, for example, where cocoa production has concentrated in the State of Bahia, the increase in volume over the twentieth century progressed more smoothly than that typified by most cocoa booms. Until the 1990s, cocoa farming practices in Bahia included regular fertilization and other forms of maintenance, even on very old farms.

The crisis, however, when it came in the 1990s, was catastrophic. It was almost entirely caused by the incursion and rapid spread of witches' broom throughout the Bahia tree stock. Migration to other areas suitable for cocoa growing has not been an option for farmers in this case, since the same disease is endemic to the Brazilian Amazon Basin, the only other location with suitable conditions for cocoa growing. The only possible solution, therefore, if the demise of Brazilian cocoa production is to be prevented, lies in the development of disease-tolerant or disease-resistant planting material.

Malaysia has also not followed the classic trend. A steep rise in production in the 1980s was followed by an equally steep fall in the latter part of the 1990s. In this case, the crisis was a crisis of confidence in the international cocoa market in the face of a prolonged period of low prices. This aspect has been a major factor in the wholesale conversion of cocoa plantations to oil palm cultivation.

Production in Indonesia, largely on the island of Sulawesi, is still in the boom phase of the cycle. It is a typical smallholder development, but deploys higher levels of management and inputs than tends to be the case in West Africa, resulting in better yields. However, it remains to be seen how resistant it will be to the threat of a cocoa crisis, the early indications of which – a growing disease level and occasional years of drought – can already be detected.

## Price cycles

Cocoa prices on the international market tend to follow a long-term pattern, which reflects the characteristics of the cocoa cycle and indirectly (or sometimes directly) influences the shifts in emphasis of production between countries and regions. During cocoa boom periods there tends to be a surplus of supply on the world market, leading to falling, then low and stagnant prices. The low prices contribute to the ending of the boom period, until eventually consumption outgrows production, resulting in the world market entering a period of structural supply deficits. Prices consequently rise, partly encouraging new cocoa booms which might appear in entirely new countries or regions, as in the case of South-East Asia.

The length of a long-term price cycle is loosely estimated to be a little over 20 years. Even though the 1990s saw a modest recovery in prices with mild structural supply deficits, the price levels reached in 1998, in real terms, were still low compared to those prevailing in the 1970s and through much of the 1980s. Nevertheless, it would appear that prices have been high enough to encourage a number of countries in Africa and Asia to plan on expanding their production in the future.

## Future projections

Available resources of virgin tropical rain forest throughout the world have been steadily dwindling. In addition, public pressure to preserve what remains of them is increasing internationally. These factors make it less likely that the future growth of cocoa production will follow the classic cocoa boom scenario. Emphasis is now being placed on developing methods of sustainable cocoa production, involving the rejuvenation and replanting of older planted areas. Under such conditions, there may be less shifting of cocoa production from region to region and country to country than in the past, although the possibility of new cocoa booms occurring in either existing or new production areas cannot be discounted.

ICCO and FAO (Food and Agriculture Organization of the United Nations) projections for cocoa production to 2005 are set out in table 2.

Regions	1990/91 a/		1998/99 a/		2004/05 b/	
	Quantity	%	Quantity	%	Quantity	%
Africa	1.42	56	1.92	69	2.17/2.00	70/65
Asia and Oceania	0.42	17	0.52	18	0.56/0.61	18/20
Latin America and the Caribbean	0.67	27	0.37	13	0.37/0.47	12/15
<b>World</b>	<b>2.51</b>	<b>100</b>	<b>2.81</b>	<b>100</b>	<b>3.10/3.08</b>	<b>100/100</b>

**Sources:** ICCO and FAO.

a/ ICCO.

b/ Published independently by ICCO and FAO in the first quarter of 2000.

## CHAPTER 3

# Economic importance of cocoa to producing countries

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Cocoa is almost exclusively grown in developing countries in the tropics. As their resources are often scarce and consist mainly of agricultural raw materials, it is incumbent on these countries to exploit to the full the revenue earning opportunities that these commodities represent.

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### Social and economic impact

A cocoa crop can be beneficial to the social structure of a country as well as to its economy. Cocoa requires comparatively large areas for it to be cultivated economically and cocoa growing is therefore almost entirely a rural activity. By its very nature the crop provides both income and status to rural communities, thus helping to prevent large-scale migration to urban areas, with all its attendant problems of unemployment and lower quality of life.

In certain parts of the world, cocoa is of minor importance to a country's overall economy but a major or even dominant crop in the region where it is grown. Although Brazil, for example, has been one of the world's major cocoa producers for much of the last century, the crop's contribution to the national economy has always been comparatively small. Within the State of Bahia, however, where most of Brazil's cocoa is cultivated, cocoa production has long been the principal economic activity.

In a smaller country, on the other hand, cocoa may be the mainstay of the national economy. Such is the case with Sao Tome and Principe, the dual-island State off the coast of western Africa. Its cocoa output may have no impact on world supply and demand and yet the fortunes of its national economy depend on the major cocoa producers and consumers elsewhere whose actions ultimately decide price levels.

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### Value adding through processing

A number of producing countries, notably Côte d'Ivoire, Nigeria and Brazil, have sought to increase export revenues from cocoa by developing facilities for processing raw cocoa beans into semi-finished and, in some cases, finished cocoa-based products. At first sight this would seem to be a logical development for commodity producers since, in principle, local processing ought to have the effect of adding value to the material being exported. In the case of cocoa, however, this is not without inherent difficulties. This is discussed in greater detail in chapter 17.

## Export earnings from cocoa

Average annual export earnings from cocoa in a number of producing countries are shown in table 3.

Country	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-1997
Brazil	190	638	604	482	244	150
Cameroon	106	235	166	204	99	159
Colombia	1	3	10	22	16	18
Côte d'Ivoire	198	700	832	1 075	928	1 422
Dominican Republic	22	72	61	59	45	58
Ecuador	57	214	124	122	97	142
Ghana	369	758	379	461	321	554
Grenada	2	6	5	3	3	2
Indonesia	1	15	44	82	215	386
Malaysia	9	65	147	292	240	208
Mexico	10	43	23	24	19	22
Nigeria	244	557	276	231	151	210
Papua New Guinea	26	74	56	52	36	45
Sao Tome and Principe	8	18	9	5	4	5
Togo	19	41	24	21	8	15

Sources: FAO, *Trade Yearbook* (Rome); ICCO.

The share of cocoa exports in each producing country's total exports over the 1971-1997 period is shown in table 4. There is some correlation between trends in different countries over time because they are all subject to the same international price movements. Any significant differences between countries therefore usually reflect changes in national production volumes.

Country	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-1997
Brazil	3	4	3	2	1	< 1
Cameroon	29	30	17	23	6	10
Colombia	< 1	< 1	< 1	< 1	< 1	< 1
Côte d'Ivoire	22	28	31	36	32	35
Dominican Republic	5	9	7	8	6	8
Ecuador	10	12	5	6	3	3
Ghana	60	74	47	53	35	27
Grenada	31	33	29	13	12	13
Indonesia	< 1	< 1	< 1	< 1	< 1	< 1
Malaysia	< 1	1	1	2	< 1	< 1
Mexico	< 1	< 1	< 1	< 1	< 1	< 1
Nigeria	7	5	2	4	1	< 1
Papua New Guinea	7	11	7	5	2	2
Sao Tome and Principe	78	96	99	78	70	60
Togo	26	19	14	10	4	5

Sources: FAO, *Trade Yearbook*; ICCO.

## Côte d'Ivoire

Cocoa provides a third of the country's total export earnings

Côte d'Ivoire is the world's largest cocoa producer, contributing over 40% of the annual world supply. Cocoa is the country's most important export item. Since the mid-1970s, however, its export earnings from cocoa have not kept pace with its expanding production volumes. The main reason has been the comparatively depressed international cocoa prices in an oversupplied market. Ironically, Côte d'Ivoire's enormous growth as a cocoa producer has probably been a major contributor to this situation. In the late 1980s and early 1990s the country suffered an economic recession, demonstrating the impact that cocoa's international price volatility can have on a national economy dominated by export earnings from cocoa.

## Ghana

Between 25% and 30% of export earnings

Ghana was once the world's largest producer of cocoa. Its production levels declined from the 1960s through to the mid-1980s, but there has since been some recovery. In the early 1970s cocoa made up around 60% of total export earnings, rising to 80% with the high cocoa prices of the mid-1970s. Since then, price declines, a drop in production and the diversification of the Ghanaian economy have reduced the country's dependence on cocoa. Recently cocoa has accounted for 25% - 30% of export earnings, still a significant proportion of the national total.

## Nigeria

Less than 1% of total export earnings

Until the early 1970s, Nigeria was, for a long period, second only to Ghana in terms of the volume of its cocoa production. Cocoa was a relatively important contributor to the Nigerian economy. Since then, not only have production volumes declined, and with them export earnings derived from cocoa, but also

Nigeria's mineral oil industry has grown to the point where it is the dominant industry. Rural labour resources, in particular, have been attracted away from cocoa by the lure of oil-related employment elsewhere, and cocoa production has suffered.

Since the early 1980s the share of cocoa exports in the national total has continued to decline. Nevertheless, cocoa remains one of the country's largest agricultural exports.

## Cameroon

Between 5% and 10% of export earnings

Cocoa has also declined in importance to the Cameroonian economy, despite the fact that production has remained fairly stable. There was a temporary dip in volume in the early 1990s, associated with the difficulties experienced during the transition of cocoa marketing operations from a State-controlled to a liberalized system. However, the value of cocoa exports has been falling since the 1980s, broadly in line with cocoa prices. Cocoa's diminishing share in Cameroon's export earnings also reflects to some extent the diversification of the national economy. Its contribution, however, of between 5% and 10% to total export revenues, remains significant.

## Brazil

Less than 1% of total export earnings

Cocoa is of less importance to Brazil as a whole than it is to many other high-volume cocoa-producing countries. This was true even when Brazil was the second largest cocoa producer in the world. Coffee is the dominant agricultural export.

However, in the State of Bahia, cocoa has always been of vital importance. The disastrous decline in production in the 1990s caused by witches' broom led to a deep economic recession in the area. Farmers have few practical alternative activities to turn to which are not environmentally damaging. Clearance of cocoa farms for livestock rearing, for example, is seen as being potentially destructive to the natural environment of the region. The rejuvenation of cocoa production by developing cultivation methods which can somehow offer resistance to the disease would seem to be the most viable solution, but this is difficult to get started when international cocoa market prices are comparatively low.

## Ecuador

Around 3% of total exports

Since the mid-1970s, Ecuador has maintained a fairly stable level of production, punctuated by occasional very poor years resulting from the El Niño weather phenomenon. Export earnings from cocoa have tended to decline, however, especially in terms of their percentage contribution to the national economy. This is partly related to the decline in cocoa prices, but it is also due to advances in the value of other exports from Ecuador, including mineral oil. Cocoa growing nevertheless remains one of the most important economic activities in the rural areas.

## Malaysia

Less than 2%

In Malaysia, cocoa has become a bulk export crop, a result of the rapid expansion in production in the 1980s. It has not been of notable importance to the national economy and its share in total export earnings has never reached 2%. In a rapidly industrializing country, cocoa has been outstripped by many other sectors. At one time it played a significant role in the economic

development of Sabah (in northern Borneo) and, to a lesser extent, Sarawak. It was cultivated in these areas as a plantation crop, although there have also been some significant smallholder developments.

During the 1980s and 1990s, cocoa lost out to oil palm as a crop in Malaysia. The decline in international prices, the mechanization of palm oil production, and the scarcity and cost of agricultural labour were the main causes. Large areas previously planted to cocoa have been converted to oil palm, leaving cocoa as a somewhat minor contributor to the Malaysian economy.

The size of smallholdings (up to 40 hectares) in the country tends to be on a vastly different scale from that in West Africa, for example.

## Indonesia

Less than 1%

Cocoa is proving to be an agent of economic development in Indonesia's rural areas, especially on the island of Sulawesi. These producing areas differ from those in Malaysia in that they have been based mainly on smallholdings rather than on plantations. There has been an important influx of immigrants from other islands in Indonesia, attracted by the potential economic benefits of cocoa cultivation in Sulawesi.

Cocoa is thus a leading factor in the economic development of Sulawesi. However, it does not yet contribute even 1% of the total value of Indonesia's exports.

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## Summary

During the last 25 years the national economies of most cocoa-producing countries have developed and diversified significantly. While the significance of cocoa exports, expressed as a percentage of national export earnings, may have diminished, cocoa growing remains vitally important for most producing countries and regions and is often one of their largest agricultural activities.



## CHAPTER 4

# Marketing methods at origin

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There must be a channel from farm to the exporting dock if producers are to reap the fruits of their labour. In the past, it was usually governments that established structured organizations, which had as their goal the protection of farmers from the vagaries of the world market.

Approaches applied to the marketing of cocoa by producing countries have tended to differ according to their geographic location and their colonial heritage. Ghana, Nigeria, Sierra Leone and some countries in the Caribbean and the Pacific chose the system of marketing boards. These were statutory bodies which purchased the cocoa from the farmers at a fixed price for the season, and acted as principal sellers and exporters to the world market under one name. The price to the farmer was set low enough for the organizations to yield a profit, which was used to defray operating expenses and to accumulate reserves in the event that world market prices should fall below the prices paid to the farmers.

Côte d'Ivoire, Cameroon, and Togo adopted the *caisse de stabilisation* system (stabilization fund). Under this arrangement, independent intermediaries (*traitants*) purchased cocoa from the farmers at a fixed price during a season. After receiving permission from the fund, private exporting companies sold the cocoa as principals into the world market under their own names and marks. The difference between the price paid to the farmer and the one obtained in the world market was also used to cover expenses and to accumulate reserves.

In Latin America, again various approaches have been tried. Some countries have experimented with marketing boards or cooperative monopolies (Mexico, Venezuela), some with minimum registration prices and government control over sales (Brazil), while others have relied on a free market (Dominican Republic). The newer producing areas of the Pacific Rim (Indonesia, Malaysia) have taken the free market route.

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## Free markets

During the last few years many producing countries have changed the system by which cocoa is brought from the farm to the port of export and the method by which it is sold into the world market.

In Côte d'Ivoire, the Caisse de stabilisation des prix des produits agricoles (CAISTAB) has been abolished. Exporters are now free to purchase direct from farmers. The system of *débloquage* – the need to have government approval before making a sale in the export market – has also been scrapped.

The old system worked well for as long as prices paid to the farmers were below those on the world market and for as long as world market prices were significantly above the costs of growing cocoa. This was the case for almost any crop year up to 1998, when cocoa bean prices started to decline and eventually dropped below the farmers' price.



The new organization, Nouvelle CAISTAB, which has replaced CAISTAB, has no direct control over marketing matters. There is talk of establishing a system of forward selling through a local *bourse* (exchange) dealing in export certificates, but nothing is in place at the time of writing.

### Improved access to information

In the meantime, business in Côte d'Ivoire is being conducted in an entirely free market atmosphere, with exporters' agents, much as before, buying the cocoa from the farmers on behalf of their principals. The cocoa is physically moved to central exporters' collection and treatment plants where the beans are further dried, cleaned and bagged for export, and then transported for loading onto ocean-going ships at the main ports of Abidjan and San Pedro.

For the farmers, not much may have changed, except that the daily price they get for their beans is now more a reflection of the world market. On the other hand, farmers today do have access to instant information on what is happening in the world market, either through exporters' up-country organizations or direct from the Internet.

A similar situation now also exists in Cameroon, Nigeria and the other countries where marketing boards and *caisses* have been dissolved and markets have been liberalized. Indonesia has from the beginning operated a free market, where exporters, either directly or through agents, buy from the farmers at daily world market price levels. As in the Dominican Republic, the same liberalized approach to cocoa marketing is now being taken by many other countries such as Brazil, Ecuador and Venezuela.

Ghana is another country in the process of privatizing its internal marketing system, although it is happening more slowly. Its marketing board (Cocobod), the sole buyer and seller of cocoa for export, is still maintained. Private companies have been gradually allowed to participate in cocoa bean buying in the internal market. A fixed price for the season is still maintained, however, which at times is above the world market price. Ghana is pledged to establish a full free market system, but no timetable has yet been set.

### Purchasing schemes

Under the free market approach, an exporter sets up an internal purchasing organization, either using its own staff or going through independent intermediaries (e.g. *traitants* in Côte d'Ivoire) who, usually acting as brokers, purchase the cocoa from the farmers. Depending on their individual relationships with these intermediaries, farmers either sell existing inventories or they contract with the intermediary for future delivery of the crop yet to be harvested, often against a cash advance.

Intermediaries might also provide farmers with technical assistance, perhaps in the form of bagging or farming equipment, agricultural insecticides, fungicides or fertilizers – with some training in the proper application of these materials. This is a more common arrangement in cases where the intermediaries are the farmers' own cooperatives.

The price paid to the farmer is negotiated individually and depends upon the levels prevailing in the world market. Generally speaking, the futures contracts as quoted in London or New York are taken as the basis for the price, and adjusted for the estimated cost of bringing the cocoa from farm to market.

The exporter then arranges for the cocoa to be transported from the up-country delivery point to the seaport and sells it directly to overseas customers.

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## Pros and cons of the free market system

The main advantage to farmers of the free market system is that they tend to receive a higher proportion of the prevailing international market price. The margin taken by intermediaries and exporters is relatively small as they are in competition with each other. Generally, farmers in countries with free market systems have been getting, typically, anything from 80% to 85% of the FOB price for their cocoa, while those working under a *caisse* or board system have usually received less (and sometimes far less) than 50%.

At the same time, several difficulties may be encountered within a free market system. These have to be overcome.

First, farmers in less accessible locations may be liable to exploitation, especially if the overall quantities produced in a given area are not large enough to support more than one intermediary. Farmers may also be enticed by intermediaries to take generous advances as credit against future crop deliveries, and thus become indebted to them.

Second, in those countries where the abolition of the *caisse* or the board also led to the quality control function being dismantled, the quality of product delivered to exporters often noticeably declined. This is not, however, a direct effect of privatization. It is rather the result of the quality control function being allowed by the authorities to break down before the private sector had been able to set up a new quality control system of its own.

To be successful, a free market system must have a reliable quality control apparatus. This might be through either a government or a privately supported quality control and certification agency (e.g. an exporters' association).

Third, a free market trading system potentially exposes buyers to a greater risk of lack of contract performance on the part of the shippers. Under a *caisse* or a board system, at least the marketing organization guaranteed the performance of the contract. With these agencies' financial resources and their power to police the trade, defaults were rare and defaulters were punished.

But under a free market system the buyer is potentially at the mercy of the seller's good intentions. While this aspect has been a relatively minor problem during the long period of generally declining prices, buyers should be aware that temptations exist for a seller to default if there appears to be a quick profit to be made.

However, it is interesting to note that, in countries that have worked under a free market system for many years, the incidence of sellers defaulting is still comparatively low. This is probably because exporting companies have learned, through long and hard experience, that a reputation for contract reliability is perhaps the most important asset they can have. Ultimately, trust between seller and buyer is essential for a long-term mutually beneficial relationship.

## CHAPTER 5

# Fine or flavour cocoa

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From 40% to less than 5%  
of world production

While world production of cocoa increased tenfold over the past 100 years, only about the same amount of fine or flavour cocoa is being produced today as in the beginning of the last century. The share of this cocoa in world production has therefore fallen from more than 40% to less than 5%.

Despite its minority share, there are some historical as well as some future potential reasons why fine or flavour cocoa deserves a short chapter in this guide.

There is a clear distinction in the trade between fine or flavour and basic cocoa beans.

Cacao Nacional

Fine or flavour beans have many more distinctive individual characteristics. Their genetic ancestry has been traced back to the Criollo varieties and hybrids thereof, such as the Trinitarios. Ecuador, the largest producer of fine or flavour cocoa, actually traces their origins back to a variety believed to be neither Forastero nor Criollo, known as Cacao Nacional. This is a tree which is particularly distinguished by its height. When fully mature, it exceeds that of the average cocoa tree by several feet.

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## High-quality chocolate

Fine or flavour beans are primarily used by makers of high-quality, fine chocolate confectionery. Colour and flavour are extremely important to these chocolate makers and users. In some instances, these manufacturers will establish and maintain direct contact with the producers, to the extent that they might even buy direct from a farm or plantation. When they do, it is usually upon approval of a preshipment sample, retaining the right of refusal on delivery (with a replacement clause).

Fine or flavour cocoas are less productive than basic beans. Perhaps not surprisingly, most of the research into the development of higher-yield or disease-resistant cocoa varieties has been devoted to basic cocoa. Moreover, fine or flavour cocoa beans have always been produced in areas where agriculture has had to take a back seat to industrial development or had to compete with other resources, such as oil. Thus, the once predominant position of Venezuela as a producer of fine or flavour cocoa has diminished.

As many cocoa processors abandon their operations and turn to outsourcing for their chocolate needs, larger firms are taking over. These firms have tonnage requirements which cannot be met by a single source of fine or flavour cocoa, and they also want guaranteed continuity of supply with consistent colour and flavour characteristics. Moreover, the trade found that allowing the processor the privilege of picking and choosing made dealing in these particular cocoas unprofitable. Warehousing and customer servicing demands proved to be so costly that even the high premiums prevailing in the market for these cocoas could not provide adequate compensation. As a result, most cocoa trading houses have now closed their fine or flavour cocoa departments.

## Niche markets

Despite the fact that fine or flavour's share in total cocoa usage has diminished, there remains a viable market for speciality cocoas, and certain developments in consumer demand suggest that there may be opportunities in the future to reverse the overall downward trend. For example, regions where fine or flavour cocoas are produced also tend to lend themselves to organic farming. As organically produced foods increase in popularity, fine or flavour cocoas are well placed eventually to find a niche in this new type of speciality market.

### Box 5

#### *Light breaking and dark breaking beans*

*When cocoa beans are examined in the laboratory or during grading, they are cut lengthways and the interior of the bean is examined for colour and defects. If the colour is light brown, the bean is considered 'light breaking'. If the colour is dark, it is 'dark breaking'.*

*Light breaking beans are generally of the Criollo variety (some are Trinitario or Nacional-based), i.e. fine or flavour beans. Basic cocoa beans of the Forastero variety are generally dark breaking.*

Another opportunity not yet fully explored is that of selecting plants which have beans of a very light colour. These may be the true Criollo beans of Samoa and Venezuela and the hybrid mutation known as Catongo, native to the Recôncavo area in the Brazilian State of Bahia. A light breaking bean would make it possible to produce a light-coloured 'dark' chocolate without the need to add milk, again something which may well find itself a niche in the speciality chocolate or organic markets.

**Table 5** Fine and flavour cocoa: annual production, by country and by quantity, 1988/89-1998/99 (in thousands of tons)

Country	1988/89	1993/94	1998/99
Ecuador	38.9	60.0	49.8
Venezuela	10.2	18.0	16.0
Papua New Guinea	9.8	7.8	6.3
Madagascar	3.0	3.2	3.2
Sao Tome and Principe	4.7	3.9	2.8
Indonesia a/	5.0	4.0	2.0
Dominica	0.2	0.0	2.0
Trinidad and Tobago	1.4	1.7	1.8
Sri Lanka	1.6	1.4	1.6
Jamaica	1.0	2.5	1.5
Grenada	1.5	0.8	1.1
Costa Rica	0.3	0.8	1.0
Panama	1.0	1.0	1.0
Others	0.7	0.1	0.2
<b>TOTAL</b>	<b>79.3</b>	<b>105.2</b>	<b>90.3 b/</b>

**Sources:** ICCO and US Department of Agriculture.

a/ Figures include production in East Timor.

b/ Equivalent to 3.2% of the world total (2.8 million) for all categories of cocoa.

*PART TWO*

*Exporting and shipping*



## CHAPTER 6

# Shipping cocoa beans

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The purpose of this chapter is to outline the points of current practice and management that need to be addressed in order to ensure efficient shipment of cocoa beans from the farm to the destination. The main areas covered are:

- From farm to export point;
- Supervision at departure;
- Assurance of contractual performance;
- Marine transport;
- Marine insurance;
- Phytosanitation;
- Cooperation between exporter and importer;
- Supervision on arrival.

As it is the aim of exporters, often called shippers, to look for repeat business, i.e. for the buyers to come back for more of the exporters' cocoa, consistent good service will be the theme running through this chapter. There are no short cuts to a successful commodity export business.

It is assumed in this chapter that the export sale contracts are included in the standard contracts of one of the following cocoa associations:

- Cocoa Association of London, Ltd (CAL);
- Cocoa Merchants' Association of America, Inc. (CMAA);
- Fédération du commerce des cacaos (FCC).

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## From farm to export point

The quality of the cocoa will not improve after it leaves the farm gates. In the business of exporting cocoa there is generally a lack of feedback from the market to the grower. This applies in particular to quality matters. Most growers do not use cocoa beans themselves and therefore may not be familiar with what constitutes good quality on the market. Often the growers' only practical guide is the price which they obtain for their cocoa. If the price is paid irrespective of quality, then it is most likely that the cocoa supplied will be the one requiring the least amount of work. Ensuring that growers know about quality and how to process cocoa correctly is therefore an important factor.

There are two main aspects of quality:

- How are good quality cocoa beans produced for export?
- How is that quality assessed?

Before looking at each of these in turn, it should be noted that there are some quality aspects that the grower has little influence on. Primarily these have to do with the fat content of the beans and some of the flavour characteristics. The former is influenced by the variety grown, as well as climatic conditions

(notably the rainfall level and the stage of pod development at which the rain falls). Flavour characteristics also have to do with the variety grown, but the grower does have some control over whether or not these develop in the post-harvest processing.

Broadly speaking, if the variety of cocoa grown has any potentially distinctive flavour characteristics, the actions of the grower will determine whether these appear in the final bean. If the variety grown does not potentially have special flavour characteristics, then the grower's cocoa will at best have a well-developed basic chocolate flavour. It should be noted that special flavours are rare. Around 95% of all the cocoa grown in the world is classed as basic.

## Producing good quality

One of the positive aspects of cocoa is that smallholders can grow and prepare beans of the highest quality just as well as large estates or plantations.

As the buyer of the beans, the exporter has the opportunity to influence the way the beans are presented by the grower. To advise on actual growing may not be possible, but certainly exporters should be aware of what treatment is required from harvesting onwards. The particular advice given depends very much on the type of cocoa grown but, for the majority of growers producing basic cocoa of the Forastero variety, this may be condensed into the following:

- Regular harvesting every two to three weeks of ripe, not green or over-ripe, pods.
- Pods opened no later than five days after harvesting.
- Diseased or rotten pods should be excluded.
- Adequate fermentation time suited to the type of beans cured, with aeration proper to the quantity, system and conditions of the region.
- Sun drying ideally to a moisture content of 7.5%. If artificial drying is necessary, the condition should mimic sun drying as far as possible using low temperature/ambient air for the initial drying with higher temperatures only for the final stage. Sun drying causes acetic acid to evaporate and reduces the acidity in the beans.
- The dried cocoa should be put in clean bags made of food-grade sacking material, stored off the ground and away from walls in dry, well-ventilated and smoke-free storage.
- Finally, the cocoa should be transported in clean, well-ventilated conditions away from odorous material.

The last item is usually directed at the exporters themselves, although it should be noted that they source their cocoa in different ways. Much depends on the location and the system operating in their particular country. The majority have either to establish warehouses up-country in the cocoa-growing region or to send trucks to collect the cocoa from the farm gate, in which case the above advice on using clean bags, etc., does not concern the grower.

Cocoa is a crop particularly well suited to smallholders. If the above advice has been followed, a buyer will be able to find good quality beans that meet export requirements from a grower that perhaps supplies only 500 kg a year.

Sadly, however, growers do not always follow the above advice. Usually, time is not on their side. Pressure is applied to have the cocoa ready for the exporter, either because the beans are needed to fulfil a sales contract or because the

80% of the world crop comes from growers with less than 5 hectares planted to cocoa



exporter's truck will not be around again for another 'couple of weeks'. The grower may take short cuts in post-harvest processing, which sometimes means that drying is not properly completed.

Dampness is the cause of most difficulties with the quality of cocoa at the later stages. Growers may think that providing 'wet' cocoa is in their favour: that not only is the cocoa available sooner (and paid for earlier), but that if the cocoa contains moisture (i.e. is not properly dried), it weighs more and so will attract a higher return. This is bad practice and should be avoided. Much may depend here on the exporter. For example, is the grower being paid a fair price for well-prepared cocoa?

## Assessing quality

### *Exporter buying*

The exporter is faced with difficulties in assessing cocoa bought from smallholders, as the cocoa presented may be in small quantities. Proper assessment of cocoa can take up to an hour which, if done for, say, every second bag presented, becomes difficult to manage. This is probably the main reason why exporters in some countries, when sourcing their beans, are unable to differentiate between different grades of cocoa and have to keep some money back in order to insure themselves against the possibility of the cocoa being of lower quality than they expected.

This is one reason why smallholders are encouraged to form cooperatives. Prospective buyers (the exporters) can then be presented with sufficient quantities of cocoa to allow them to assess quality properly and to pay accordingly. Smallholders on their own will always find themselves at a disadvantage.

It may be that the exporter knows growers who can be trusted consistently to prepare the cocoa properly. In such cases both the exporter and the smallholder gain from the relationship, providing the exporter is fair with the price offered. Note that the word 'consistency' comes into play here, applying to the buying as well as the exporting. Growers tendering small amounts of cocoa for sale are unlikely to get the best return. Where large amounts are tendered, say, of 10 tons or more, the exporter can analyse the cocoa on terms similar to those of the sale contract, thereby reducing the risk of buying on one set of terms and selling on another.

### *Exporter selling*

The exporter may be faced with having to comply with two different sets of quality requirements when shipping the cocoa:

- The requirements of the exporting country, and
- The requirements in the export sale contract.

(It should be noted that additional requirements exist for exports to the United States because, on arrival at destination, the cocoa must comply with FDA regulations.)

The first of these requirements, as well as the stringency with which they are applied, will vary from country to country. They all apply to cocoa before or at the time of shipment and, in some cases, determine whether export may take place and what export tax applies. The second set of requirements, specified in the export contract, may also apply at the time of shipment, but usually relates to the cocoa on arrival at its destination. The exporter therefore has to ensure that both sets of requirements are met.

Cocoa exported to the United States and not meeting FDA standards may be rejected, with the exporter having to pay for the costs of reshipping the cocoa to where it came from, or to a destination with more lenient quality requirements. Special care is therefore needed in exporting to the United States, to ensure that the specific quality standards are met. (See below for details.)

Irrespective of the particular standards applied, quality assessment is carried out on the basis of the following:

- The sample drawn represents the parcel.
- The methodology for the quality assessment is understood.
- The definitions of what constitute faults are clear.
- The grading standards to be applied are clear.

## Sampling

There are few guidelines in international standards relating to the methodology of sampling. Many countries imposing quality requirements for exports use the standards of the International Organization for Standardization (ISO) or use them as a basis. According to *Cocoa beans – Sampling* (ISO 2292:1973) ‘samples ...should be taken from at least one-third of the bags in each lot, the bags being drawn at random...’ Importantly, the standard specifies that ‘The complete consignment shall be examined in lots of not more than 25 tons on despatch and not more than 200 tons on arrival.’ It goes on to say, again importantly, that ‘A minimum of 300 beans should be taken per ton or fraction of a ton.’

Exporters also have to be guided by their export contract, which is likely to be based on CAL, CMAA or FCC terms. CAL and FCC have brought many of their contract terms together and FCC has published new contracts and market rules applicable from 1 January 1999. Under these contract terms, both associations have attempted to harmonize their clauses. On sampling they state: ‘Sealed samples shall be randomly drawn from a minimum of 30 per cent of the sound bags at the time of weighing...’

CMAA contracts are silent on sampling, but arbitration samples are generally drawn according to guidelines set by the CMAA board of directors from time to time. At one point in 2000, they specified a minimum of 20% of the bags. Note that the results may be very different if the analysis is undertaken on two separate samples (one taken at the port of loading and the other on arrival at destination) drawn from different percentages of bags.

## Methodology of analysis

The manner in which the sample is analysed is vital to the outcome. The methodology basically falls into three main assessment areas:

- The average size of the beans.
- The average percentage of beans showing faults, and the degree of fermentation.
- The organoleptic characteristics of the cocoa.

### *Bean size*

The average size of the beans is usually derived from the number of beans it takes to make up a given weight. This is referred to as the bean count. This method does not directly measure the size of the beans, but relies on the natural fact that larger beans weigh more than small ones. Larger beans are preferred as the nib to shell ratio is higher. The buyer is therefore obtaining more usable material (the nib, as opposed to the shell). It should be understood that both the bean size and the fat content of the nib will be carefully assessed by the final

users. During the assessment of bean size, the amount of waste/residue/foreign matter will also be checked. It is accepted that a certain amount will occur, but too much will result in the buyer's displeasure.

Interestingly, the ISO standards do not refer to the bean size at all. While CMAA is silent on the methodology to be followed, the American trade is guided by rules of the Coffee, Sugar and Cocoa Exchange, Inc. (CSCE) at the New York Board of Trade (NYBOT). CAL and FCC provide details on how the sample should be analysed. This is stated as follows:

CAL:

Not less than six hundred grammes shall then be obtained by using a flat-bottomed shovel drawn across the middle of the sample ("the test sample"). The residue, foreign matter, flat beans and any bean clumps shall be removed from the test sample and then weighed and replaced by an equivalent weight of whole beans taken randomly from the sample. The total number of beans in the test sample, irrespective of size, shall then be counted and the number, "the bean count", shall then be expressed by the number of beans per 100 grammes.

FCC has a slight variation:

#### 2.1.2.1. Waste

The whole sample ...shall be weighed, well mixed and then sieved through a screen with round holes the diameter of which shall be 5.0 mm min./max. The quantity passing through the sieve, the "waste", shall be collected and weighed.

FCC goes on to say:

#### 2.1.2.2. The bean count

Not less than six hundred grammes shall then be obtained by using a flat-bottomed shovel drawn across the middle of the sample ("the test sample"). The residue and foreign matter taken from the test sample shall then be weighed and replaced by an equivalent weight of whole beans taken randomly from the sample. The total number of beans in the test sample, irrespective of size, shall be counted and the number, "the bean count", shall then be expressed by the number of beans per 100 grammes.

CAL therefore regards flat beans as shell, while FCC considers them to be whole beans.

It should be noted that there is the possibility that CAL, at least, will adopt a new method of assessing bean size at some time in the future. This involves passing the sample through a series of three sieves with round holes of 13 mm, 11.5 mm and 10.5 mm. The beans remaining in each sieve, and those in the base, will then be counted. Not only will this measure the actual bean size (as opposed to the weight of the beans) but it will also provide an average bean size as an indication of its distribution. Such tests are to be applied by the London International Financial Futures and Options Exchange (LIFFE) for the grading of future terminal cocoa lots and may be extended to include physical cocoa.

## *Defects*

Assessment of the percentage of defective (or faulty) beans is carried out by means of the cut-test. In this, 300 beans from the sample are cut in half to expose the largest surface area of the nib and are visually inspected for faults. ISO 1114:1977, *Cocoa beans – Cut test*, provides details, which are not dissimilar to those specified in the proposed CAL and FCC terms, as follows:

### 2.1.2.3. The cut-test

Three hundred beans from the test sample shall be cut lengthways through the middle, so that the maximum cut surface of the cotyledons can be examined by the naked eye. Each bean shall be inspected in full daylight or equivalent artificial light. Any bean with more than one fault shall only be classified in one category of fault.

FDA states:

#### 1. Macroscopic examination

Mix the sample thoroughly and count the 100 beans. Crack open each bean and break into small pieces so as to expose the entire internal area of the beans.

Examination of beans can be accomplished with facility by using a cracking board made from a 15 in. square sheet of ¼ in. aluminum or plywood drilled with one hundred 7/8 in. holes, equally spaced in 10 rows of 10 holes each. Place the board on a large sheet of paper on a hard surface. Scatter the beans on the board to fill the holes. Sweep the excess beans off with the hand and adjust any empty or double-filled holes so that each of the 100 holes contains one bean. Crack open each bean by placing an iron bolt (about ½ in. in diameter and about 3 in. long) on the bean and gently tapping the head of the bolt with a hammer.

Examine the beans in a good light without the aid of a magnifier.

### *Organoleptic tests*

Some buyers, notably chocolate manufacturers (as opposed to the other main group of cocoa-users, the butter pressers) carry out some sophisticated tests on the organoleptic qualities of the beans by making liquor from them. As mentioned earlier, they may be looking for subtle undertones of flavours for fine or flavour cocoa, while buyers of basic cocoa are more concerned that there are no off-flavours.

The worst of these is smoke. This can occur when the cocoa is dried artificially using faulty equipment, resulting in the cocoa picking up a smoke flavour from the fire. Smoke contamination can also occur when cocoa is sun dried close to open cooking fires or stored inside the smoke-filled houses typical of some cocoa-growing areas.

Another defect that is almost as serious is hamminess, i.e. the cocoa has a smell similar to that of smoked ham. This is the result of over-fermentation, when the cocoa has been allowed to lie for too long in the fermentation heap, or box, before drying.

Such contaminated cocoa cannot be blended and should not be mixed into sound lots of cocoa in the hope of hiding it. Only one or two contaminated beans per hundred is enough to ruin a batch of chocolate. While not specified in the contract the usual, unsophisticated way of assessing off-flavours is for the analyst to smell a handful of cut beans that have been warmed in the hand.

### *The faulty cocoa bean defined*

What is the definition of a faulty cocoa bean? This depends on the grading standards, but all definitions apply to the beans in the cut-test. Broadly speaking, there are two main categories of faulty beans:

- Beans that show a certain amount of fermentation.
- Beans that have been eaten by insects and/or contain mould.

The degree of fermentation shows in the colour of the nib. In most cocoa bean varieties the nib starts out a grey, slaty colour. During fermentation it turns purple, then finally becomes dark brown. Some grading standards require the number of purple or violet beans to be noted but most ignore this and count only the slaty-coloured beans. Mouldy beans and insect-damaged beans (visible

to the naked eye) are usually grouped together and are referred to as defective beans. FCC also includes flat beans in this category, if the bean count is considered acceptable.

### ***Grading standards***

The degree to which agencies apply the standards varies. In some cases therefore these standards may simply be considered guidelines. It should always be remembered that these are minimum requirements and it would be wise for exporters seeking repeat business to endeavour to supply beans that are above the minimum standards required.

Appendix II of this guide shows some examples of grading standards.

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## **Supervision at departure**

Some exporters may consider it strange that supervision (sometimes called superintendence) is necessary. Contractually it may not be needed, and some exporters may well perform this service themselves rather than involve another company. Much depends on the manner of export. The exporter may need to supervise both container shipments made on LCL (less than container load) terms and true FOB (free on board) sales.

If the exporter is totally involved in executing the shipment, then there is no need to employ a supervisor. On the other hand, many exports are handled by the shipping lines themselves, or by their agents. This is true for container shipments made on LCL terms, where the shipping line is responsible for stuffing the containers. Exporters not entirely sure of the shipping line's expertise in this area may wish to satisfy themselves that their goods are being looked after once they leave the premises.

True FOB contracts may require the cocoa to be sampled and check-weighed before shipment. Again, in such cases the exporters may wish to supervise these stages themselves or, if they are less confident, employ a specialist third party to perform the service for them.

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## **Assurance of contractual performance**

The central risk for the exporter is whether the buyer will pay for the goods. For the buyer, the risk is whether the seller will provide the contracted goods in the shipment period.

It is vital that the exporter keeps to the contract. Obvious to say, but if the contracted shipment period ends in, say, October, bills of lading dated in November are of little use. If the exporter has difficulty complying with contractual terms, contact should be made with the buyer to discuss matters. If there is non-shipment, default looms and future business looks bleak for the exporter. The term 'quality' applies as much to the service the exporter provides as it does to the grade of beans supplied.

### **Payment**

Assuming that discussions with shipping lines are successful, and supplies of cocoa are timely, the matter of ensuring that the buyer pays for the goods is something over which the exporter may have some control. It is not intended

here to discuss all aspects of payment terms, but simply to outline how to lessen the risk of non-payment. Payment for exports is generally carried out by one of three methods:

- Letter of credit;
- Documentary collection;
- Documents in trust.

### *Letter of credit*

This is the most secure way of presenting documents to the buyer, but it is also the most expensive. This applies not only to the setting-up stage but also to the exporter's receipt of the payment once documents are presented. Sales made by letter of credit have to be agreed at the time of the sale and form part of the contract. The exporter cannot decide at the time of shipment to present documents under a letter of credit. Should the buyer not pay, the issuing bank can retain the documents and in most countries it is accepted that the full legal rights of the seller apply. The letter of credit must be irrevocable and, if the buyer is prepared to accept it, must be confirmed. Frequently used terms are set out in *ICC Uniform Customs and Practice for Documentary Credits* (also known as UCP 500), published by the International Chamber of Commerce (ICC, [www.iccwbo.org](http://www.iccwbo.org)).

### *Documentary collection*

Most cocoa export sales are made on this basis. Slightly less secure than sales made by letter of credit, presentation of documents by collection offers a cheaper alternative. The documents pass through the banks to the buyers, who, in the absence of payment, will find themselves in default of the contract and the collecting bank is able to claim the documents on behalf of the seller.

It should be noted that many exporters who have pre-financing arrangements with their banks may be required to use the bank's collection agency. This provides the bank as well as the seller with security. The disadvantage of the collection method is that documents can take some time to pass through the banking system. The exporter is then faced with having to pay additional interest charges.

### *Documents in trust*

This is probably the least secure way of presenting documents to the buyer, but it is the least expensive and the quickest. The exporter sends the documents direct to the buyer, trusting the buyer to pay. In the event that payment for the cocoa is not forthcoming, there is little direct and immediate redress the exporter can make, except to go to arbitration and then to the courts. Presenting documents in trust is not recommended unless the exporter has high confidence in the buyer.

## **FOB sales**

As mentioned earlier, FOB sales put the seller in the situation that once the goods are on board the ship, but not yet paid for, the cocoa is at risk. The CAL contract has built in the requirement that the buyer has to provide the seller with a copy of the insurance certificate or a letter of guarantee (sometimes countersigned by a bank) when the cocoa is declared. The CMAA contract stipulates that buyers should obtain marine and war risk insurance for their account. Under FCC FOB terms, the contract is silent on insurance.



## Post payment

Africa sells mostly on CIF terms; Asia and Latin America sell mostly on FOB

Once the cocoa has been paid for, exporters may think that their usual obligations are at an end. For FOB contracts with quality and weight established on loading, this is true. When cocoa bean sales are on CIF (cost, insurance, freight) landed weight terms, with quality determined on arrival, exporters (sellers) still have obligations to fulfil even though they have already received payment.

## Weights

The first priority is to honour the weight notes of the final receivers or their supervisor, by raising the final invoice (for a landed weight contract) or accepting a loss in weight claim (for a shipping weight contract where the franchise has been exceeded). In either event, the weights provided by the buyer's warehousekeeper may always be checked at the time of weighing by the exporter's supervisor.

## Quality

Just as the exporter's supervisors may check that the parcel is given the correct weight, they may also oversee that samples are drawn according to the contract. As discussed above, this is important to ascertaining the quality of the parcel.

## Infestation

If a parcel should arrive at its point of destination showing signs of infestation, then the seller will be involved. (See the section below on phytosanitation and fumigation.)

## Condition

Weight, quality and infestation, as described above, are the three matters of standard concern in the performance of the contract. Exporters should also be aware, however, that buyers have the right to revert to the seller in the event of their uncovering something that was not revealed in the sample. This is known as latent damage and can be invoked only if the buyer has applied due diligence in examining the shipment upon arrival at its destination. It refers to the condition of the cocoa. Under CAL and FCC terms, buyers have a period of 28 days from the final day of landing in which to make a claim.

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## Marine transport

Most cocoa contracts have the cocoa 'brought to account' at destination, in terms of both weight and quality. This means that the exporter is still at risk until the parcel has been landed, weighed and sampled at destination. The exporter has control over the cocoa up to the point where it is being handed over to the shipping line. From then onwards it is in the hands of others. How they look after it will help to determine the outcome of the various procedures at destination. When looking to provide a quality service, therefore, there are two main areas that the exporter needs to check:

- Physical elements involved in the export;
- The documentary expertise of the shipping company.

## Physical elements

It is important that exporters ensure that the carrier, or the agent, treats the cocoa as the exporter would want. This includes seeing that:

- The ship's stevedoring sheds are clean and insect/rodent/bird free.
- Containers are suitable for the transport of food.
- The ship's holds are clean, as is the dunnage to be used.

There are, furthermore, a number of major points to note in regard to carriage, including the following:

- Cocoa not properly ventilated during the voyage will become sweat-damaged.
- Sweat damage is also likely to occur if the shipping line or its agents do not use kraft paper in unlined containers.
- Loading cocoa onto bolsters (large metal pallets) is likely to result in greater weight loss than other modes of shipment. This is because there is more airflow around the cocoa.
- In holds and/or containers that are not fumigated, infestation may originate from the fabric of the ship and/or container.
- Cross-infestation from other cocoa on board may occur if the shipping line is not vigilant.
- Containers and holds may be contaminated with substances that are either detrimental to health or have a smell that may affect the cocoa (e.g. rubber).
- Improper handling by the ship's stevedores may result in a higher than normal incidence of torn and slack bags.

## Documentary elements

This is sometimes as important as the cocoa itself. It is necessary that the shipping documents are produced correctly and promptly. Exporters depend on the documents in order to be paid. Slow documents reflect badly on the exporter, as well as on the carrier.

## Modes of shipment

Where exporters have no choice as to which carrier to use (there being, for example, only one shipping line to the destination contracted), they may find it difficult to press for any improvements of service but attempts should always be made. Some decisions may be taken away from the exporter. For example, should the cocoa be containerized or be shipped break-bulk? Modern ships favour containerization and, providing proper safeguards are applied, it has been shown that this method tends to reduce insurance claims. The carrier may use containers 'at the ship's convenience'; even break-bulk cargo is accepted.

Other modes of shipment, for example LASH (lighter aboard ship) barges, have also been used for cocoa. Shipment of cocoa in bulk to Europe has continued to grow in popularity, principally because of the cost savings to be made. It can be up to a third cheaper than the conventional bagged shipment. Exporting in bulk, however, is for large tonnages, using well-established shippers chartering specific vessels. Ships are often of a particular construction (for example, double-skinned hulls). This method is not at present suitable for small-scale cocoa exports.



### *Chartering*

A ship, or part of a ship, may be hired, either for a particular voyage or for a particular period of time. Such arrangements may be made through a ship-broker or direct with a shipping company. Charter-parties for a particular voyage will be 'non-demise', i.e. the ship-owner provides the crew. Should the ship be on a time-charter, it could be 'demise or 'bareboat', where the charterer provides the crew. There are many different variations of charter-parties, and although there are recognized charter-parties for specific commodities, there is not yet one for cocoa.

Chartering is again not the ideal method for the small exporter. The tonnage is unlikely to warrant it, and it would probably result in unnecessary complications. For example, if difficulties were to occur on the voyage, the exporter may be held liable for restitution, which would not happen if the cocoa were to be transported by an established shipping line.

Before chartering a vessel, exporters should consider three aspects in particular. The first concerns the points specified in the sales contract.

The CAL contract is the most explicit, stating:

Only Liner Bills of Lading in a form regularly used for shipment of the goods from the port of loading shall be issued and presented for payment under the contract.

In addition, the buyer is given further protection by clause 17.1.5.:

In the event of shipment on a chartered vessel and the cargo is discharged at a port other than the port of discharge as a result of a charter party dispute, all costs of forwarding the cargo to the place of final delivery shall be for the Seller's account.

The Seller shall give a Guarantee (which the Buyer may require to be issued or counter-signed by a first-class bank acceptable to the Buyer) indemnifying the Buyer in full against inability to obtain prompt release of the goods either on unloading at the port of discharge or on delivery at the place of final delivery.

Again the intention of this clause is to ensure that the buyer is not placed at any disadvantage by terms that the seller may have engaged in negotiating the charter.

CMAA contracts require only that the shipment be clean on board through the bill of lading.

The FCC contract is silent on chartering but states that:

The seller shall present clean direct Bills of Lading made under 'Liner Terms' conditions covering the whole of the voyage...

In other words, should the exporter want to charter, the bills of lading issued would have to be on 'liner terms', so that the buyer is not put at a disadvantage by any chartering terms which the exporter may have arranged.

The second aspect which buyers should note is that if a documentary credit is involved in the payment terms, then charter-party bills of lading are not acceptable, unless specifically included in the credit's required document package.

The third consideration is the age of the ship. This is covered in the insurance clauses of the contract.

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## Marine insurance

Marine insurance cover is usually arranged through a broker although, on occasion, the exporter may arrange matters directly with an insurance company. A broker is often able to locate the best deal for the client, which is not necessarily always with a single company.

Insurance is usually an open cover, which is for all of the exporter's shipments, as opposed to individual ones (known as facultative insurance). Such an arrangement means that the exporter can obtain an insurance certificate without each time having to discuss matters with the broker. In addition, the exporters' loss experience can be more easily analysed, usually at the annual renewal date, with those showing the least losses being rewarded with lower premiums for the following year.

### FOB and CFR sales

Marine insurance is dictated by the terms of the sales contract. Naturally the exporter does not have to provide the buyer with any insurance document for sales made on FOB or CFR (cost and freight) terms, but this does not necessarily mean that no insurance is required at all. The seller is at risk up to the point that the goods pass over the ship's rail or, more practically speaking, up to when the cocoa is in the hold. This means that a prudent exporter should have this risk included under warehouse insurance cover. The CAL contract (which continues to use the abbreviation C&F rather than CFR) gives the seller a degree of comfort in clause 25.1.4:

For sales on C&F or FOB (or similar) terms where the Seller is not obliged to insure the goods, the Buyer shall provide the Seller immediately on receipt of the declaration ... with a copy of a certificate of insurance of the goods ... or a letter of guarantee (to be countersigned by a first-class West European or North American Bank, if so required by the Seller) either confirming that insurance has been effected in relation to the goods ... or that payment will be made against presentation of documents ...

Both FCC and CMAA contracts do not have an equivalent clause for FOB contracts although CMAA states in contract 3A that:

In the case of cost and freight contracts only, satisfactory letter of guarantee (or policy of insurance) if required, to be promptly deposited with Seller for his security.

### CIF sales

The three associations' contracts are generally very similar here, but differ in some details. Naturally, all require that the seller provides insurance cover evidenced by an insurance certificate presented with the other shipping documents. The marine insurance is based on the concept of 'all risks' but the actual terms are different for the associations.

#### *All risks*

All risks insurance does not quite mean what it says! Exporters should note that the following are not covered:

- Willful misconduct of the assured: protects the insurer from fraudulent claims.
- Loss in weight: includes ordinary wear and tear and loss of moisture.
- Unsuitability of packing: includes stowage in a container if the container was stuffed by the assured or packed before the attachment of the insurance.

- Inherent vice: includes infestation of the goods, unless it can be proved to be cross-infestation from another cargo.
- Delay: loss proximately caused by delay even though the delay results from an insured risk.
- Insolvency of the ship: the buyer of the cargo may be held to be covered if it can be shown that the cargo was bought in good faith under a binding contract.
- Radioactive forces: loss by any atomic weapon of war.
- Unseaworthiness: claims occurring from the unseaworthiness of the ship will be paid only if the party concerned was unaware of the ship's condition.
- War: losses caused by belligerent acts of war or civil war, capture, arrest, restraint, detainment (piracy excepted) and derelict weapons of war.
- Strikes: losses caused by, or resulting from, labour disturbances or from a political motive.

The last two items above are covered under separate clauses, specifically required under the three associations' contracts and usually included as a matter of course by brokers.

### **CAL**

CAL contracts require that cover be for 101.5% of the invoice value and be subject to Institute Commodity Trades Clauses (A). CMAA and CAL terms vary in their cargo clauses and commodity clauses. The main difference is that CAL commodity clauses provide for limited liability on losses arising from the insolvency of the carrier and unseaworthiness of the ship.

Like FCC, CAL explicitly requires the vessel at the time of shipment to meet the requirements of the Institute Classification Clause.

### **CMAA**

The insurance clause under the CIF contract states:

...Marine insurance shall be covered by Seller at the price of this contract with Lloyds and/or equivalent first class underwriters or insurance companies, for whose solvency Seller is not to be responsible, on the terms of and according to the Institute of London Underwriters' Cargo Clauses (extended cover) with particular average (warehouse to warehouse), including theft, pilferage, short and non-delivery, shipowners' liability, and loss or damage by freshwater, oil, other cargo, sweat, hookhole and other loss or damage however arising, whether by perils of the sea or otherwise all irrespective of percentage; including war, riots, strikes and civil commotions as per Institute War Clauses and Strike Clauses (extended cover) current and available at time of shipment. Insurance policy to be made available in English translation promptly, upon Buyer's request.

Broadly speaking the terms are similar to those required under FCC terms – the Institute Cargo Clauses (A) being similar to those of the *Police maritime*. The differences lie more with the specifications in the contracts themselves. For example, cover under CMAA terms is for 100% of the provisional invoice, with none of the other requirements which FCC places on the provider of insurance cover. Although not stated, the ship would also have to comply with the Institute Classification Clause in terms of age and seaworthiness.

### **FCC**

The FCC CIF contract requires that *inter alia*:

The goods shall be insured by the seller at the contract price plus 2 per cent with first-class insurance companies, subject to the following conditions:

- full reimbursement without deduction of franchise, and
- subject to the all risks conditions of the “Police Française d’Assurance Maritime sur Facultés” in force in France at the time of shipment.

The seller shall insure the goods against risks of war, mines and strikes; his obligations shall be limited, however, to the terms and conditions in force in France at the time of shipment. Any excess over 0.50% of the total amount of premium for risks of war, mines and strikes shall be for the buyer’s account and the latter shall be informed of this at the latest at the time of declaration.

In addition, under the list of shipping documents required for payment, the insurance certificate should show that it is ‘premium paid’ and ‘complies with FCC conditions’. Exporters should also note that the vessel should comply with the *Police maritime* in terms of age and seaworthiness.

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## Phytosanitation

It is all too common for cocoa to arrive at its destination infested by live insects. This is extremely unsatisfactory from the receiver’s point of view, and there are severe contractual and legal consequences for the seller. Although endemic to cocoa, infestation in parcels can often be avoided if enough care and attention are taken. Prompt evacuation in clean surroundings prevents the build-up of insect activity and reduces the incidence of infestation. This is not always possible and therefore export authorities will at times refuse to issue a phytosanitary certificate (i.e. certifying that the cocoa is not infested). In these cases they will require that the cocoa be fumigated. Further aspects of phytosanitation and pest control are discussed in chapter 7 of this guide.

### Fumigation

Fumigation is achieved by the application of gases (fumigants) that are toxic to the pests infesting the cocoa. They mix with the atmosphere at a molecular level and are capable of diffusing throughout the whole of the cocoa stack. Fumigants should not be confused with smokes, mists or fogging, which may neither penetrate the stack nor affect infestation at the centre of the parcel. Such spraying or fogging is useful as a preventive measure, but is not effective to clear a parcel that is already infested. There are two types of fumigant currently in use – methyl bromide and phosphine.

#### *Methyl bromide*

Methyl bromide ( $\text{CH}_3\text{Br}$ ) is usually available as a pressurized liquid in cylinders or cans. It is four times heavier than air. It therefore needs to be thoroughly mixed during its introduction and during the fumigation period, to ensure that the gas is evenly distributed throughout the stack, which it penetrates very effectively. As methyl bromide is an ozone-depleting gas, it is controlled by the Montreal Protocol and therefore should be used only when no other suitable fumigant is available. The time needed for the fumigant to be effective can be as little as 24 hours, depending on the ambient temperature.

#### *Phosphine*

Phosphine ( $\text{PH}_3$ ) is generated by the atmospheric action of either aluminium phosphide in tablet, pellet or sachet form, or magnesium phosphide in plates or strips. As fumigation will take longer to be effective than with methyl bromide, care has to be taken that correct levels of gas concentration are maintained. Unfortunately, the improper use of phosphine in some countries has resulted in

phosphine-resistant insects, which require longer periods of fumigation with higher doses. Depending on the temperature, effective fumigation can take from 5 to 16 days, but never less than 96 hours.

### ***Concentration-time-product***

The effectiveness of a fumigation is dependent on the type of fumigant used, the quantity deployed and for how long. This is usually called the ‘concentration-time-product’ (CTP) and is expressed in gram-hours per cubic metre. In other words: how much, for how long in a given space. The value obtained from this depends on what pest is being targeted and its stage of development. For example, the CTP for most insects using methyl bromide at 20°C (68°F) is 150. CTP values for phosphine are more difficult to apply as some insects have developed tolerance to this fumigant.

### ***Modified atmospheres***

This is a third option that is being developed, but is not yet commercially available. It involves the use of carbon dioxide and controlled or modified atmosphere treatment. Such action may in the end not be suitable for export commodities, as the stacks will need to be hermetically sealed for long periods in order for it to be effective. Depending on the type of infestation, this can be from two to eight weeks. However, trials are underway on a method applying a vacuum. This aims greatly to reduce the necessary treatment time.

Exporters are urged to make sure that, should they need to fumigate a parcel, they employ the services of a responsible company – for two main reasons. First, it ensures that the fumigation achieves its objective in the time available with the least use of the fumigant. Second, it also ensures that the fumigant is used with due caution. Not only does fumigation present a danger to personnel but it is also a risk to the environment.

### ***Phytosanitation aspects of contracts***

Infested cocoa arriving at destination is likely to attract the attention of the buyer’s warehousekeeper, the consequences of which will usually be found in the sales contracts (with the exception of the FCC’s).

### ***CAL***

The proposed new wording of the CAL contract changes the emphasis from ‘whether a parcel needs to be fumigated’ to the more objective criterion of ‘whether or not the parcel is infested’. It is easier to determine whether a parcel is infested or not, than to decide whether or not it needs to be fumigated, the latter being dependent on the buyer and use of the cocoa. (It should be understood that some final users of cocoa do not wish to fumigate for fear of residues, so even if parcels arrive infested they may not be fumigated.) The clause says the following:

#### **24.1.1. Agreement on presence of infestation**

If, at the time of weighing and/or sampling ... the Buyer considers that live infestation is present in the goods, the Buyer shall invite the Seller or his supervisor to agree on the same, and if the Seller so agrees, the Buyer may proceed with fumigation of the goods.

#### **24.1.2. Failure to agree on infestation**

If the Seller or his supervisor disputes the presence of live infestation in the goods, the Buyer shall refer the matter to a local official body (e.g. Environmental Health) or to a competent independent surveyor whose decision on the presence or absence of live infestation shall be final and binding on both parties.

#### 24.1.3. Seller fails to appoint a supervisor

If the Seller fails to appoint a supervisor to inspect the goods after having been given notice to do so by the Buyer, then the decision, in writing, of the Buyer or his sampler and/or weigher as to the presence or absence of live infestation shall be final and binding on the Seller.

#### 24.1.4. Costs

If pursuant to any of the above sub-Rules, goods are agreed or deemed to be infested, the Seller shall reimburse the Buyer with all costs necessarily incurred with fumigation of the goods and all costs and expenses necessarily incurred by the Buyer which are additional to those which the Buyer would have incurred if live infestation had not been present. The Buyer shall undertake to do all that is reasonable to protect the Seller's rights of redress against third parties arising out of the infestation of the goods.

### **CMAA**

Imports of foodstuffs into the United States are governed by FDA and CMAA contracts reflect the importance of that. The relevant clauses state that:

Cocoa shipped against this contract is guaranteed by Seller to pass inspection by and comply with the standards of the US Government.

In the event, however, that a shipment is detained by the Government solely on account of infestation, Buyer shall promptly arrange for fumigation. If the Government releases the shipment after such fumigation, the Buyer shall accept the cocoa, Seller paying all costs incurred in connection with fumigation. If the Government refuses release, Buyer may reject the cocoa and all costs incurred in connection with fumigation shall be paid by the Seller. Where a shipment of cocoa against this contract is rejected by Buyer because

(a) entry or release has been refused by US Government,

or

(b) by mutual agreement or at arbitration.

Seller shall, upon Buyer's demand, replace such cocoa within the contracted period by delivery at destination specified herein, and/or by shipment from origin or any intermediate point, within 30 days after either of the contingencies enumerated under (a) or (b) has been established, whichever is the later period. Buyer shall hold in custody such unacceptable cocoa for the account of Seller until replacement and/or reimbursement for payment made against such cocoa, plus freight, insurance, labor, cartage, storage, interest and other bona fide expenses incurred by Buyer, have been paid; and Seller agrees to effect reimbursement of the principal amount of these expenses immediately upon Buyer's demand.

In the event that Seller cannot make replacement the contract shall be closed out as provided for under the heading "DEFAULTS".

As may be seen, exporters to the United States need to ensure that parcels will arrive in a clean condition. Indeed, the above clause has been interpreted to mean that the buyer has the right to claim the cost of fumigation even if there is no detention by FDA. This is because FDA allows 'zero tolerance' in live infestation. Infested cocoa is by definition in violation of the law and must be brought into compliance by applying appropriate reconditioning measures, such as fumigation. In the case of Brazilian, Indonesian and Malaysian cocoa beans, which are subject to a policy of automatic detention, the cost of fumigation is borne by the buyer, but compensation is provided through a lower FOB price.

### **FCC**

The FCC contract is the exception here. Although the contract is silent on this point, in practice the costs of fumigating infested parcels are either amicably



settled in discussions between buyer and seller after the supervisors have advised their respective clients of the state of the parcel, or – as has happened in the past – the costs give rise to an insurance claim.

When matters are not resolved, the buyer then has to claim arbitration, thereby incurring additional costs. Some exporters have made the fumigation costs part of their insurance cover. This has had mixed results. Proof of infestation is expensive to produce and payment from insurance companies can take time.

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## Cooperation between exporter and importer

Both parties want the export to proceed with the least amount of difficulty. Therefore the first stage in their cooperation is for them to agree that some formal contract terms are required.

The second is to acknowledge that there is no need to compile individual contracts as the main trade associations have already drawn up the requisite contract forms and terms. Most of the difficulties faced by export shipments have been anticipated in the associations' standard contract terms. This action alone (together with the parties' understanding of the terms) is a major step forward in the cooperation between buyer and seller as it removes many of the obstacles that could otherwise needlessly interfere with the export.

The exporter, looking for repeat business, wants the export to run smoothly. Sometimes this is not the case and while it is not advisable to pester buyers with every nuance of the shipment, it is advisable to keep them informed if serious difficulties are in prospect. If matters become critical it is advisable to ensure that the items are recorded in a form that could be used in defence against a claim by the buyer.

Note that for contracts on CAL or FCC terms, an advice by telex is required, unless the contract allows the use of facsimile transmissions.

Sadly, there will be occasions when differences between the two parties escalate to a level where third-party intervention becomes necessary. Hopefully, the parties will have chosen to use one of the associations' contracts, in which case an arbitration service becomes available.

Arbitration has several advantages. It is cheaper and the awards are made more quickly than by going to court. In addition, the arbitration panel will be composed of people familiar with the practices of the trade, as opposed to a court, in which it is unlikely that the judges will have any direct experience of the current customs of the cocoa trade. It should be noted that, under the associations' contracts, the arbitration procedure has to be followed before invoking the law. Claiming arbitration does not stop either party from following the judicial route, but it does require the arbitration procedure to be followed first.

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## Supervision on arrival

When assessing the risks of selling overseas many exporters concentrate, almost to the exclusion of everything else, on the question of payment for their produce. Being paid on time is indeed important, but so too is safeguarding the basis on which the produce is brought to account.

In CIF landed weight sales, for example, it is essential to ensure both that the weight is correctly determined and that the samples drawn (from which the quality of the parcel will be established) fairly represent the cocoa. All too often

it is assumed that weighing and sampling are easily achieved and that the expense of a supervisor is not warranted, i.e. the buyer's warehousekeeper will perform these 'simple' tasks.

In assessing the risk factors associated with these tasks the following questions are important:

- In whose interest is it that the weighing process occurs with minimum disruption?
- Who is responsible for the weight once it is established?
- In whose interest is it that the sample drawn reflects the quality of the parcel?

It may appear to be in everyone's interest that weighing takes place without undue disruption, but it should be remembered that it is specifically the receiving warehousekeeper who will be providing the labour and equipment for the task. Accuracy may be sacrificed for expediency. Likewise, once the weight is established and appears on the warehouse warrant (negotiable warehouse receipt), it is the warehousekeeper who is responsible for subsequently delivering that weight, within the acceptable parameters of any additional loss in weight. Any errors on the side of 'light' weights on intake would be in the interests only of the buying party.

As far as sampling is concerned it is in both parties' interests that this is carried out correctly. If the sample shows the quality of the parcel to be worse than it actually is, this favours the buyer. If it shows it to be better, it favours the seller.

Examples of weighing errors include:

- The use of improper or inaccurate scales.
- Insufficient time allowed for the scales to settle when recording a weight.

Sampling errors can be made by:

- Drawing samples using an inappropriate trying-iron (the diameter may be small, thereby naturally selecting the smaller cocoa beans forming the sample).
- Sampling an insufficient number of bags.
- Drawing insufficient sample material per ton.
- Improper quartering of the sample material to form the arbitration samples.

The above is not meant to imply any malfeasance or bad faith on the part of the buyer or agent (the warehousekeeper). Differences can easily occur when expediency is the dominant motive and it is very much the role of the independent supervisor to ensure that accuracy is maintained. 'Independent' here means a company that has no involvement (such as trading the commodity or warehousing) in cocoa, other than supervision.

By having an independent supervisor at the point of discharge, the seller's interests are better protected. Take, for example, a case where an exporter is informed that, on arrival, the shipment contains a number of wet damaged bags. The supervisor may be in a position immediately to identify the cause of the damage as, perhaps, the improper use of kraft paper in the containers, allowing water condensation on the container walls and ceiling to affect the bags. The exporter is then able to ensure that this fault is rectified in subsequent shipments.

Without this type of feedback, little corrective action can be taken. It is invaluable for the exporter, who is seeking repeat business and trying to improve customer service.

In appointing a supervisor, exporters should make full use of their agent at discharge.



## CHAPTER 7

# Post-harvest treatment of cocoa

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### Maintaining quality

When cocoa leaves the farm, its quality is usually fairly well established. Anything that happens from then on, except possibly some additional drying, can only lower the quality. It is therefore most important that the cocoa delivered by the farmer has been properly harvested, fermented and dried.

Farmers know either by tradition or from experience how to do this. Otherwise, information is readily available from exporters and their agents, as well as from support services personnel.

The better the care given to cocoa before and at the farm gate level, the less the likelihood of problems occurring later when the cocoa is in transit. Such care must also be extended to when the cocoa moves from the farm to the point of export. Inland warehouses and carriers must therefore follow strict pest-control programmes to prevent the cocoa from being attacked by insects or rodents. Post-harvest quality controls also require that the cocoa be packed properly in food-grade sacking material.

Even with proper attention, however, things can go wrong – especially as cocoa beans are particularly susceptible to insect infestation, specifically by the cocoa moth (various varieties). This can cause problems at the point of importation.

Historically, infestation has been relatively easily dealt with by fumigation, using either methyl bromide or phosphine (a gas released from aluminium phosphide or magnesium phosphide), as discussed below. However, methyl bromide has been declared by the Montreal Protocol to be a Class II ozone depleter, while phosphine is increasingly coming under scrutiny as an environmental and safety hazard. It is therefore necessary for alternative methods of controlling infestation to be found.

The United States Food and Drug Administration (FDA) requires cocoa imports not to have any live infestation at all, regardless of the type or state of development of the insects encountered. Furthermore, FDA takes the position that cocoa does not pose any significant health problems. Consequently, it sees no need to make any changes to the criteria that it applies to this commodity. However, differences in the handling of cocoa beans, in fact, exist across various FDA districts.

In the future, there may be some international pressure on FDA to remove the 'zero tolerance' provision. Many potentially practical alternatives to methyl bromide can leave a certain amount of non-offensive live insects in the cocoa.

Current practices are described below. Some of the issues surrounding alternatives to fumigation are also discussed, as well as their present status and potential future.

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## Pest control

### Current practices

#### *Methyl bromide*

Under the phase-out plan mandated by the Montreal Protocol and adopted by the United States Government from 1 January 2001, methyl bromide ( $\text{CH}_3\text{Br}$ ) may no longer be produced in, imported into or exported from the United States. Similar deadlines extending into 2005 exist for other importing countries, while most exporting countries may continue to use the substance until 2015. However, cocoa has been promised, and will probably be given, a pre-shipment exemption under the quarantine provisions of the Protocol. Nevertheless, this provision is most likely to be temporary. Such an exemption is meant to control the introduction of foreign pests not currently in a country (e.g. khapra beetle, Mediterranean fruit fly). All of the insects found in cocoa are already well established in the importing countries. Technically, therefore, cocoa is not qualified for this exemption.

#### *Phosphine*

Currently, the preferred alternative to methyl bromide is phosphine ( $\text{PH}_3$ ), a gas released from magnesium phosphide and aluminium phosphide. Phosphines, however, face severe restrictions under the new regulations of the United States Environmental Protection Agency (EPA). These regulations establish a low tolerance of three parts per million (the original proposal was 0.03 ppm, which would have effectively removed it altogether as a practical fumigant), and it will no longer be possible to use phosphine in transit. Overall, these new restrictions, which respond to stricter environmental and safety standards, make the use of phosphine for cocoa much less attractive. They are, however, applicable only in the United States and would therefore not affect pre-shipment treatment at origin.

Furthermore, phosphine is a fire hazard and is corrosive to delicate electronic equipment such as microprocessors and computers. This makes it undesirable as a space fumigant.

#### *Dichlorvos*

Although an overwhelming set of documentation shows this widely used organophosphate to be safe for mammals, EPA is determined to ban the use of dichlorvos (DDVP) in areas where it may reach children. While it is currently being used as a fogging agent in cocoa warehouses, it may eventually be proscribed by EPA. DDVP has also become comparatively expensive.

#### *Pyrethrins and pyrethroids*

Pyrethrins are extracts of certain daisy varieties and are stabilized in oil. They are relatively safe for mammals. They are particularly effective as a short-term aerosol insecticide, especially lethal to flying insects on contact and useful in disrupting the life cycle of insects. Pyrethrins are considered 'natural' and can be used instead of dichlorvos. The effectiveness of pyrethrins is enhanced by the addition of certain compounds, although these render them unacceptable for labelling as 'organic'.

Pyrethroids are synthetic pyrethrins and have essentially the same characteristics as natural pyrethrins. While not qualifying for the “natural” label, they can be used on cocoa in the warehouses’ automatic fogging installations in the same fashion as pyrethrins.

## Potential alternatives

### *Carbon dioxide*

Carbon dioxide (CO<sub>2</sub>) causes insects to open their pores and greatly increases the efficacy of several insecticides and fumigants. It is also a fumigant in its own right.

Methods of application are described below.

- *Under high pressure.* Cocoa on pallets is placed into large pressure vessels in which the atmospheric air is replaced with highly pressurized CO<sub>2</sub>. The method is 100% effective (it kills all insects in all stages) after only minutes of application.

The disadvantages are the high cost of capital investment, labour intensity and the need to transport the cocoa to the facility. There have also been reports that the German chocolate industry is no longer interested in the system as it is suspected of causing the migration of cocoa butter from the nib into the shell.

- *Under atmospheric pressure.* Malaysia has conducted several experiments on storing cocoa under CO<sub>2</sub> at atmospheric pressure. The results were positive, but it took a long time (two to three weeks) to achieve an adequate kill. Moreover, being absorbed by the cocoa beans, the gas had to be fed continuously into the warehouse. Costs can be high.

The use of combustion gas in warehouses is essentially a method of storage under CO<sub>2</sub>, as the source of the gas is butane burners installed at the warehouse.

- *With ECO<sub>2</sub> Fume™.* This product, which consists of 2% phosphine and 98% carbon dioxide, has been presented to the cocoa community. It is registered in the United States for use both as a structural fumigant for non-food items and as a fumigant for food. It is said to be as effective as 100% phosphine but eliminates most of phosphine’s disadvantages. It is reported to be widely used in Australia and New Zealand.
- *With heat.* Heat will kill infestation, and it will also increase the effectiveness of phosphine and carbon dioxide. Heat treatments are discussed more fully below.

### *Neem*

Preliminary studies conducted by the United States cocoa industry have established the potential usefulness of neem extracts as both insect repellents and insecticides on cocoa. Further studies are underway and being pursued as a priority.

### *Diatomaceous earth*

There are various versions of this substance, which is also known as silica gel or *kieselguhr*. It is a naturally occurring fossilized silicon abrasive. It is non-toxic to mammals (and is often used as a free flowing agent in food products, such as

flour and sugar). It will break the insect's (outer) skeleton on contact, causing it to dehydrate. However, it is effective only in low humidity environments, which generally rules it out for use on cocoa, especially in producing countries.

### ***Carbonyl sulphide***

Carbonyl sulphide (COS) is a by-product of oil refining, and refineries have little use for it. It is a highly effective soil fumigant, can be used for space fumigation, and could probably also be sprayed over cocoa beans. It decays within a few hours into harmless substances. It has been known as a pest-control material for some decades, but its incendiary characteristics have made it somewhat impractical and unpopular.

One oil-refining company has developed a process of stabilizing these characteristics in an aqueous solution, thus making it suitable for application by sprayers and foggers. This would appear to be, potentially, a comparatively safe material to use but further product development is needed.

### ***Heat treatment***

Heating systems exist which can heat up a container of wheat to a temperature high enough to achieve a total kill of any live infestation. Another method of applying heat would be to use giant microwave ovens. This system has not been tested on cocoa, however, and it is doubtful whether the treatment would be satisfactory, given the high fat content of cocoa beans.

Furthermore, it takes a long time for heat to penetrate a pile of cocoa beans, and its effect on the structure of cocoa butter remains unknown. More research is needed before conclusions can be drawn.

### ***Vacuums***

An American company has developed a system of placing cocoa beans, in their sacks, into a plastic bag and removing the air to achieve a good vacuum. Large-scale trials are currently underway. This method is already being used by importers of organic cocoa beans, as it is considered an organic pest control system in itself.

### ***Propylene oxide***

The manufacturer of propylene oxide (CH<sub>3</sub>H<sub>6</sub>O) is claiming this chemical to be an ideal substitute for methyl bromide, but the industry is less enthusiastic about it. It has various drawbacks, including its flammability – it is a Class 3 flammable substance – and the fact that it is permitted only for cocoa powder. Regulatory permission for its use on other cocoa products could be difficult to obtain.

Moreover, its application depends on a minimum temperature of 27°C (80°F) and it has to be applied in a vacuum, requiring the cocoa to be brought to the fumigation facility. The possibility of using a mixture of propylene oxide and carbon dioxide is now being explored, however, and appears to hold some promise as a practical alternative to methyl bromide.

### ***Refrigerated storage***

Storing cocoa beans in refrigerated warehouses may be less expensive than first assumed, as the need for cooling is not as great as in regular reefer warehouses (the cost of cooling increases exponentially with the lowering of temperatures). The reduced, or total absence of, the need for insect control may be an important positive cost factor, however.

### ***Bacillus thuringiensis (B.t.)***

*B.t.* is a bacterium that parasitizes the caterpillars of some harmful moths and butterflies. Although it is highly effective and generally approved for a wide variety of uses on food, the cocoa industry is no longer interested in this material. *B.t.*'s spores survive the cocoa bean roasting process and are easily confused with those of the noxious *Bacillus cereus*, something that is of major concern to the food industry.

Potential resistance from customers to the use of this substance is also a major reason why the industry does not regard it as an acceptable alternative. Objections are particularly strong among makers of aseptic products who may not have the ability to distinguish between the two organisms.

### ***Freeze-out***

In parts of the United States that experience extremely cold weather, some limited success has been achieved by opening cocoa warehouse doors in the winter. The marked reduction in infestation facilitates pest control in the ensuing warm periods. But there are only a few places cold enough to use this option. There is also a suggestion that condensation after the freeze-out can cause warehouse structures to corrode.

### ***Pheromones***

Pheromones are sex attractants (natural or synthetic) and can be used to bait insect traps. The idea is to trap the males so that, in their absence, the females will not lay eggs. Pheromones would not appear to be particularly effective in a cocoa pest-control programme. It is impossible to catch all the males, especially before they mate. Their primary usefulness lies in their ability to trap insects for the purpose of identifying the species.

### ***Parasitic wasps***

Certain species of wasp (e.g. *Microbracon hebetor*) can paralyse and kill insects. While such wasps are easily introduced (in some cocoa warehouses they often appear spontaneously, especially when heavy moth infestation occurs), they would not be acceptable under FDA's current 'zero tolerance' policy.

### ***Gamma-ray irradiation***

Although it has received regulatory approval explicitly for cocoa, gamma-ray irradiation is no longer an option. One reason is that it is inherently uneconomical because the cargo has to be moved to the facility. Another is that trials conducted by the United States industry have shown that irradiation alters the flavour of cocoa. And finally, there is widespread consumer resistance to the whole idea of irradiated processed food.

### ***Ultraviolet light***

'Black lights' with electric grids which attract and kill flying insects are being used worldwide in many food-processing establishments, but not in cocoa bean warehouses. They are not considered cost-effective, because they require a comparatively high use of electricity to operate.

## **The need for change**

Although many of the above alternative substances and practices provide a certain level of infestation control, none are as practical and economical as the currently used methyl bromide. The development of integrated pest

management programmes, which use a combination of the above methods, is therefore becoming increasingly important. The process of post-harvest treatment of cocoa has become more complex and the simple remedy of fumigation at the point of arrival may soon cease to be an available option.

It should also be borne in mind that many of the above methods and substances may lack some of the fortuitous additional benefits of fumigation, namely rodent and other non-insect pest control. It will be necessary to address this aspect as well, otherwise a 'bad' solution will merely be replaced by a worse one.

Further information can be found on the websites of EPA, [www.epa.gov/docs/ozone/mbr/mbrqa.html](http://www.epa.gov/docs/ozone/mbr/mbrqa.html), and the United Nations Environmental Programme (UNEP), [www.unepi.org/ozat/links/mebr.htm](http://www.unepi.org/ozat/links/mebr.htm).

## CHAPTER 8

# Standard contracts

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The trade in physical cocoa beans and primary cocoa products is usually based on contracts negotiated individually between buyers and sellers. These negotiations are carried out mainly by telephone, fax or e-mail.

The role of the agent or broker is generally to facilitate the definition of the details of the agreement. An agent located in an importing market and acting for an exporter is likely to have a better understanding of both local market conditions and the needs of the potential buyer. The use of these exporters' agents is still common, but the use of brokers acting between the trade and its processing customers has been greatly reduced, and in the United States has nearly disappeared. Modern communications and, above all, the concentration of the processing industry into fewer, larger firms, are making these services obsolete.

Whether negotiated through an agent, broker, or directly between seller and buyer, the agreement of sale is laid down in a document called the standard contract. Over time, conditions of sale in the cocoa business have evolved into certain standard practices and customs. Most of these have been captured in standard contracts, the use of which avoids the need for each party, for each transaction, to go over and agree on every single detail.

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## Current standard contracts

The following cocoa associations have issued standard contracts:

- *Cocoa Association of London Ltd (CAL)*. The CAL contract is primarily used in trade with Europe as destination.
- *Cocoa Merchants' Association of America, Inc. (CMAA)*. The CMAA contract specifically addresses trade practices between origin countries and United States importers, and between United States importers and the United States domestic trade and industry.
- *Fédération du commerce des cacaos* or FCC (previously known as AFCC). FCC contracts are more specific to trade between French-speaking West Africa and destinations other than the United States.

CAL and FCC cooperate closely in the harmonization of their standard contracts. Further details on the three associations are given in chapter 24.

The standard contracts were originally printed on approved forms. They were sold to the trade, with the details pertaining to the particular transaction left blank (contract date, seller, buyer, agent or broker, quantity, quality, time of shipment or delivery, terms of sale, port of embarkation, port of discharge) and including a space for special conditions. Typically, the buyer or seller (or the agent or broker) would then fill in the blanks and sign the contract. A sufficient



number of originals would then be sent to the other party or parties for signature and return, so that each party to the transaction had a contract with an original signature.

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## Two approaches

### Unenforceable without the seal

There were essentially two approaches to making such contracts available. As the sale of these documents constituted a source of revenue for the issuing associations, CAL and FCC (then AFCC) imprinted a seal on the documents. Without this seal the contract would not be considered valid in the cocoa trade, thus rendering it unenforceable.

### Reference to standard contracts

In the United States, however, the seal was not established because of anti-trust considerations. Consequently, a custom developed of confirming deals simply by a letter outlining the relevant variables (i.e. only the items left blank on the official contract form) and stating that all other conditions would be those of the appropriate standard contract as published by CMAA. This practice started with CMAA contracts I-A and I-B, which covered sales of cocoa ex dock or ex warehouse (contract I-B has now been discontinued). The practice is now fairly common in all trade with the United States and CMAA no longer prints and sells blank forms of the I-A contract.

### Market Rules

CAL took a different approach. Because of the large number of standard contracts required and because CAL's stock of forms frequently became obsolete, CAL established a central rule book containing the specific conditions of the *Market Rules* as well as those of each standard contract. This allowed buyers and sellers to use the confirmation letters as practised in United States trade. To safeguard its policy of insisting on a validation seal, these seals are now obtainable from CAL against payment of a fee; they must be affixed to the confirmation letter to make the contract enforceable in the international cocoa trade. FCC follows a similar approach.

The main disadvantage of having an unenforceable contract (e.g. one without a seal) in the international cocoa trade is that, in the event of a dispute, an arbitration panel will not recognize the contract as valid. The claimant will then not have a forum in which to be heard, and will not get an award or be able to collect one.

In the United States, where such a seal is not required, the CMAA standard contract specifies that disputes are to be resolved amicably or by arbitration in the City of New York under CMAA arbitration rules. This clause is mandatory for contracts between members of CMAA and any other party (whether a member or not). Contract disputes between two non-members cannot, however, be brought to arbitration unless the Arbitration Committee accepts jurisdiction over the case under CMAA rules.

Similar rules govern CAL and FCC standard contracts. One provision in both stipulates that a contract originally written under these associations' auspices for open shipment will automatically modify itself to conform to the CMAA contract provisions if the buyer chooses to have the cocoa shipped to the United States rather than elsewhere.

### Conditions are negotiable

It is important to remember that, even if they are on a printed form or in a rule book, conditions are negotiable. Sellers and buyers are free to include additional conditions or to modify any of the clauses.



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## The most important clauses

The most important clauses in a standard contract are described below.

- *Quality.* Quality is to be determined on the shipment's arrival at its port of discharge. The contract stipulates how quality at destination is to be established and the steps to be followed if there is a dispute, notably the procedures and time frames governing the drawing and distribution of samples for arbitration purposes. Under the CMAA contract, sellers are in default if they do not supply cocoa which conforms to FDA rules. Some associations, notably CAL, may from time to time issue different standard contracts for cocoa products.
- *Terms of sale.* There is a standard contract for each term of sale (FOB, CIF, etc.) which sets out what the term means. The CMAA contract stipulates that its terms are those of the Incoterms.
- *Shipment.* The period in which shipment must take place and the type of shipment (direct or indirect, partial or full) are to be indicated. The date of the ocean bill of lading becomes the official date of shipment. CAL and FCC issue separate contracts for shipments of cocoa beans in bulk in containers and in mega-bulk.
- *Shipment declaration.* The contract specifies the procedures to be followed by the seller in regard to the content, timing and method of transmission of the shipment declaration to the buyer.
- *Insurance.* The contract requires the minimum coverage customarily used in the cocoa trade. If buyers wish to have more protection, they must negotiate it.
- *Weights.* The contract specifies how final weights are to be established and the modalities for determining the final billing price.
- *Packaging.* The contract requires the cocoa to be packed in new, sound and suitable sacking material.
- *Payment.* While the actual payment terms are left to be filled in by the parties, the contract stipulates how payment is to be made in the event of a casualty at sea.
- *Defaults.* The contract establishes how defaults are determined and what steps are open to the aggrieved party to seek redress, such as filing a demand for arbitration.
- *Supervision.* The contract defines the procedures to be followed by the party or parties who wish to retain superintendence, both at origin and at destination.
- *Duties, taxes.* The contract stipulates who has to pay for what taxes and duties.
- *Marking.* The contract shows the minimal markings to be applied to the bags.
- *Shipping documents.* The contract stipulates the minimal documentation that the seller must provide to the buyer.
- *Force majeure.* The contract defines *force majeure*. It also shows the steps to be taken if the shippers are prevented from fulfilling their contract obligations by *force majeure*.

- *Other provisions.* The contract describes what happens in case of insolvency, failure or other inability of the buyer to make payment, or of any of the parties making an assignment to creditors without the prior approval of the other party. It provides that rights and obligations are to be transferred to the legitimate successors of either of the parties.
- *Arbitration.* The contract stipulates that any dispute arising out of this contract shall be settled by arbitration and determines what arbitration forum is to be given jurisdiction over the dispute.

It is recommended that traders maintain contact with the appropriate cocoa trade associations and obtain the latest issues of trade rules, contract provisions and arbitration rules. The rapid evolution and restructuring taking place within the cocoa business means that modifications are becoming increasingly necessary.

## CHAPTER 9

# The cocoa trade in importing countries

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### The importer's role

The first customers for cocoa in export markets are usually import merchants, rather than processors or manufacturers. These merchants purchase from exporting countries and sell on to industry. In this role as intermediaries, they fulfil the important function of physical commodity distributors.

Their job is to find the most attractive price for the cocoa in the market, while shopping around in producing countries to find the best offers. They purchase the cocoa for their own account, even on the rare occasions when they are able to sell it simultaneously (back to back). In most instances, however, industrial buyers are not interested in buying at exactly the same time as producers or exporters are willing to sell. Thus, importers will purchase when it suits the exporters, and will sell when it suits the processors. In this way, they create market fluidity and a smooth flow of product from the farm to the factory.

Some processors and manufacturers do buy direct from exporters. These transactions, however, are normally confined to fine or flavour cocoas or trade between firms with long-term relationships, e.g. firms belonging to the same group. Nestlé, for example, may buy direct from an exporter in Côte d'Ivoire and have the local Nestlé office assure its quality before shipment. Archer Daniels Midland may buy from SIFCA, its partly owned exporting company in Côte d'Ivoire.

Generally speaking, processors and manufacturers prefer to deal with importers in their own countries. This eliminates any overseas involvement on their part as well as all the potential complications of handling transport and regulatory matters on the way from port of embarkation to the receiving pier at the port of destination. Moreover, given the increase in the contract performance risks inherent in privatization, cocoa bean users do not have to worry about shippers' defaults, as the importer assumes that risk and will deliver cocoa from a different supplier if the first one defaults.

The same situation applies to quality risks. As the standard contracts require quality to be determined at the point of destination rather than at the point of embarkation, importers need not worry about superintendence and quality controls in the producing country.

**Box 6****Who is who in the trade**

*These are just some of the key players in the cocoa trade. It should be noted, however, that the terminology used to describe participants varies in different parts of the world.*

- ❑ **Merchant.** *Anyone involved in the commercialization of cocoa beans, or any other commodities. In producing countries, merchants may be intermediaries, acopiadores, traitants, exporters, etc. In consuming countries, they may be dealers, futures merchants, etc.*
- ❑ **Dealer.** *A company or individual taking a physical position in the market, usually located in a consuming country. A dealer will be long (own goods as physical inventory or as paper inventory) or will be short (having sold goods still to be bought at a later date). A cocoa dealer or dealership can be compared with a car dealer in that the latter owns a stock of cars but does not manufacture them, and buys for the purpose of reselling. Cocoa dealers have to be well financed. They create profits in the resale and do not usually work on commission.*
- ❑ **Trader.** *Individual employed by a cocoa dealer, whose expertise and ability to buy and sell contribute to the success of the dealer. Some chocolate companies call their purchasers “traders” even when the resale is modest. A true trader has the authority to decide on the right moment to buy and sell. It is somewhat misleading for some order takers to be called traders.*
- ❑ **Broker.** *An individual or house that buys or sells cocoa for the account of a third party. Brokers do not take a physical position and they never own or owe cocoa. They are go-betweens. They never take title to the goods and never build a profit in the operation – which is something a dealer does.*
- ❑ **Agent.** *This is normally a broker who represents a specific party either as its selling agent or its purchasing agent and works for a commission. As selling agents, they may be residents of an importing country, representing exporters. As purchasing agents, they may have a long-term relationship with several buyers and may sometimes receive, inspect, store and ship the goods.*

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## An exporter's first sale

The biggest hurdle for an exporter to clear is the first sale. As the relationship between exporters and importers is essentially one of trust, each party must know with whom they are dealing. Most importers maintain their own representation in producing countries, either through their own offices or through agents. Exporters are therefore best served by dealing with these agents, rather than going direct into the consumer markets and trying to find a buyer. The names of importers in consumer markets can be obtained from trade associations in the relevant countries.

From the importers' point of view, having a local agent or office in the producing country means that they are better informed about the standing of the exporters, their reputation, their financial resources and their ability to perform in the areas of quality and contracts. The function of the importing trade is described elsewhere in this guide.

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## Classifications and import duties

The Harmonized Commodity Description and Coding System, generally referred to as the Harmonized System (HS), is a multi-purpose international product nomenclature developed by the World Customs Organization (WCO). It comprises about 5,000 commodity groups, each identified by a six-digit code, arranged in a logical structure. The system is used by more than 170 countries as a basis for their customs tariffs and for the collection of international trade statistics. Over 98% of international trade merchandise is classified under HS.

HS contributes to the harmonization of customs and trade procedures, as well as the non-documentary trade data interchange in connection with such procedures, thus reducing the costs of international trade. The system is also used extensively by governments, international organizations and the private sector as the basis for internal taxes, trade policies, the monitoring of controlled goods, rules of origin, freight tariffs, transport statistics, price monitoring, quota controls, compilation of national accounts and economic research and analysis.

HS assigns a six-digit code to general categories. In most countries, these codes are broken down to a more detailed level referred to as the tariff line, the level at which national tariffs are specified. The European Union uses an eight-digit coding system called Combined Nomenclature (CN). The CN coding for cocoa powder with 0% - 5% sucrose, for example, is 18061015. The main categories for cocoa beans and cocoa products are listed in the box below.

Most industrialized countries, including EU Members and the United States, as well as some eastern European countries and the Russian Federation, do not levy any import duty on cocoa beans. Cocoa liquor is also free of import duties in most industrialized countries. If it originates from the ACP countries (Africa, Caribbean, Pacific), for example, it benefits from their special relationship with EU under the Cotonou Agreement (which replaced the Lomé Convention in June 2000). The same applies to other cocoa preparations in HS categories 1801 to 1804. Chocolate is subject to differing regulations and tariffs in many countries.

Some countries allow the importation of cocoa beans by processing industries under a drawback system whereby processors can recoup all or part of the import duty after they have exported the processed product.

There is no comprehensive, low-cost database available on worldwide tariffs. An overview of the best sources for each country can be found on ITC's website at [www.intracen.org](http://www.intracen.org).

**Box 7*****Cocoa beans and products in the Harmonized System***

<b><i>HS code</i></b>	<b><i>Product description</i></b>
1801	<i>Cocoa beans, whole or broken, raw or roasted</i>
180100	<i>Cocoa beans, whole or broken, raw or roasted</i>
1802	<i>Cocoa shells, husks, skins and other cocoa waste</i>
180200	<i>Cocoa shells, husks, skins and other cocoa waste</i>
1803	<i>Cocoa paste</i>
180310	<i>Cocoa paste, not defatted</i>
180320	<i>Cocoa paste, wholly or partly defatted</i>
1804	<i>Cocoa butter, fat and oil</i>
180400	<i>Cocoa butter, fat and oil</i>
1805	<i>Cocoa powder, not sweetened</i>
180500	<i>Cocoa powder, not sweetened</i>
1806	<i>Chocolate and other food preparations containing cocoa</i>
180610	<i>Cocoa powder containing added sugar or other sweetening matter</i>
180620	<i>Other chocolate preparations in blocks, slabs, bars, liquid, paste, powder, granular or other bulk form, over 2 kg</i>
180631	<i>Other chocolate and cocoa preparations in blocks, slabs or bars, filled</i>
180632	<i>Other chocolate and cocoa preparations in blocks, slabs or bars, not filled</i>
180690	<i>Other chocolate and cocoa preparations, not elsewhere specified or included</i>

*PART THREE*

*Cocoa trading*





## CHAPTER 10

# Characteristics of a commodity exchange

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Modern cocoa trading is unthinkable without involvement in commodity exchange trading. Anyone wishing to trade in cocoa successfully must have a good understanding of the purposes, the functions and the workings of the exchanges.

The primary purpose of a commodity exchange is to transfer the price risk of a commodity from those who do not want to accept it (hedgers) to those who do (speculators).

This transfer is achieved by buying and selling standardized futures or options contracts at open outcry, or through a computer network (screen trading) at a public market place. The 'place' is an organization serving buyers and sellers by allowing them to establish the price by open bargaining, based on supply and demand.

The exchange does not establish the price itself, but allows price discovery because of its open access to the public. To believe that exchanges set the prices is akin to believing that thermometers cause temperatures.

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## Long history

Up to 1500: public market places

Commodity exchanges date back to the fifteenth century. Prior to that, public market places were essentially where buyers and sellers met in the open, exchanged information and struck bargains for the sale of goods which were physically readily available either at, or in close proximity to, the market place.

1500 to 1800: emergence of international commerce

In the sixteenth century, trade with the Americas became extensive and this led to the emergence of long-distance international commerce and the need for purchase and sale commitments for delivery in the future, rather than immediately or on the spot. With seaborne trade especially, the buyer would know in advance what the goods were like, the quantity available and generally where they would be delivered – but would be uncertain about the exact time of delivery. This feature was eventually addressed in the nineteenth century, when a fixed delivery period feature was added.

1800 to 1900: fixed delivery periods

It then became possible to introduce a standard contract for a specific commodity in a specific quantity to be delivered at a specific location at a specific point in time at a specific price. Buyers could purchase such a contract in the expectation that prices would go up. The contract could then be resold at a profit, without need to take delivery. Likewise, sellers could sell the contract in the expectation that the price would fall and that they would be able to purchase back their delivery obligation at a lower price, thereby making a profit.

1900 to 2000: specific terms introduced

In today's terms, if buyers want to take delivery, they hold their contract to its maturity – they stay long. If sellers want to make delivery, they likewise hold their contract to maturity – they stay short. A buyer who holds contracts is said to have a long position; a seller who holds contracts, a short position.

International trade in commodities is extremely volatile and subject to high risks. Unexpected and drastic fluctuations in prices are just one of them, but an important one. It had previously been possible to purchase insurance for loss or damage to the goods while in transit. It had also been possible to receive letters of guarantee that contracts would be fulfilled, but until the advent of the standardized contract for future delivery, the price risk could not be covered. The introduction of the standardized contract for future delivery allowed buyers and sellers to protect themselves against the price fluctuations of the commodity in which they dealt.

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## Physical and futures markets

In modern commodity trading there is a clear distinction between the physical and the futures market. The physical market deals in specific grades and origins of cocoa beans or products, at quantities, qualities, delivery times, packaging, and price and payment conditions to be negotiated by private treaty between individual buyers and sellers. It is also known as the actuals market or the cash market. Anyone who has the means, opportunity and willingness to enter this business can have access to it.

The futures market, on the other hand, is a restricted market, where an individual must use the services of an intermediary to buy or sell commodities. This is done under a clearly specified standard contract that can be bought and sold only at a specific geographical location during prearranged trading hours. Only the price and a specific month of delivery can be negotiated. Everything else (quantity, quality, packaging, place of delivery and payment conditions) is standardized and non-negotiable.

Moreover, trading in futures contracts requires the availability of sufficient financial means to meet contractual obligations. These means must be placed at the disposal of an intermediary who takes responsibility for contract performance on behalf of the trader vis-à-vis the other party, as discussed later in this chapter.

### The physical market

By buying the commodity from producers and selling it to processors, commodity dealers see their function as distributors. They represent therefore the intermediary element, providing a market for producers when no users are willing to buy and selling cocoa to users when producers or shippers at origin are not selling.

When they are holding the commodity for future sale to their customers, they are exposed to the possibility that the value of the commodity may decline. Likewise, if they contract with a processor for delivery in the future in the expectation that they can purchase the cocoa from the producers before delivery becomes due, they run the risk of losing money if prices increase. They have to cover their obligation at a higher price than the one at which they sold their cocoa. The existence of futures markets allows them to protect themselves against these price risks. This aspect is discussed later in this chapter.

Over the years, the physical market has evolved into certain standard practices and customs of the trade. For example, most contracts between sellers and buyers of physical cocoa are covered by prearranged conditions laid down in standard contracts or market rules set out by the main international cocoa trade associations – The Cocoa Association of London, Ltd (CAL), the Cocoa Merchants' Association of America, Inc. (CMAA) and the Fédération du

commerce des cacaos (FCC) in Paris. The conditions and contingencies contained in these contracts and rules cover most conceivable occurrences that may befall buyers or sellers, and they give clear definitions of these traders' obligations. They also specify how disputes are to be resolved, in most cases by providing for an arbitration procedure.

All conditions in the market rules and standard contracts apply only if the buyer and seller have not agreed alternatives. For example, the CMAA standard contract for shipments free on board port of origin provides that the buyer must specify a vessel to lift the cocoa within the contractual shipping period. However, if buyer and seller agree, it may be the seller who is given the choice of vessel instead.

A physical cocoa trader must be familiar with the conditions specified in the market rules and standard contracts. The main features are discussed separately in chapter 8.

Confidentiality in the physical trade

In contrast to the futures market, where prices are published immediately upon a sale, negotiations between buyers and sellers in the physical market are confidential. The terms and conditions of such contracts are not to be released without the consent of both parties.

Knowledge of cocoa handling is necessary

The physical cocoa market also requires a good knowledge of the actual handling of the cocoa, i.e. the various production processes, preparation, packaging, warehousing and transport, as well as quality differentiation and the seasonality of the crop. In this respect, cocoa is a demanding commodity, and newcomers should be prepared to undergo extensive education in the physical aspects of the commodity before venturing out on their own.

The physical market presents risks in the form of price changes. In addition, it offers risks of physical loss, lack of fulfilment of contract obligations and quality deterioration.

The spot market is a subdivision of the physical market, but deals only with physical merchandise actually available at a specific geographical location, e.g. 'spot warehouse Le Havre'. The spot market is for immediate delivery and immediate payment, i.e. less than two months. The forward market, on the other hand, refers to deliveries beyond the third calendar month.

## The futures market

Only one risk – price change

The futures market is also called the exchange market or the terminal market (from the French *marché au terme*). It provides pre-set contracts with commitments to deliver – or to receive – given quantities of cocoa at the expiry of the contract, e.g. after two months. There is no specification of origin or quality properties but the cocoa has to pass certain tests of quality and bean size. The contract provides assurance that the only risk a buyer or seller is exposed to is the change in the overall price level of the commodity. It is therefore ideally suited to those who wish to assume this risk, but do not want to get involved in all the intricacies of physical trading.

Those interested in assuming market risks are known as speculators. As their gains and losses depend on their long or short positions vis-à-vis market values, they are also called positional traders. Speculation is also known as positional trading. The opposite are those who wish to avoid or mitigate against price risks in order to focus their attention and resources on the commodity's producing, distributing or processing factors. They are known as hedgers, functional traders or simply commercials, as they provide a multitude of services to their customers. In the United States, the Government periodically publishes the open positions held on the exchanges by speculators and hedgers.

In economic terms, speculators are essential to the existence of futures markets. No one can offset a risk unless there is someone willing to assume it. Speculators are generally serious students of the commodity or of price trends, and they make their trading decisions after weighing their odds to make a price gain and finding it in their favour. They indeed add, and often provide, the liquidity needed for the survival of futures contracts.

There are also speculators who take a very short-term view of markets, often a day or less. They tend to liquidate their positions during the day and close the business day without having any market exposure. They generally operate on the floor of the exchanges and are known as locals, or day traders. Like the longer-term speculators, they add to the liquidity of the markets and are often the sole source of liquidity at any given point in time during the trading day.

Not all commodities are equally suited to exchange trading. For example:

- For speculators, there must be a degree of price volatility in the market.
- The commodity should also be reasonably uniform or at least interchangeable, i.e. highly fungible.
- The market must be liquid, i.e. it should be traded almost constantly, so that buyers and sellers can negotiate their deals virtually instantly at any time the markets are open.
- Finally, the commodity must be suitable for storage, so that deliveries can be made out of warehouse once the incoming crop or newly arriving supply (for example, metals from mining) is no longer available. The ability to store, however, has become less of an issue as it is now possible to devise a system which allows the contracts, at the expiration of the contract delivery month, to be closed out through a cash settlement. Such arrangements are fairly common in financial futures markets, such as index futures, where storage does not exist. However, cocoa requires a physical delivery, unless the buyer liquidates his or her contracts before the expiration of the delivery month.

The first formally organized cocoa exchange was founded in New York City in 1925, in the wake of a boom and crash in cocoa prices a few years earlier. London followed suit in 1928. Both markets had universal appeal, while the later emergence of the Amsterdam and Paris markets catered for more local requirements. In strictly theoretical terms, the New York market was the most suitable forum, as it allowed delivery of all cocoa beans, regardless of origin (albeit at predetermined premiums and discounts according to bean size, quality and origin). It has therefore become the buyer of last resort, and all persons selling cocoa on the New York exchange are assured a market for their beans, provided these are of food grade.

Whether as buyer, seller, trader or speculator, anyone negotiating a futures contract on the exchange must use a futures broker, who assumes the contractual obligations with the exchange. It is the broker's responsibility to ensure that the buyer or seller meets the criteria guaranteeing orderly liquidation, either through an offsetting trade or through a delivery.

At the end of the trading day, all contracts bought and sold on the exchange are matched up, as there must be a buyer for every seller. This matching up is known as clearing. The brokers must be members of the clearing house. They must tally up all their outstanding contracts in their books and 'bring them down to market', i.e. calculate the market value and the transaction value, and pay the clearing house the difference between the two. If they have a balance in

their favour, they will receive a sum from the clearing house. Commodity futures trading is thus a ‘zero sum game’ – for every loss there is an equivalent gain.

The international cocoa trade, processors and the chocolate manufacturers are not the only users of futures and options contracts. They are also used by managed funds, institutional investors, investment funds and options specialists.

Difference in terminology: London prefers ‘terminal market’ while New York calls it a ‘commodity exchange’

### **Box 8**

#### **LIFFE and NYBOT**

##### **LIFFE – London International Financial Futures and Options Exchange**

*The London Cocoa Terminal Market Ltd was established in 1928. It has undergone several transitions over the years and is now part of the London Commodity Exchange (LCE) under the London International Financial Futures and Options Exchange (LIFFE).*

##### **NYBOT – New York Board of Trade**

*The New York Cocoa Exchange Inc. was founded in 1925. In 1978, it merged with the New York Coffee & Sugar Exchange to form the Coffee, Sugar and Cocoa Exchange Inc. (CSCE). In 1998, CSCE and the New York Cotton Exchange together formed the New York Board of Trade (NYBOT).*

##### **Points in common**

- Lot sizes of cocoa are 10 metric tons.
- Delivery terms: e.g. warehouse portside in the consumer market.
- Delivery months: March, May, July, September and December.
- All trading through brokers.

##### **Differences**

- Trading currencies (£ and US \$).
- Sampling and grading procedures.
- Types of cocoa that can be delivered. LIFFE is more restrictive, which is reflected in the generally higher prices.
- LIFFE uses computer screens (from late 2000) whereas trading at NYBOT is by open outcry on the floor.

*The total volume of cocoa futures traded varies significantly from year to year. The two markets have had about the same annual turnover during the 1980s and 1990s. The total volume of futures on the two markets combined is more than 10 times the tonnage of the world’s annual cocoa crop. Only a small percentage of cocoa futures contracts actually results in delivery of beans.*

*The LIFFE and NYBOT websites and websites on trading and prices are listed in appendix V.*

**Box 9****Daily prices of cocoa beans**

The daily prices of cocoa beans can be obtained from many different sources. One of them is the website of the International Cocoa Organization (ICCO) at [www.icco.org](http://www.icco.org).

An example of a screen image from the ICCO website is given below.

	Current 18 August 2000	Previous 17 August 2000
ICCO daily price (SDRs/tonne)	675.68	676.89
ICCO daily price (\$US/tonne)	885.30	887.70
London futures* (£ sterling/tonne)	628.333	627.500
New York futures* (\$US/tonne)**	830.333	831.667

\* Average of three nearest active futures trading months

\*\* Midday prices corresponding to London closing prices

The ICCO daily price for cocoa beans is the average quotation of the nearest three active futures trading months on the LIFFE and the NYBOT.

The monthly and annual averages of ICCO daily prices can be found on the same website.

The reason for expressing the daily prices of cocoa in SDRs (special drawing rights) since 1986 is given in appendix III.

## Futures commission merchants

A member of the clearing house must meet specific, strict financial and professional standards as set out by the exchanges. Members will carry their customers' accounts and guarantee to the clearing house that the customers meet their obligations. For this service they receive a commission, which is negotiable between the clearing house and the customer. Clearing house members are therefore also known as futures commission merchants or FCMs.

If a customer's account shows a loss between the transaction value of his or her contracts and the market price, the commission merchant is entitled to collect this sum from the customer. This payment request is known as a variation margin call, and must be met at once. If the customer does not meet this demand, the commission merchant is obliged to mitigate against the losses by liquidating the customer's position.

To allow customers sufficient time to meet the payment requests arising out of variation margin calls, FCMs require them to make an original payment when they open a trading account. The minimum level is determined from time to time by the clearing house. Generally speaking, it is equivalent to about 10% of the market value of a contract. Individual FCMs may set higher levels, however, if they find it appropriate and may tailor the amount to the financial standing of their customers.

This original payment is usually known as the 'original margin'. It may also be described as earnest money. If variation margin calls are made, they are taken out of this earnest money and the customer must then replenish the original amount as the original margins are not a down payment, as is often assumed. It is required regardless of whether the transactions involved are purchases, sales or options.

The exact nature of the customer-FCM relationship varies from country to country. In the United States, it is strictly regulated by the Commodity Futures



Trading Commission (CFTC), an independent Federal Commission established in the mid-1970s and responsible directly to Congress. CFTC, in turn, supervises not only the exchanges themselves, but also the National Futures Association (NFA). NFA rules and regulations apply to all participants in the futures trade under the doctrine of self regulation, i.e. they are enforced by the organizations themselves and have the force of law.

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## Cocoa options

An attractive addition to the utility of futures contracts was the introduction of options. An option is a contract to provide an exchange contract at or before a specific date in the future at a specific price. Contracts promising the delivery of cocoa are known as puts, while those allowing the buyer to request delivery are referred to as calls. The use of options as trading tools is discussed later in this chapter.

Options have suffered from a bad reputation. In the past, those writing them, i.e. those at the other end of the transaction, were sometimes not in a position to meet the obligations when the options were called in (struck); they dealt in naked options. However, under stricter exchange and CFTC rules, writers of options must now have an adequate cover in their position, and options contracts are handled through the clearing house. They are as safe as futures. They are a most useful instrument in volatile markets.

Options have a price, or premium which is determined in a way similar to that used for futures. However, options often represent a bargain in terms of price risk avoidance.

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## Hedging: the link between physical and futures markets

As the exchange is the buyer of last resort, it is not a reliable supplier to the industry. Under the principle of marginal utility only the cocoas that are least appealing to users will be delivered to the exchange. Buyers will therefore look to original sources of supply or the international cocoa trade for their requirements in the physical market. They will contract with individual sellers according to their own needs. However, they will use the exchange price as a reference for the physical market value of the cocoa, which may be expressed as either a premium or a discount on the futures market. This premium or discount is known in the cocoa trade as the differential. (It is also called basis in some other commodity markets, which may be a somewhat confusing expression.)

Differentials are essentially the price risks that processors, traders and producers are willing to accept, as they relate specifically to each contract. Their inherent risks are, or should be, well understood by the traders.

Therefore, the exchange and the physical markets complement each other. Differential contracts allow a dealer to purchase cocoa beans from exporters, often called shippers, with the exporters having the option of determining the moment when to establish the final billing price. At the same time, the dealer can offer that cocoa to a processor, with the processor having the option of establishing the final price at the moment of his or her choice. The option, in both cases, must be exercised within the time-frame specified in the contract. Differential contracts are the foundations on which the international cocoa trade rests.



## Examples of hedging operations

### *Straight hedge*

A trader buys African cocoa beans at an outright price to be delivered out of the crop arriving several months in the future and sells simultaneously an equivalent quantity in the form of futures contracts for a delivery time corresponding to the purchase. If the price of cocoa goes up, the trader loses on this sale, but earns a compensating profit with the gain made on the purchase of the African beans. At a later date, when the trader finds a buyer, such as a cocoa processor, the trader buys back his or her short futures contracts while selling the African cocoa, thereby lifting up his or her hedge. In this fashion, the trader does not really care how the market behaved between the time the African beans were purchased and the time they were sold to the trader's customer. The trader has fulfilled the trader's primary function, namely to act as the distributing agent for the producer and the source for the buyer.

### *Differential trading – using price-fixation contracts*

Instead of buying cocoa beans at a fixed price and selling futures, the dealers buy cocoa from an exporter on a price-fixation contract. This is a contract in which all details are agreed except the outright price. The contract will show a premium (or discount) to the futures price, usually of the month following the last delivery period in the contract. It is a condition of the contract that the futures price will be agreed or fixed within an agreed time limit. The parties agree on a premium and no further action is needed at that stage.

Later, a processor agrees to buy the cocoa from the dealers, also on a price-fixation contract and also at a premium to the futures market. If the dealers receive a higher premium over the futures price from the processor than they have to pay to the exporter, they will have made a functional trading profit. Once the exporter determines that the price should be fixed, the dealers sell the corresponding tonnage in the futures market, i.e. they go short of the futures, and when the processor determines to fix the price, the dealers buy back their short position.

If the dealers are showing a profit on the differentials (i.e. they have a higher premium on their sale than on their purchase), then they may try to fix both their purchase and sale contracts at the same time, so locking in their profit with no market risk. Fixing one side but not the other means the dealers are at risk of the market moving against them. By using the futures market in this fashion the dealers are able to control their risk, thereby offering a service to buyers and sellers. For the exporter the futures market allows him or her to have an independent way of price discovery.

### *Options trading: a safeguard against missed opportunity*

Here is an example of the practical use of an option contract. A producer expects a crop of, say, 100 tons of cocoa beans, to be shipped six months from now. The market has been in a downtrend and the producer is not sure that things will get better. He or she therefore sells the crop at the current market price and is at least assured of getting this price. However, the processor does not want to lose out if the market should turn around. So he or she buys 10 call options at the current price. If the market continues to fall, the processor simply lets the options expire and is assured of getting the original sale price for the crop. If the market goes up, the processor must sell the crop at the original contract price, but he or she now calls in the 10 contracts at the original price and sells them at the now higher market price.

***Options trading: protection against unexpected market advances***

A processor receives an inquiry from a customer for the purchase of 100 tons of cocoa beans. The customer wants a firm quote, but requires a few days to think it over. If the processor buys the beans in anticipation of the sale, he or she runs the risk that the market price will fall and the customer will walk away from the quote. If the market price goes up in the meantime, the customer is likely to accept the quote. Therefore, the processor buys 10 call options at the current price. If the market falls and the customer walks away, the processor lets the options expire. If the market goes up and the customer accepts, the processor strikes the options and converts them into physicals. If the customer finds a better bargain elsewhere and turns the processor down, the processor still strikes his or her options and sells the cocoa at the higher market price.

There are many more examples of hedging operations involving both futures and options contracts. The exchanges provide interested parties with easy-to-understand material, both on the Internet and in printed form, which is generally available free of charge.

## CHAPTER 11

# Risk management

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Cocoa trading, like all other commodity trading, has an inherent set of risks. It is generally good policy to identify these risks and set up a formal and realistic programme of how to manage them, preferably in writing and communicated to all participants in their respective trading activities. Risk management may be seen as a series of actions that modifies the risks from less acceptable to more acceptable. It could perhaps be described as a policy of ‘replacing the devil you don’t know with the devil you know’, to use a variation on a familiar saying.

The three main categories of risks are identified and described below. In some cases methods of modifying them are suggested.

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### Physical risks

Physical risks are the traditional dangers to which all goods are exposed. For example, a warehouse may burn down, a ship may sink, the shipment may become contaminated or infested, a truck may be hijacked.

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### Performance risks (partner risks)

Performance risks are perhaps the most common. They can be defined as the risks of partners in a transaction not fully living up to their obligations. A farmer may not deliver the crop after having signed a contract to do so, or may only deliver part of it. A shipper may not ship at all (default) or may not ship within the terms of the contract. A carrier may deliver the goods to a point other than that required by the bill of lading. A buyer may refuse a delivery for some reason, or fail to make payment.

Performance risks are at their highest where there is a low sense of morality and responsibility. Risks tend to be lower where there is greater trust between the buyer and the seller. The perceived risk facing the buyer of cocoa from a new or unknown source is clearly greater than the one attached to a transaction between firms who have dealt with each other for many years and know each other well.

Where doubts exist about a party’s willingness to live up to contractual obligations, there are such instruments as performance bonds, which may be required of the party. Such bonds are typically provided by insurance companies. A delivery obligation can be secured either by a letter of credit, which will exchange payment for shipping documents, or by an arrangement through a bank for cash against documents, as discussed elsewhere in this guide. Moreover, most contractual obligations in cocoa are covered by an arbitration clause which enables the party against which the default has occurred to obtain a ruling compensating it for damages suffered as a result of the default.

However, such a ruling is of little consequence if the defaulting party is either bankrupt or has disappeared altogether, making any enforcement of an arbitration award impossible.

Performance risk perhaps provides the best illustration of a fundamental principle of all risk management – the greater the protection, the more costly it is. There is a tendency to underestimate risks and to understate the cost-benefit relationship of risk management. A performance bond and a documentary credit system are expensive, and their cost in the form of premiums, commissions and fees will have to be absorbed by the party that has the greater interest in closing the contract.

Buyers who have well-established relationships with their suppliers, whom they can trust, will not need such costly instruments of protection from these suppliers. With new and unknown suppliers, however, buyers are most likely to insist on protection in one form or another. Such suppliers will probably have to absorb the extra costs, just to be competitive.

Performance risks would tend to be less where there are marketing boards or similar government marketing bodies, such as the former *caisses de stabilisation*. The government would purchase cocoa, directly or indirectly, at a fixed price from the farmers and sell it on to the world market at the price of the day. The quality would be controlled by government agencies at the point of purchase from the farmer as well as at the export point. The government would either be the outright seller, or would have a back-up guarantee of the export contract. Consequently, buyers would have to assume fewer, if any, performance risks. Such guarantees come at a high price, however. Farmers in Côte d'Ivoire or Ghana, for example, which had marketing bodies, tended to receive a substantially lower percentage of the international FOB price than farmers in countries with free marketing systems, such as Indonesia.

The best way of assessing performance risks is by a thorough review of the potential partner's capitalization, ownership, management reputation and past performance. Even then, it is wise to have someone on the spot to supervise actual contract performance.

#### Superintendence company

An importer may retain a superintendence company whose function is primarily to safeguard the interests of the principal, for a fee. Deliveries may be structured so as to give the company custody of the goods prior to export. The functions of a superintendence organization are covered in more detail in Part Two of this guide.

Potential partners should also be evaluated in the context of the economic and political climate in which they operate. A country with a reputation for constant political and economic turmoil may place the most reliable individual partners in a position where their performance is impaired or made impossible.

A failure to perform may not necessarily result in a disaster. There have been cases when default may, in fact, have been beneficial to the other party. For example, a shipper may fail to perform on a contract because of a shortfall in a crop, but the buyer is no longer interested in the business and is quite happy to cancel the contract at no cost to the defaulter. These situations are exceptional, however, and should not be taken as a basis for policy making.

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## Market risks

The market price for a commodity may go down after buyers have contracted a purchase from a farmer, exporter or dealer. In this case, the buyers own goods that are priced above the market, which will either cause them a loss, or make them less competitive. In the opposite situation, market prices may increase after the purchase. Here the sellers have lost the ability to take advantage of the higher prices, while their competitors, who have not sold, can now cash in at the higher price levels.

As defined above, market risks are the potential losses that can result from a change in the market value of an asset in the dealer's book. Generally speaking, the merchants' main objective is to make a profit by rendering a service to the cocoa community. They buy from their sources and sell to their customers. The sources of supply normally have different immediate interests and capabilities from those of the processors. Dealers purchase cocoa from a particular source (farmer, exporter, etc.) at terms suitable to the seller and transforms these into terms suitable to a buyer. From this activity, the dealers hope to earn a profit. To achieve this objective, the dealers must, on balance, buy at lower prices than those they sell at, because they are not paid a commission.

The least risky of such transactions is the back-to-back deal. On 1 June, dealers buy, say, 100 tons of cocoa from an exporter on the basis of cost, insurance and freight (CIF) for shipment to Amsterdam in July at £600 per ton. They sell the same shipment simultaneously, also on a CIF basis, to a processor in the Netherlands at £610. They are making a profit of £10 per ton. If the market goes down to, say, £550 per ton during the period 1 June to the time the shipment is declared and the papers of ownership (e.g. an endorsed ocean bill of lading) are turned over to the processor, the shipment will have lost £5,000 (100 x £50) of its value. The dealers are not concerned, however, because they have already sold the goods to the processor, who will pay them the contract price of £610 per ton when ownership is transferred. In other words, the dealers have managed their market risk by selling a contract identical to the one they bought and at the time they bought it.

In practice, such deals are extremely rare. While processors may prefer to do business with a party they know and who is located in Europe rather than in the country of shipment, there is really very little reason for them to pay the extra £10 per ton for the privilege. They would expect dealers to provide additional services beyond merely turning over an ocean bill of lading. This means that dealers are forced to assume ownership of the cocoa for a period without having a buyer for it. Thus, while the dealers own the cocoa, its market value can change and they are faced with the possibility of losing money if prices go down.

The magnitude of price fluctuations on the cocoa market is generally greater than the size of average profit margins. Dealers must therefore protect themselves against losses. They may do this by making a sale of cocoa at the same time as making the purchase. Such offsetting transactions are known as hedging. Dealers who obtain their profit primarily out of buying from source and selling to users are said to engage in functional trading.

Functional trading

There are moments when dealers have a strong view of the market, i.e. they may feel that the prices will go up. They are said to be bullish. If they make a purchase and immediately hedge this purchase with a corresponding sale, they will have no opportunity of benefiting from the increase in the market value. They may, depending on how strongly they feel about the market, delay such an offsetting transaction. They have, in this case, an unhedged position, as discussed elsewhere in this guide.

Unhedged position

Risk management is very much a matter of judgement. The main point to remember is to modify the risks inherent in trading in such a way that they are more manageable. A dealer may have a good indication that the crop in Ecuador, for example, is falling short of expectations. Prices for Ecuador cocoa may therefore be expected to go higher. However, there may also be a good possibility that the crop in West Africa is going to be good, which would drive prices lower.

Dealers therefore may purchase Ecuador cocoa for their own position, but sell West African cocoa short. They then have to put themselves in a position to make a profit from the fact that the price of Ecuador cocoa is getting stronger relative to West African cocoa, even if the absolute level drops off.

They have thus modified the risk of exposure to the cocoa market overall into an exposure in the Ecuador market only. In other words, they feel that it is impossible to forecast the future behaviour of the overall cocoa market, but they are comfortable with the idea that prices for Ecuador cocoa, relative to the rest of the market, will be firmer.

It is most important, though, that any trading firm has a clear and well-understood set of rules and position limits in order to rein in any temptation to make a killing. Most losses incurred in commodity trading are caused by unhedged transactions. Clear risk assessment and supervision of the execution of the policies are essential if a firm is to survive. There are many more examples of how these market risks can be modified. The most common practice is to buy physicals and sell futures as a hedge, and vice versa – any transaction in physical cocoa can be offset with a transaction in the futures market. The reason for the popularity of the futures hedge is to be found in the very nature of the futures markets themselves. The only risk a buyer or seller has to assume is the market risk. With standardized contracts, supervision of the market's operations by statutory bodies (futures exchange rules have the force of law) and the guaranteed credit system through the clearing feature, a hedger does not have the worry of all the important risks which are ever-present in the physical market.

## CHAPTER 12

# Regulatory aspects of cocoa trading

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International trade in cocoa beans and primary cocoa products is regulated mainly by the importing countries. It is therefore important for traders and shippers to adhere to the requirements set by the buyers, if shipments on arrival at the country of destination are to gain easy entrance.

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### Examples from the United States

The provisions imposed by the United States Food and Drug Administration are a prime example of the type of import regulations applied to cocoa. While most other countries do not have the equivalent of this agency, there is normally legislation in place which aims to ensure that imported foodstuffs meet the standards of wholesomeness required. These standards are generally equivalent to those set by FDA, although in some instances they are not quite as restrictive. For example, the legal limits set on mouldy and insect-damaged beans entering inter-State trade in the United States are stricter than those of the model cocoa grading ordinance published by the International Organization for Standardization (ISO). To play it safe, therefore, exporters sometimes adhere to FDA standards, even if the shipments are destined for elsewhere, unless the buyer specifically allows for a lower grade in the contract.

Under United States law, food is subject to detention or to seizure if it appears to have been shipped or held under conditions whereby it may have become adulterated. It should be noted that the food does not have to be adulterated for regulatory action to be taken. Congress has always regarded the right to import as a privilege. Hence, the burden of proof that goods meet regulatory standards rests with the owners. It is not necessary for the Government to prove that standards are not met. This distinction is often overlooked when quality disputes between shippers and importers arise.

### **Automatic detention of imports from certain origins**

Under current policies adopted by FDA a system known as detention prior to sampling is in operation. It is also referred to as blocklisting or automatic detention. Under this system, cocoa (or any other product) originating from certain countries or from certain shippers is automatically detained, regardless of whether there is any evidence that the shipment in question is potentially in violation of a statute. In the case of cocoa, all shipments originating from Brazil, Indonesia and Malaysia are deemed to be infested with live insects. They are automatically detained until such time as the importer can prove to FDA either that the shipment has been fumigated at the port of entry, or that samples taken on arrival show no violation.

It makes no difference, either, that the shipment may have come to the United States via a country other than the original exporting country. A shipment of Brazilian cocoa beans from an Amsterdam cocoa store, for example, will be detained simply because it originated from Brazil.



This policy has caused some discontent among both exporters and governments. Numerous pleas have been made to FDA to lift these policies by the importing trade, the processing industry, exporters' organizations as well as through diplomatic channels. All efforts have so far proved fruitless.

As a result, prior to filing entry papers, importers routinely fumigate with methyl bromide all shipments of cocoa from these origins arriving in the United States and supply FDA with a fumigation certificate. The alternative is to have a sample taken by FDA, analysed in the FDA laboratory and await the results. This is time consuming and costly. Extra expenses are often incurred in pier demurrage, additional cartage and interest charges. Importers are prevented from quickly turning over their capital, which puts an additional strain on their finances.

### **Residue tolerances**

One of the more vexing aspects of regulatory standards is the presence or absence of residues of pesticides. The United States Government, through the Environmental Protection Agency, publishes tolerances of certain chemical residues permitted in imported foodstuffs. Some of these tolerances are product specific. Unless a particular pesticide has been approved for use on a specific product, it may not be present. Thus, pesticides that may be used on fresh fruit may not necessarily be allowed on cocoa. Endosulfan, for example, has been found to be safe and is approved for many uses, but not for cocoa.

Such decisions sometimes appear to be made on the basis of economic and commercial, rather than scientific or health, considerations. The expense and time involved in seeking approval for a particular product, as well as the potential market size, act as a disincentive for chemical manufacturers even to attempt the process.

It is therefore most important for exporters to ensure that the cocoa they ship has not been treated (in the field or in transit) with substances not specifically approved for cocoa. While EPA has determined that raw cocoa beans are a raw agricultural commodity, FDA considers them a processed food. Hence, substances generally approved for use on raw agricultural commodities are not necessarily acceptable to importers of cocoa.

Technically, a food is considered adulterated if an unapproved product has been used, even if there are no residues. In practice, however, the absence of residue will generally ensure that the product is accepted at the import point. Although other countries have restrictions on residues similar to those of FDA, for them the absence of residue makes the product legal and no regulatory action will be taken, even if the cocoa has been exposed to an unapproved substance.

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## **Unauthorized entry of animals and plants**

In addition to the regulators' concerns about food safety and wholesomeness, there are animal and plant safety considerations. The regulations aim at protecting the importing country from the unauthorized entry of animals and plants that could harm existing crops or carry diseases. Typically, importing countries do not allow the entry of cocoa that is infested with live insects. In practice, as cocoa beans have an inherent vice, i.e. live infestation with the cocoa moth, most countries require fumigation or the use of other methods to kill this pest.

It would be wise for shippers to make themselves fully aware of exactly what is permitted in any particular country of destination. The best source of information is the importer. Regulations and restrictions go through a constant process of change and publications on the subject tend to become obsolete very quickly.

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## Jute and sisal bag specifications

Cocoa has traditionally been shipped in bags or sacks. The physical sale contracts of CAL, CMAA and FCC all basically say that bags must be made of a coarse weave roping material. This definition includes jute, sisal and spun-weave polypropylene. The jute bag is the most widely used. It combines good resistance capacity with a relatively modest cost. Sisal bags are primarily used in countries producing the bags themselves. Generally, the contracts also require bags to be new, non-returnable, clean and sufficiently strong.

In the early 1990s, hydrocarbons were detected in cocoa and coffee beans in Europe and contamination became a matter of concern. The presence of hydrocarbons was traced to the use of mineral oil as batching oil in the manufacture of jute bags. Organizations and private companies in India and Bangladesh subsequently developed a hydrocarbon-free lubricant, based on vegetable oil, to soften the jute fibre. It is a non-toxic, biodegradable oil and bags made with it can be classified as food grade.

New specifications for food-grade jute and sisal bags have since been established in close cooperation among several parties, including the International Office of Cocoa, Chocolate and Sugar Confectionery Industries (IOCCC) and the International Jute Organization (IJO). In the case of cocoa, IOCCC specifications 136-46 of June 1999 for jute and sisal bags have been effective since 1 October 1999. They have been endorsed by the International Cocoa Organization. The specifications conform to IJO Standard 98/01, which has three sets of criteria:

- *Analytical criteria.* Ingredients used as batching oils must be non-toxic and approved for use in packaging materials that will come into contact with food. Batching oils must not contain compounds that could produce off-flavours or off-tastes in food packed in jute or sisal sacks.
- *Chemical criteria.* The amount of unsaponifiable compounds shall be less than 1,250 mg/kg. The method described in British Standard 3845.1990 is recommended for the determination of the added oil content of jute yarn, rove and fabric. Method 2.401 of the International Union of Pure and Applied Chemistry (IUPAC) is recommended for determining unsaponifiable matter.
- *Organoleptic criteria.* Jute bags shall be analysed for their olfactory qualities. No undesirable odours, or odours untypical of jute, shall be present. No unacceptable odours shall develop after artificial ageing of the sacks. The ageing procedure to be followed shall be the one described in European Standard EN 766 for use on sacks for the transport of food aid.

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## Unusual incidents

There have been several instances of stowaways on cocoa ships dying on their way to Europe or the United States. Such incidents, in addition to being tragic, can also lead to difficulties with the regulatory agencies at the port of discharge, depending upon the particular circumstances and exactly where the bodies were found. In a signature case in the United States, a cargo was detained for weeks while the Government tried to establish whether it had become contaminated.

## CHAPTER 13

# Financial aspects of cocoa trading

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Most commodity trading operations require a comparatively small fixed investment, but a substantial amount of working capital. As the trader's success is largely the result of skilled operations (and, yes, some good luck), the main investment consists of acquiring and keeping competent staff, and of giving this staff the physical equipment and the necessary finances with which to trade. This equipment is essentially communications hardware: telephone, telex (still being used in some areas), facsimile equipment, and computers with appropriate add-ons and software.

While in theory even a small equity investment can start a cocoa trading operation, in practice the trading margins are such that, to generate a profit, a large turnover is required. It has been suggested that a starting capital of, say, US\$ 10 million, may be just about the minimum required to succeed as an international cocoa trader. Exporting operations can probably do with less.

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## Document trading giving way to added-service trading

Most of the working capital will be required to pay for cocoa being purchased. Historically, the trade consisted to a large extent of document traders and document dealers. A document dealer is a dealer who purchases cocoa from origin or from another merchant on a CIF or FOB basis, and resells it, hopefully at a profit, to a cocoa processor or another dealer, on the same terms. When the shipment is made, the dealer's bank is presented with the shipping documents (e.g. bill of lading, phytosanitary certificate and commercial invoice). The bank accepts the documents, extends credit to the dealer, pays the invoice and turns the document package over to the dealer who then passes it on to his or her buyer. These transactions take place virtually at once. The bank will hold some sort of security (such as a trust receipt) until the dealer receives payment from the buyer and pays back the bank loan.

As these transactions are rapid, it is possible to turn over one's capital many times during the course of the year, perhaps 20 to 25 times. If the traders work for the typical 1% profit margin, they will earn a return of, say, 20% to 25% on an annual basis, while their bank may charge them only the prime rate, or the prime rate plus a modest premium.

Competition among document traders was a problem. These often attempted to increase their profitability by unhedged trading, which is inherently more risky than prudent (functional) trading, as discussed in another chapter in this guide. Thus, many document-trading firms have been forced out of business. They were no longer able to compete with larger, well-capitalized firms, who could offer more flexibility and service in converting their buying terms to selling terms beyond merely passing on original shipping documents.

Moreover, many banks involved in the financing of commodity trading have left the commodity business, either because they found it too risky, or because

they could no longer understand it as they lacked qualified personnel. This development was particularly apparent in the United States, where such old stand-bys as Chase, Morgan Guaranty, Bank of New York, Bankers Trust and Bank of America, have disappeared from the commodity business. The major players in commodity financing are now based in Europe.

The shrinking of the document trading business has given way to another form of commodity trading. This is distributive trading, an added-service or full-service trading, which has been prevalent in the United States for a number of years. Under this type of trading, sales are done on the basis of landed weights, ex warehouse and/or delivered buyer's plant.

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## Working capital

It is obvious that this system requires much larger working capital, as the period between the original payment to shippers and the ultimate receipt of payment from the cocoa processor or chocolate manufacturer may now be a matter of months rather than days. Consequently, the traders' margins must be improved to allow for the slower turnover.

This development has been further aided by the adoption of the just-in-time inventory policy by many cocoa processors. It means that cocoa must be placed into a warehouse and kept for the processors until they are ready to call for it.

Substantial increases in working capital are now required to meet these new conditions. Traders are obliged to look for sources of financing other than the traditional letter of credit and trust receipt system. While in the past commodity bankers were chasing after cocoa traders to extend loans, bankers have now become much sought after. Traders must negotiate special deals and conditions to obtain the flexibility required to meet their customers' new demands.

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## Relationships with banks

Each merchant has special needs and will, therefore, negotiate special conditions with bankers. While some well-capitalized firms may float their own commercial paper and arrange for internal financing of their operations, others may obtain medium-term credits at better than prime rates, against, for example, bankers' acceptances. In most instances, merchants will be required to pledge the physical stocks to which they hold title, such as afloat or warehoused tonnages, to secure the loans.

As a result of these special arrangements, relationships between bankers and merchants have become much closer than they were in the past. A banker will now routinely require merchants to report their total market exposure and position, sometimes even daily. Partial repayments of loans are also required when the merchants are able to draw down margin money from their hedge positions on the exchanges. On the other hand, a shrewd banker will not object to granting additional credit when the hedge position on the exchange requires substantial margin payments. It is, therefore, necessary for the banker fully to understand the functioning of international commodity markets.

As banking regulations change and the distinction between investment bankers, exchange brokers, insurance companies and commercial bankers becomes more blurred, there are possibilities for a merchant to tap into working

capital sources through futures brokers, or even underwriters. Moreover, it may be possible for firms holding physical stock for processors to obtain more favourable credit terms by obtaining support, or a guarantee, from their customers – against appropriate safeguards, of course.

In the commodity business, personal contacts and trust are essential for survival. As most of the business is transacted over the telephone or by e-mail, this trust must be shared with the bankers. Merchants should not feel that the banker is intruding into their business when the latter asks for full documentation on transactions and trading positions. Rather, the merchants should welcome this approach, as it helps them to manage their businesses and to keep an eye on their trading staff.

## CHAPTER 14

# Arbitration

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Arbitration is a method of conflict resolution outside the regular judicial court system. Cocoa arbitration is generally held under the auspices of The Cocoa Association of London, the Cocoa Merchants' Association of America or the Fédération du commerce des cacao.

There are important differences in the rules of the three associations, as well as some similarities. It would be outside the scope of this publication to discuss these differences in detail, except to say that in Europe arbitrators get paid for their services, while in the United States they generally serve for free. In any event, those who wish to follow the arbitration route to resolve a dispute involving cocoa should carefully familiarize themselves with these rules. Copies can be obtained from the offices of the respective associations in London, New York City and Paris.

As arbitration is a means of bypassing the judicial system, disputants, if at least one of them is a member of the association under which the proceedings are initiated, cannot go to court without first having submitted the controversy to arbitration. Courts generally like the arbitration process because it relieves the burden on the judicial calendar and decisions are made by referees familiar with the issues. It is extremely rare for the decisions of an arbitration panel or an arbitration appeals board to be modified or invalidated by the courts.

Parties are not usually required to be represented by attorneys at law. While the fundamental right to have an attorney may not be denied to either claimant or respondent, the specific rules will stipulate who may act as an attorney and in all cases claimants, or respondents, may represent themselves.

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## Quality and technical arbitration

A distinction is generally made between quality and technical arbitration.

As the term implies, quality arbitration is aimed at settling a dispute about the quality of the goods supplied. It can result in:

- A finding of justifiable rejection of the shipment,
- The determination of a discount in case of an inferior, but still acceptable, quality, or
- The rejection of the claim.

In quality arbitration, careful attention must be given to the methods and timeliness of drawing samples of the lots in dispute. Indeed, observance of the time frames set for filing a claim for arbitration and for submitting samples and the required documentation is essential. These time frames are clearly spelled out either in the contracts under dispute, or in the arbitration rules.

Technical arbitration essentially involves all disputes other than quality, and may be demanded in order to establish:



- A default of delivery or payment, or
- A claim for breach of contractual obligations by either party.

Arbitration is a service placed at the disposal of the trade by the three associations and does not involve the associations themselves other than to provide for fielding a panel and administering the proceedings. The associations have no legal hold over a non-member party who does not live by the award, although the aggrieved party has the option of entering the award in judgement in any court having jurisdiction, at which time such an award becomes enforceable through judicial channels.

Arbitration panels and appeals boards are made up of association members, but the three associations differ in the composition of the panels and the methods of selecting panel members. While in some cases each party designates an arbitrator and the arbitrators so designated agree on a chair of the panel, others allow the association to appoint the panel, subject to a limited number of peremptory challenges. Challenges for cause (such as blatant conflict of interest) are unlimited.

In Europe, certain arbitration decisions may be published as precedent, such as the determination of the term 'fair average quality of the season'. But, generally speaking, because arbitration is the case-by-case settlement of individual disputes, decisions do not normally constitute precedents and should not be considered as such. Each claim must be judged on its own merits.

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## Different uses of arbitration

The use of arbitration facilities differs widely across the three markets. While arbitration is quite a frequent and often friendly process in the European markets, it is less common in the United States and is often settled before the hearings take place.

Evidence submitted to arbitration panels need not follow the judicial rules of evidence, to the point that even hearsay evidence is admissible provided the arbitrators are fair and reasonable. Indeed, they have a great deal of discretion on what to consider evidence and what to ignore.

Parties who are not familiar with the processes of arbitration and wish to file a claim should obtain assistance and counsel from an experienced cocoa trader resident in the market in which they wish to arbitrate.

There are some differences among the associations in the rules on postings, i.e. the practice of an association to inform the membership of non-payment of an award. In the United States this is not permitted, essentially because United States law considers arbitration a private settlement between two parties, not involving the association *per se*. By informing the membership of the non-payment of an award, the association takes on the position of an enforcer, which it does not have the right to do (arbitration being a private matter between two parties). It may thus leave itself open to lawsuits claiming libel or defamation of character, and could potentially be responsible for damages.

On the other hand, an aggrieved party who has not been paid is free to enter the judgement in any court having jurisdiction. In this case, the award becomes a matter of public record.

There is also the matter of punitive damages, which a claimant may request. Arbitrators have to take an oath that they will review and judge the evidence brought before them fairly and reasonably. According to the demand for arbitration and the rules of the association, they should not award more than



the claimant is asking for in his or her demand. Punitive damages may be challenged in court, as punishment is a matter which may be decided only by a court of justice (or other specifically authorized government agency), but not by a private panel resolving a private dispute.

It is because of this consideration that the 10% penalty clause for default has been eliminated from CMAA standard contracts. On the other hand, claimants may include in their demands compensation for all damages, actual and potential.

## CHAPTER 15

# The cocoa trade and e-commerce

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As with most other commercial activities, cocoa trading increasingly relies on electronic means for its communications. This mainly consists of the trader sitting in front of a desktop computer linked to both the company's network and the Internet. The fax is gradually being replaced by e-mail. The security of these communications, however, can readily be breached. While the interception and monitoring of a company's trading activities by a competitor may be a rare occurrence, it is a risk that warrants consideration.

The overwhelming majority of the trade still uses physical documentation (paper) in its dealings. While actual negotiations are conducted either by telephone, fax or on the Internet, final agreements, such as contracts, letters of credit and other vital documents, require an original signature and must physically be presented to the respective parties. This presentation in most cases requires the overnight facilities of international express delivery services.

Delays may be considerable, however, especially when businesses are closed for public holidays, and these can cause significant losses in interest to any of the parties involved. The concept of a facility which allows the issue of electronic original papers with electronic original signatures, 24 hours a day seven days a week, has therefore become highly appealing. It has been developed and is currently being put into practice in several types of international markets, including the markets for commodities.

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## Legal framework

Although some companies have been using e-commerce in the absence of specific international and national legislation for some time, the lack of legal clarity has slowed acceptance. The electronic exchange of data does not in itself pose a problem. However, when the data represent contracts, negotiable instruments or payments, a clear legal framework in the form of a multilateral contract is required for these transactions to work. For instance, in the case of Bolero.net, a company that acts as the go-between (provider), this contract is known as 'The Rulebook'. It clearly defines what electronic messages replicate the provisions of the classic paper documents, such as contracts and bills of lading. It also establishes that these messages cannot be repudiated. Furthermore, it sets up a central registry of titles, so that the legitimate transfer of titles can be made.

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## Electronically through a provider

In a typical example, a cocoa importer in Europe may conclude a purchase with an exporter in Indonesia. The importer issues a purchase contract and sends it electronically to the seller who, in turn, returns it electronically after reviewing and signing it. These communications actually take place via a provider with whom they have contracted for the service. The agreement between the

customer and the provider contains the appropriate security arrangements (passwords, singularity of the document, etc.) which will allow the provider to verify the authenticity of the message and send it on to the other party.

Either the seller or the buyer may then negotiate with a ship's broker for the fixing of a vessel to lift the cocoa according to the terms of the contract. The fixing will result in a charter party, which can again be issued and transmitted electronically, using the same system through the provider. It will require, of course, that the ship's broker and the vessel operator are also part of the provider's network.

When the seller delivers the cocoa to the carrier's shed, the carrier's shed operator will issue an electronic pier receipt, which will then be exchanged against a received on board ocean bill of lading, again electronically and through the provider. This bill of lading is filed electronically, again through the provider, with the bank which has granted the credit to the buyer for the payment of the shipment. When the shipment arrives at the port of destination, the bank can transfer the bill of lading to the importer against a trust receipt (for example), and the exporter exchanges it against a pier receipt. The exporter will thereafter issue delivery orders to the buyer of the cocoa, or to the inland carrier which will take the cocoa to the importer's warehouse.

It should be noted that these transactions must be handled through the provider who furnishes the depository services. It is therefore necessary that all those who wish to avail themselves of electronic transfers of original documents be linked to the same provider, at least until such time that the providers themselves can be linked to each other and carry out each other's deliveries.

The providers must, of course, adhere to the strictest standards of verification and integrity of the documentation. In the case of the provider Bolero.net, these standards are assured through CHIPS, a system which has been used by the international banking community for years. CHIPS, which stands for Clearing House Interbank Payments System, is the electronic system which handles over 95% of the dollar payments moving between countries around the world.

In contracts with customers the providers will typically require the customer to submit tangible evidence that it is a legitimate business enterprise. The provider will, however, not assume any responsibility for losses caused by a customer's improper act, as for example a party to a contract defaulting on its obligations. On the other hand, the provider will make whole any loss caused by an erroneous transmission of a document.

As yet, there are only a few providers who can render this service on a scale that makes it attractive. The advantages are such, however, that the system seems destined to become generally accepted and widely used.

*PART FOUR*

*Processing and manufacturing*



## CHAPTER 16

# Cocoa processing and chocolate manufacturing

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The industry differentiates between cocoa processing and chocolate manufacturing. Cocoa processing normally covers the activity of converting the beans into nib, liquor, butter, cake and powder. Chocolate manufacturing covers the blending and refining of cocoa liquor, cocoa butter and various optional ingredients, such as milk and sugar.

All cocoa products start with cocoa liquor, although the liquor required in the manufacture of chocolate has a different texture from the liquor required to make cocoa butter, cake and powder, as discussed later in this chapter.

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## Cocoa processing

After the cocoa beans have been received at the processing location, they are inspected and thoroughly cleaned of all extraneous matter, such as sticks, stones, metal fragments, as well as broken beans. This process involves blowers, which remove items that are lighter or heavier than cocoa beans, and sieves which eliminate items that are too small or too big.

Once the beans are cleaned, the processor has the option of roasting them before the shell is removed, or of removing the shell before roasting. Cocoa beans which have had their shells removed are the nib. Generally speaking, chocolate manufacturers prefer to roast the beans before shelling them, while cocoa processors favour the nib-roasting process.

Bean roasting allows for more variety in the degree of roast and development of flavour, but requires beans of a uniform size, while nib roasting is more even and does not require uniform bean size. Removing the shell before roasting prevents migration of cocoa butter from the bean into the shell during the roasting process. This migration is an important yield factor.

Once the beans have been shelled and roasted (or roasted and shelled, as the case may be), the nib is ground into a paste. The heat generated by this process causes the cocoa butter in the nib to melt, hence the name 'cocoa liquor'. It is also known as 'cocoa paste', 'chocolate paste', 'cocoa mass' or, as for example in the United States food standards of identity, simply as 'chocolate'. Once further refined, it is also called 'unsweetened baking chocolate'.

Cocoa liquor destined for processing into cocoa butter and cake is refined to a very small particle size, as it is easier to reduce the particle size earlier, when the butter is still present, rather than later, when most of the butter has been pressed out. A smaller particle size makes butter extraction easier.

Cocoa liquor destined for chocolate production need not be as finely ground. Indeed, a larger particle size is preferable because it requires less cocoa butter than finely ground liquor to give the same mouth feel to the finished chocolate. This is an important economic consideration.

In the cocoa-processing operation, the liquor is now fed into hydraulic presses that remove a predetermined percentage of the cocoa butter, leaving behind a cake which, according to the processor's requirements, may contain anything from 6% to 24% of cocoa butter. The cocoa butter so extracted is then filtered and stored in tanks in liquid form until ready to be turned over to the chocolate operation, if at the same location. Otherwise it is shipped to its final destination either in liquid form in tank trucks or in moulded form in cartons. It is sold as 'pure, prime pressed, natural' cocoa butter, usually considered to be best quality, particularly if made from all-African cocoa beans.

The cocoa cake is either broken into smaller pieces (kibbled) and sold into the generic cocoa cake market, or it is ground into a fine powder. It is called natural because it has not been treated with alkali, as discussed below. Natural cocoa powder is primarily used in the baking and confectionery industry and often forms the flavour base for compound coatings.

The cocoa processor has the option of treating the nib or the liquor with an alkali solution (alkalizing), which will reduce the acidity by increasing the normal pH factor from about 5.0 up to 8.0. This treatment is also known as 'dutching'. It was invented in the late 1800s by the Dutchman C. J. Van Houten, who developed the cocoa butter pressing operation as well.

Alkalizing cocoa nib or cocoa liquor renders the powder darker, gives it a milder, but more chocolaty flavour, and allows it to stay in suspension longer in liquids such as milk. It generally commands a premium over natural cocoa powder. Although dubbed 'soluble', cocoa powders are not truly soluble in liquids – they are 'wetttable'.

On the other hand, the cocoa butter extracted from alkalized liquor does have a more pungent and less desirable odour and flavour, and must be deodorized (normally by steaming it), as well as refined. It is then carefully blended with other cocoa butters, so that the resulting final butter for sale is consistent in its bland flavour, colour and viscosity. Typical of these butters are those marketed by the Netherlands cocoa-processing industry and known by their brand names.

Virtually all the cocoa butter produced by the international cocoa processing industry is used in the manufacture of chocolate, where it must be added to the liquor to achieve the desired result. The pharmaceutical and cosmetics industries, which also use cocoa butter, may obtain their requirements from sources using solvent extraction or methods other than pressing cocoa butter from cocoa shell. Some may use cocoa beans that are not suitable as a food item.

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## Chocolate manufacturing

In the chocolate manufacturing process, cocoa liquor is mixed with cocoa butter and sugar. In the case of milk chocolate, fresh, sweetened condensed or roller-dry low-heat powdered whole milk is added, depending on the individual manufacturer's formulae and manufacturing methods. In the crumb or flake process, liquor is blended with sugar and pre-condensed milk, or sweetened

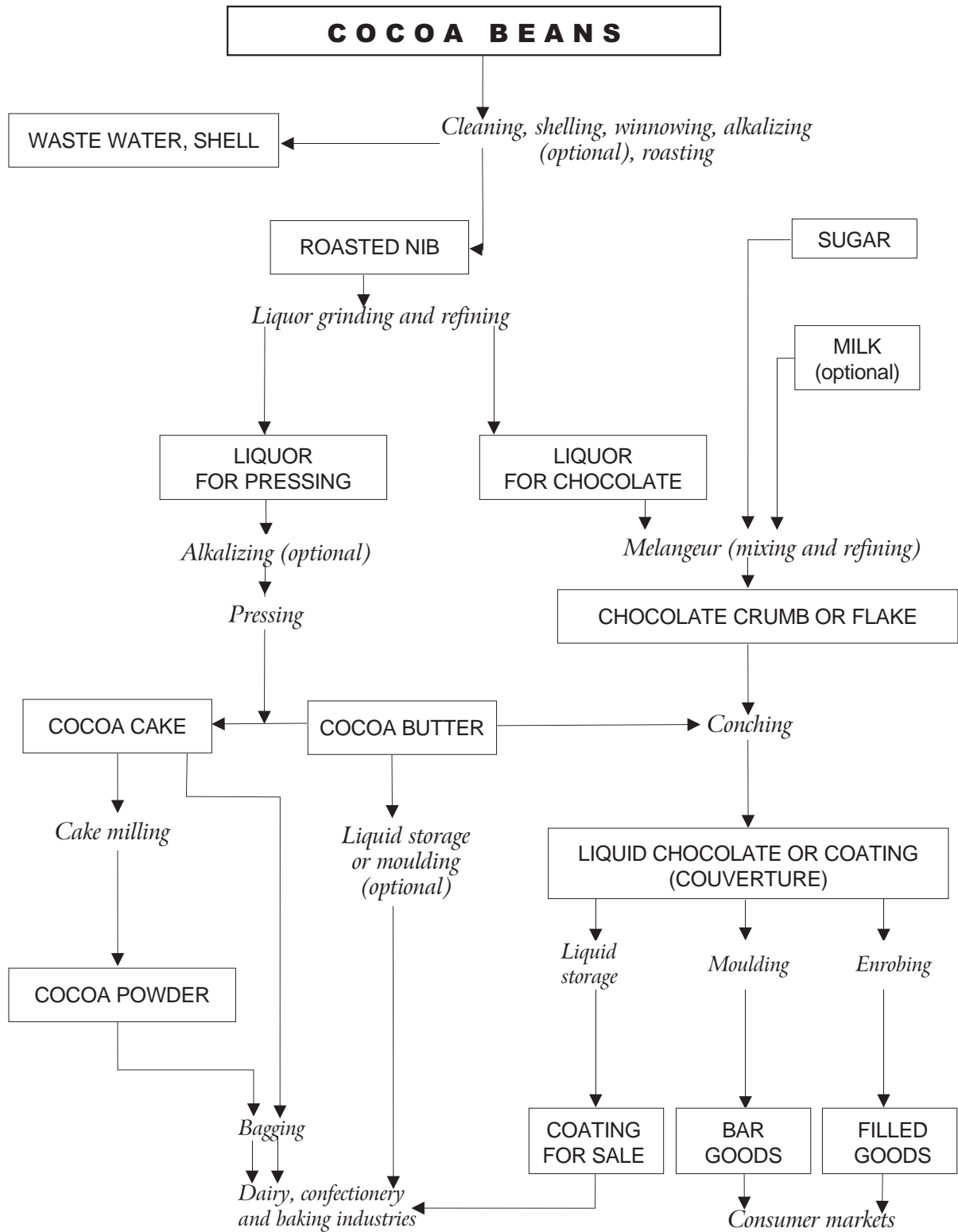
condensed milk. It is then dried on heated rollers to produce the ‘caramel’ flavour more typical of European chocolate or mixed with slightly acidified milk to produce the typical United States ‘cheesy’ flavour. These distinctions are a matter of taste and not of quality.

After the mixing process, the blend is further refined to bring the particle size of the added milk and sugar down to the desired fineness. The mixture is then placed into conches, i.e. large agitators which stir it under heat. Normally, it is at this stage that cocoa butter is added, although some manufacturers add it during the original blending process. Conching eliminates unpleasant and undesirable odours and further smooths the particles. Generally speaking, the longer chocolate is conched, the smoother it will be. The process may last for anything from a few hours to three full days, and in the case of expensive coatings, even longer.

After the conching process, the liquid chocolate is either stored or delivered to the confectionery industry in tanks or it is tempered and poured into moulds for sale in blocks to the confectionery, dairy and baking industries. It may also be converted into proprietary bars for sale direct to the consumer market.



Figure 2  
The cocoa-processing chain



## CHAPTER 17

# Processing in producing countries

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### Obstacles

In principle, adding value to a commodity is an economically attractive proposition. In the case of cocoa, however, producing countries face some serious economic, geographic and commercial obstacles to processing competitively on a viable scale.

Being a fungible commodity (i.e. they are acceptable to the broad spectrum of cocoa processors anywhere in the world), cocoa beans are sold without any great marketing effort. By converting cocoa beans into cocoa liquor, cocoa butter or cocoa cake, the fungibility is reduced or lost altogether and the intermediate product obtained becomes less easily marketed. Customers for these products have their own special needs, which is frequently best met either by processing the cocoa beans themselves or by buying the products from vendors who meet their particular quality and delivery requirements.

A cocoa bean processor situated in the heart of the European chocolate market clearly has a much better chance of meeting customers' requirements than a processing plant located in, for example, the interior of the African cocoa belt. Moreover, as cocoa bean processing equipment is expensive and requires a large tonnage throughput, it must be able to operate on a continuous basis. To make this possible, there has to be continuity of supply throughout the year. A processing plant operating close to the main consumer markets has access to cocoa beans from all sources which ensures availability all year round.

Another factor crucial to the maintenance of a continuous operation is the availability of spare parts. A mechanical breakdown, all too common in cocoa processing, can shut down operations for as long as it takes to get the spare parts and to undertake repairs. In the major consuming countries, where the manufacturers of the processing equipment are also located, spare parts are readily available and can be supplied or manufactured at short notice. A plant located in a producing area would have to wait much longer for parts to be replaced.

Cocoa beans must be stored in a relatively mild climate. The high ambient temperatures and high relative humidity typical of tropical regions offers unfavourable storage conditions, leading to deterioration and the need for increased pest control. Furthermore, these conditions also increase the free fatty acid level in the cocoa fat, making any butter produced from the pressing of these beans less desirable.

Cocoa beans can be transported more easily than any of the intermediate cocoa products. They particularly lend themselves to bulk transportation because they can be shipped loose in containers or loose in the hold of the ship. Intermediate cocoa products, being processed foods, have to be packaged and handled more carefully.

The cost of energy is another factor. Cocoa bean processing is an energy-intensive activity, entailing both heating and cooling operations. Cooling is costly, and particularly so in a tropical country. Processors in consuming countries generally have the advantage of being able to operate at substantially lower energy costs than those in the major cocoa producing countries.

A typical cocoa bean presser in, say, the Netherlands, will store cocoa butter in liquid form and deliver it in tanks to customers on a just-in-time basis. This eliminates the need to cool the butter in order to solidify it for packaging. It also does away with the need for customers to strip the packaging and melt the butter back into liquid form.

A cocoa bean presser in a producing country has to cool the butter and place it into cartons lined with plastic sheets (both probably imported). The butter must then be stored under controlled conditions in a cool environment to prevent melting. To provide the just-in-time service to customers that processors are able to offer in consuming countries, the butter must be shipped to a country of destination where it must be stored and melted down in a special facility. This aspect puts the origin processor at a significant cost disadvantage, which has to be met by discounting the butter to the importer.

Cocoa bean processing into liquor, butter and cake is not a labour-intensive activity. Thus, the additional employment created by a processing plant is minimal. As most operations are fully automated and computer operated, no special skills are necessary except perhaps those for repair and maintenance.

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## Viable in certain situations

Given the above disadvantages, it is not surprising that virtually all cocoa-processing operations in origin countries depend on subsidies in one form or another. These take many different forms, such as government development loans, loans from donor governments of countries supplying equipment, and different types of local tax or cocoa bean price incentives.

Overall, the cost of providing subsidies may well negate the modest gains that can be made by selling processed product, rather than beans, into the international market. This is not to say that there is no place for processing in a producing country. Where there is a local market for the products, for example, it certainly can make sense to establish such facilities – as long as great care is taken with the sizing of these operations. If there is a satisfactory local outlet for cocoa cake, the cocoa butter may be exported, even if it has to be discounted. (As discussed elsewhere in this guide, it is not possible to make cocoa cake without also making cocoa butter.) This butter has to be used somewhere, and it can be used economically only in chocolate manufacturing.

Another valid reason may be the removal of lower quality beans from the market in order to obtain a higher average grade of beans for export at an appropriate premium price. This approach could be beneficial to countries with large quantities of cocoa which, while perfectly wholesome, may not meet the stricter export grading standards expected in consuming markets. This may be due to high moisture content, small or irregular bean size, or lower fat content produced during part of the crop year.

Again, much careful study is needed to determine the right capacity. Various experiences with cocoa processing at origin have demonstrated over the years that no single country has been able to establish a processing industry which can stand on its own without some form of financial support.

<b>Table 6 Grinding of cocoa beans, by quantity and by country, 1990/91-1998/99 (in thousands of tons)</b>			
	<b>1990/91</b>	<b>1995/96</b>	<b>1998/99</b>
France	70	113	124
Germany	294	264	197
Netherlands	268	385	415
United Kingdom	145	191	167
United States	268	342	406
Singapore	54	55	68
Brazil	260	205	192
Côte d'Ivoire	118	140	225
Ghana	30	60	65
Indonesia	32	62	75
Malaysia	78	95	105
Other countries	713	801	733
<b>WORLD</b>	<b>2 330</b>	<b>2 713</b>	<b>2 772</b>
Origin grindings	755 (32%)	804 (30%)	878 (32%)

*Source:* ICCO.

<b>Table 7 Production, grindings and stocks, by quantity, 1990/91-1998/99 (in thousands of tons)</b>			
	<b>1990/91</b>	<b>1995/96</b>	<b>1998/99</b>
World production	2 506	2 913	2 808
World grindings	2 330	2 713	2 772
End-of-season stocks	1 548	1 406	1 241
Stocks/grindings ratio	66%	52%	45%

*Source:* ICCO.

**Note:** Since 1980/81, the stocks/grindings ratio has fluctuated between 27% (1983/84) and 66% (1990/91). The ratio is projected to be around 30% by 2004/05.

## CHAPTER 18

# The economics of cocoa processing

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A full-line (bean to consumer product) processor who manufactures in-house all the cocoa ingredients required, including cocoa butter, faces a dilemma when it comes to handling the multi-product aspect of the pressing operation. To make cocoa butter for chocolate it is also necessary to make cake. And unless this cake can be disposed of at a good price, the cost of making the cocoa butter in-house will be substantially higher than the price paid for butter by non-pressing chocolate manufacturers. The latter will be at a considerable advantage, as cocoa butter is by far the most expensive ingredient in dark and milk chocolate.

As a rule of thumb, it takes 1.25 tons of beans to make 1 ton of cocoa liquor, which is pressed into cocoa butter and cocoa cake. The relationship between butter and cake may vary somewhat, depending on the quality of the cocoa beans processed, their genetic fat content and the yield efficiency of the equipment used by each individual processor. The financial proceeds from converting cocoa beans into cocoa butter and cocoa cake are illustrated by example in box 10.

The higher the return from the sale of the cocoa cake, the more important its contribution to profitability. Cocoa pressers have therefore developed a range of product variations – all with the purpose of adding value to the base product. Cocoa powder is now offered in many varieties to meet the flavour demands of increasingly important market outlets such as the non-chocolate based confectionery, biscuit and baking, and dairy industries.

Some full-line manufacturers, like Mars, grind just enough cocoa beans to provide some of the liquor required in the manufacture of their branded consumer chocolate, and buy in from outside practically all of their cocoa butter requirements. Other companies such as Nestlé (with its Nesquik), Cadburys and Hershey's (instant and baking cocoa powder, as well as syrup) have chosen the route of creating branded consumer products. The problem still remains, however, that when one of the chocolate product lines experiences a major surge or decline in sales, the balance between the use of cake and butter is disturbed. In such an event, these companies normally restore the balance by turning to the industrial supply houses to purchase either butter or powder.

Another complication of running a combined operation of providing both butter and powder to the internal operation as well as to outside customers is the matter of establishing the true manufacturing costs for each item. Historically, cocoa cake has been regarded as a by-product, thus attracting only incremental costs. All operations prior to the milling of the cake were charged to the cocoa butter operation. However, during the crisis of the late 1970s and early 1980s, when cocoa powder suddenly became very rare and the commercial ratio for cocoa butter dropped to below 1.8 times the price of cocoa beans, this policy had to be revised. Today, there appears to be no standard system. Each company has its own particular allocation procedures.

**Box 10****Profitability of a processing unit – an example**

Spot prices as of 8 August 2000, US\$ per 1 000 kg, quoted by CMAA

	US\$
Cocoa beans – Ghana	1 010
Cocoa beans – Côte d'Ivoire	963
Cocoa beans – Sulawesi	806
Cocoa butter	1 933
Press cake, 10%-12%	742

**Assumptions**

- The formula consists of 50% Côte d'Ivoire, 25% Ghana and 25% Sulawesi cocoa beans.
- The factory is able to extract 200 tons of liquor out of 250 tons of bean blend.
- The fat content of the liquor is 55%; non-fat cocoa solids make up the balance of 45%.
- This corresponds to 110 tons of fat and 90 tons of non-fat cocoa solids.
- The process is calibrated to press cake with 11% fat content.
- The 200 tons of liquor will therefore yield 101.1 tons of cake [consisting of 11.1 tons fat (11%) and 90 tons cocoa solids] and 98.9 tons of pure butter.

**Cost of beans**

125.0 tons of Côte d'Ivoire @ US\$ 963	US\$ 120 375
62.5 tons of Ghana @ US\$ 1 010	US\$ 63 125
62.5 tons of Sulawesi @ US\$ 806	US\$ 50 375
<b>Total: 250.0 tons of blend</b>	<b>US\$ 233 875</b>

**Sale of processed products**

101.1 tons of cake @ US\$ 742	US\$ 75 016
98.9 tons of pure butter @ US\$ 1 933	US\$ 191 174
<b>Total: 200.0 tons of processed products</b>	<b>US\$ 266 190</b>

**Gross margin (US\$ 266 190 – US\$ 233 875) US\$ 32 315**

This is a gross margin of around 12% of the sales. Among the items to be paid from this margin are transportation from the pier or warehouse to the factory, fixed and variable costs of processing, packaging, labour and interest – leaving a net margin or profit.

If the processor should use beans with a fat content higher than 55%, the gross margin would be higher.

**Box 11****Tolling**

The term 'tolling' refers to the outsourcing of cocoa processing by the owners of the cocoa beans. In a typical tolling agreement, the owners, e.g. Ghana's Cocomod, may ship cocoa beans to a cocoa processing facility in Europe. Against a processing fee, the beans are converted into butter and cake. The owners will then market these products themselves as if they were made at their own facilities.

Another example of tolling may be a chocolate manufacturer buying cocoa beans and having them shipped to an outside processor who, for a fee, converts them into cocoa liquor. The liquor is then taken back by the manufacturer and used in the production of its own chocolate.

Tolling provides the owners of cocoa with the opportunity to choose the optimal location for processing – closer to the consumer, in the case of Cocomod – and to avoid the heavy capital investment usually associated with a processing facility.

## CHAPTER 19

# The Netherlands – an important cocoa processing centre

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In the sixteenth and seventeenth centuries, the processing of cocoa was mainly in Spanish hands, while the supply of raw materials was largely controlled by Netherlands merchants. At the beginning of the eighteenth century factories began to emerge in the Netherlands.

In the early nineteenth century, the Dutchman Coenraad Johannes van Houten invented the process of pressing cocoa to make cocoa butter and cocoa powder, thus making the manufacture of chocolate possible. He also developed the alkalization process for neutralizing acids with a less desirable taste, and for improving the colour of powder and its dispersion in water. The traditionally dominant position of Netherlands traders in cocoa trading, combined with these important inventions, laid the foundations for the major cocoa grinding industry in the country today.

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## Handling 15% of world production

The Netherlands has four cocoa-processing companies, which include the world's largest cocoa bean grinders, situated along the river Zaan. More than 425,000 tons of cocoa beans are processed annually which, on average, accounts for 15% of the world's production of cocoa. This is the largest concentration of cocoa trading companies in the world and Amsterdam, with a storage capacity of well over 700,000 tons of cocoa beans (both in bulk and in bags), is the number-one cocoa importing port.

This particular region is extremely well suited to the processing of cocoa. Its mild climate reduces the need for air-conditioning. The country's natural gas resources provide cheap energy. Good water transport facilities offer excellent access to processing facilities and allow cocoa beans to be moved from ocean steamer to processing plant at minimal costs.

The geographical location and the extremely well-developed infrastructure for water, rail and road transport make it possible for practically all of the European Union's cocoa butter and cocoa powder requirements to be supplied within 48 hours. This is always an important consideration, particularly as regards shipment of liquid butter in tanks. Netherlands plants are therefore probably in a better position than any others to operate the processors' just-in-time inventory policy.



*PART FIVE*

*Consumer markets*



## CHAPTER 20

# Cocoa and chocolate consumption

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## Conversion factors and cocoa bean equivalent

The commonly used basis for measuring and reporting cocoa consumption is the total tonnage of cocoa beans ground worldwide every year. As the major grinding countries re-export much of their production of cocoa liquor, butter, cake and powder, adjustments must be made in their statistical data in order to get a truer picture of actual cocoa bean consumption in each country. This involves the use of physical conversion factors to convert weights of cocoa products into cocoa bean equivalent weights. In making the conversions, some rule-of-thumb assumptions are used. These are explained in detail in appendix VI.

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## Markets

With the notable exceptions of some of the Andean countries, Brazil, and certain Pacific islands, consumption in producing countries is generally small. The most important individual market for cocoa beans is the United States. In the 1998/99 cocoa year it imported, on a net bean equivalent basis (imports minus exports), 674,000 metric tons of cocoa. Taken as a whole, however, the European Union is a larger net importer of cocoa beans. Its position is enhanced by the large processing industry that has developed in the Netherlands, which satisfies a high proportion of all EU needs for cocoa butter and cocoa powder.

While great hopes had been pinned on the expansion of the chocolate market in eastern Europe and the Russian Federation, after an initial surge based mainly on pent-up demand and enthusiasm, the economic situation in the former Soviet Union has not yet allowed the full development of this potential. There is no reason to doubt, however, that chocolate consumption in eastern Europe will in time catch up with consumption in the western part of the continent.

As far as the actual size of the individual markets for chocolate and confectionery is concerned, reports are periodically published by government and trade organizations, such as the US Department of Commerce (Bureau of the Census), CAOBISCO (Association of Chocolate, Biscuit and Confectionery Industries of the European Union), and national industry associations. Several of these reports are available on the Internet.

Tables 8 and 9 show how cocoa products are traded between countries. They also indirectly indicate the countries in which processing and manufacturing of cocoa products take place.

<b>Table 8 Exports of cocoa products by country/area and by quantity, 1998/99 (in thousands of tons)</b>					
	<b>Beans</b>	<b>Liquor/paste</b>	<b>Butter</b>	<b>Cake/powder</b>	<b>Chocolate products</b>
Belgium-Luxembourg	(29)	11	1	2	262
France	(6)	23	59	34	225
Germany	(7)	19	3	23	304
Italy	-	1	3	6	75
Netherlands	(45)	45	153	174	198
Spain	-	1	10	27	36
United Kingdom	(1)	7	5	12	131
European Union, nes	-	-	1	3	220
Europe, nes	-	-	-	1	160
Russian Federation	-	-	-	-	12
Ex-USSR, nes	(51)	1	1	6	19
<i>Europe and ex-USSR</i>	<i>(139)</i>	<i>108</i>	<i>236</i>	<i>288</i>	<i>1 642</i>
Cameroon	92	19	2	2	-
Côte d'Ivoire	1 016	96	54	46	4
Ghana	354	16	17	12	-
Nigeria	178	-	7	2	-
Africa, nes	36	-	-	-	18
<i>Africa</i>	<i>1 676</i>	<i>131</i>	<i>80</i>	<i>62</i>	<i>22</i>
Brazil	410	21	23	20	-
Ecuador	53	9	6	3	-
United States	(25)	15	10	25	108
Americas, nes	43	4	12	4	206
<i>Americas</i>	<i>100</i>	<i>38</i>	<i>49</i>	<i>55</i>	<i>333</i>
Indonesia	319	2	30	22	18
Malaysia	27	4	38	40	5
Singapore	(21)	7	14	22	50
Asia-Oceania, nes	40	4	23	9	138
<i>Asia-Oceania</i>	<i>386</i>	<i>17</i>	<i>105</i>	<i>93</i>	<i>216</i>
<b>WORLD</b>	<b>2 162</b>	<b>294</b>	<b>470</b>	<b>498</b>	<b>2 213</b>

**Source:** ITC, based on data from ICCO.

**Notes:**

Figures in brackets are re-exports of beans.

Totals exclude re-exports of beans.

A few figures, primarily for non-ICCO member countries, are estimates.

A dash (-) signifies a quantity below 500 tons.

Other significant exporters of final chocolate products are (quantities: '000 tons): Argentina (16); Australia (34); Canada (171); Denmark (19); Hong Kong (China) (11); Ireland (79); New Zealand (13); Poland (40); Republic of Korea (26); South Africa (17); Sweden (37); Switzerland (70); and Turkey (40).

nes = Not elsewhere specified.

<b>Table 9 Imports of cocoa products by country/area and by quantity, 1998/99</b> (in thousands of tons)					
	<b>Beans</b>	<b>Liquor/paste</b>	<b>Butter</b>	<b>Powder/cake</b>	<b>Chocolate products</b>
Belgium-Luxembourg	57	21	40	10	87
France	130	73	52	26	273
Germany	217	10	72	40	274
Italy	72	7	8	17	64
Netherlands	338	24	36	13	91
Spain	54	2	3	40	53
United Kingdom	244	5	39	7	167
European Union, nes	42	14	23	19	223
Europe, nes	84	13	33	34	145
Russian Federation	47	5	4	22	41
Ex-USSR, nes	49	3	3	11	34
<i>Europe and ex-USSR</i>	<i>1 334</i>	<i>177</i>	<i>313</i>	<i>239</i>	<i>1 452</i>
Africa	10	2	3	13	11
Brazil	52	-	-	2	12
Canada	42	11	17	19	101
United States	429	15	70	116	266
America, nes	14	14	3	38	54
<i>America</i>	<i>537</i>	<i>40</i>	<i>99</i>	<i>175</i>	<i>433</i>
Australia	-	10	21	9	10
China (excluding Hong Kong)	25	1	5	2	8
Japan	46	1	17	10	131
Malaysia	58	-	-	-	4
Singapore	89	2	1	3	95
Asia-Oceania, nes	45	8	9	37	95
<i>Asia-Oceania</i>	<i>263</i>	<i>22</i>	<i>53</i>	<i>61</i>	<i>257</i>
<b>WORLD</b>	<b>2 144</b>	<b>241</b>	<b>468</b>	<b>488</b>	<b>2 153</b>

**Source:** ITC, based on data from ICCO.

**Notes:**

Some figures, primarily for non-ICCO member countries, are estimates.

A dash (-) signifies a quantity below 500 tons.

Other significant importers of chocolate products are (quantities in '000 tons): Austria (62); Czech Republic (21); Denmark (36); Greece (32); Hong Kong, China (13); Hungary (18); Ireland (31); Mexico (25); Norway (17); Poland (20); Portugal (21); Republic of Korea (12); Saudi Arabia (15); Sweden (28); Switzerland (19); and Ukraine (20).

nes = Not elsewhere specified.

## Product categories

### Chocolate

±90% of cocoa is used in chocolate

The market for chocolate is by far the largest consumer of cocoa in terms of bean equivalent. Although chocolate consumption continues to grow worldwide, the number of bean processors is shrinking significantly. These are the companies that turn the beans into the various forms needed by makers of finished chocolate products.

The dilemma for cocoa traders is that they have fewer and fewer customers and the ones that are left are becoming bigger and more powerful. This has greatly inhibited the flexibility of the traditional trading houses.

Furthermore, the processing of cocoa beans is a capital-intensive activity and requires a significant throughput to cover even the fixed overheads. In most cases, smaller companies find that they cannot generate enough chocolate demand individually to get their volume throughput up to the minimum level required to make the business economically viable. The cost of replacing rapidly outdated processing equipment, for example, is often too high for a small business to bear.

The current trend is for companies which hold a significant position in the consumer market to outsource their chocolate manufacturing. Outsourcing offers a number of advantages, including:

- Better inventory control.
- The elimination of serious pest control and sanitation problems inextricably linked to the handling of raw cocoa beans.
- The assurance of being able to obtain chocolate of consistent quality from a competitive source at any given time.

In many instances, they can also benefit from the technical and scientific assistance that large processors can provide to their customers.

Companies whose businesses consist primarily of the manufacture and distribution of cocoa and chocolate products for the chocolate confectionery and other food industries are: Cargill, Archer Daniels Midland and Barry Callebaut. Some smaller firms with the same product lines are Schokinag Schokolade Industrie, Guittard Chocolate Company, Blommer Chocolate Company and World's Finest Chocolate.

But while the processing of cocoa beans is moving into the hands of a few large firms, the continued availability of high-quality chocolate on the open market continues to allow smaller firms making and selling speciality or novelty items to carve out profitable niche positions for themselves. The widely distributed mass-market branded chocolate products are increasingly the domain of a few large international food companies, such as Nestlé, Mars, Hershey Foods, Kraft Jacobs Suchard and Cadburys.

Some of the more consumer-oriented bean processors continue to cater for the needs of the industrial market as well, particularly at the higher-quality prestige end of the market. Among these are Nestlé's Peter's Chocolate Company, Lindt & Sprüngli (both under its own name and through its United States subsidiary Ghirardelli Chocolate Company) and Valrhona.

### Flavour

Because of the trade's main focus on the chocolate market, it often overlooks the important demand for cocoa powder from industries other than the chocolate and confectionery sectors. Indeed, the upsurge in the price of cocoa

powder reflects the large demand for this product for use in biscuits, ice cream, dairy drinks and cakes. Cocoa powder is essentially used as a flavour and, as such, is extremely price inelastic, which means that processors will buy it according to their needs rather than because of the price.

In the non-chocolate confectionery industry, for example, cocoa powder is used in confectioners' coatings (also known as compound coatings or grease). The powder, generally of the non-alkalized variety, is mixed with non-cocoa butter vegetable fats to produce an item that looks, tastes and handles almost like chocolate, but is much cheaper. The typical fats used in this process are either lauric or fractionated vegetable oils such as palm oil or soya bean oil; some may be hydrogenated. Compound coatings with a higher melting point than chocolate may also be used in markets where the climate makes the use of real chocolate less practical.

It is technically possible to produce compound coatings which even experts find difficult to differentiate from real chocolate. Most of them, however, have certain disadvantages. The softening and melting points are wider apart than for real chocolate, giving them a less agreeable mouth feel, they lack the shelf life of real chocolate, or they may be incompatible with certain other fats and oils.

Compound coatings are best suited to items for which shelf life is not important, such as bakery preparations which sell on their freshness, or ice cream and frozen desserts which are kept frozen until consumed. They also tap into a cheaper market not accessible to real chocolate, thus helping to popularize the chocolate flavour. As they absorb large quantities of cocoa powder, they increase the contribution to the presser, which allows more cocoa butter to be made available at lower prices. So they also produce the side effect of lowering the cost of real chocolate.

The frozen dessert industry often uses cocoa powder as a flavour as well as in the manufacture of coatings. At times, however, liquor or pure chocolate coatings, cut with vegetable oil, are used to facilitate the coating of ice cream bars.

The baking industry uses cocoa powder in the manufacture of compound coatings for biscuits. It also uses powder as a cheaper ingredient in chips for chocolate chip cookies and in various wafer products. Powder is likewise employed as a colouring or flavouring agent in biscuits or in breads such as pumpernickel.

## **Beverages**

Another important application of cocoa powder is as a beverage, either hot or cold. Chocolate milk is a popular item in many school lunch programmes. The cocoa powder used in the beverage industry is mostly of the dutched kind, i.e. the nib or the liquor has been treated with alkali before pressing. This treatment gives the cocoa a milder, more chocolaty flavour, and allows the solids to stay in suspension in liquids longer. Cocoa powder, even if alkalized, is not truly soluble in water.

## **Cosmetics**

The amount of cocoa butter used outside the confectionery industry is comparatively small. However, cocoa butter has some special properties which are needed in cosmetics. It is used, for example, in lipsticks, hand creams, skin lotions and body soaps. The pharmaceutical industry also uses cocoa butter in items such as suppositories and medicated creams.

The unique feature of cocoa butter is that it is solid at room temperature but melts rather quickly over a narrow temperature range just a few degrees below body temperature.

Cocoa butter melts at  
around 34°C (93°F)



## CHAPTER 21

# Germany – a major consumer market

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Germany accounts for 10% of world imports of raw cocoa

Germany is the most important European manufacturer and retailer of chocolate products. Moreover, with a share of approximately 10% of world imports of raw cocoa, it is in third place behind the Netherlands and the United States as an importer of raw cocoa.

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## Foreign trade in raw cocoa

Germany imported between 300,000 tons and 330,000 tons of cocoa beans annually between 1993 and 1997. In 1998, its imports amounted to 268,000 tons, valued at DM 784 million.

Demand is met mainly by imports from West Africa. In 1998, Côte d'Ivoire, with supplies amounting to 206,000 tons, accounted for around three-quarters of the total. In fact, Africa's share in German imports grew from 59% in 1989 to almost 93% by 1998 (87% in 1997), largely reflecting the general shift of cocoa bean production towards Africa. Ecuador and Indonesia also deliver significant amounts to Germany.

Imports of raw cocoa into Germany have always been handled primarily by the free port of Hamburg, through which about 200,000 tons passed into the domestic market annually from 1996 to 1998. As a result of political changes in the last decade of the twentieth century, Hamburg's role as a distribution point and transit hub for the supply of raw cocoa to eastern Europe has grown in importance. Numerous establishments in the port and transport community of Hamburg, specializing in stevedoring, warehousing and the transport of raw cocoa, and with many years of experience, are able to guarantee the proper treatment and efficient handling of this commodity. New challenges, such as the change to bulk and mega-bulk shipments, are being met.

The other domestic ports used are Bremen (cocoa imports in 1997: 26,000 tons; 1998: 5,000 tons) and Rostock (1997: 1,000 tons; 1998: 5,000 tons). Further imports of raw cocoa destined for Germany are landed in the Rhine estuary ports of Amsterdam and Rotterdam as well as Antwerp, and brought from there to the German processing facilities.

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## Intermediate cocoa and semi-processed chocolate products

During the 1990s, there was a noticeable increase in the annual volume of imports of intermediate cocoa products and semi-processed chocolate products – from barely 91,000 tons (worth DM 402 million) in 1990 to 193,000 tons (DM 903 million) in 1998. Together with imports of raw cocoa, this brings the total value of Germany's cocoa imports in 1998 to almost DM 1.7 billion. Also worthy of note is that imports of cocoa butter into Germany more than doubled from 37,000 tons in 1993 to 76,000 tons in 1998.

To date, no proportionate increase in imports of intermediate cocoa and semi-finished chocolate products from the expanding grinding activities in the producing countries has been discernible. The value of products imported from producing countries into Germany in 1994 was DM 64 million (or an 11% share); by 1998 it was DM 84 million (a share of about 9%).

Germany's most important supplier of intermediate cocoa products is the Netherlands, with an import value of DM 525 million, or 58% of the total. Imports by quantity amounted to 107,000 tons, or more than 55% of the total imported in 1998. The Netherlands strengthened its position in this segment of the market in the 1990s with a significant increase in supplies of cocoa butter to German chocolate manufacturers from the pressers then establishing themselves in the Amsterdam/Zaandam area.

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## Trade with other EU countries

The growth of internal EU trade as a consequence of the creation of the single European internal market and the simplification and harmonization of administrative and customs treatment across EU has encouraged some cocoa grinding facilities to move away from Germany into neighbouring European countries. This shift has primarily been to the Netherlands, mainly for transportation and logistical reasons, and has been reflected in recent increases in exports of raw cocoa from Germany to the Netherlands and Belgium. At the same time, the total volume of German cocoa grindings steadily decreased, from 319,000 tons of cocoa beans in 1992 to 217,000 tons by 1998.

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## The chocolate confectionery industry

Until 1996, the output of chocolate confectionery products in Germany had shown solid and steady growth for 30 years. In 1997 and 1998, however, the German output of chocolate and chocolate products declined, both by volume and value, mainly owing to a significant fall in exports. Nevertheless, Germany remains by far the most important EU producer of chocolate confectionery, with an output in the magnitude of 800,000 tons of finished product, equivalent to 35% of total EU production. Next in the European league table are the United Kingdom (with 485,000 tons) and France (290,000 tons).

It is interesting to note that, against the background of the historically modest development of the German food industry as a whole, the country has about 110 industrial producers of chocolate and chocolate confectionery. However, even in Germany, the increasing level of competition among manufacturers and the sheer market power of the retail food trade are forcing structural change towards the concentration of the national chocolate industry into larger, but fewer entities.

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## The consumer market

The German market for chocolate confectionery products, with a total retail sales value of DM 6.2 billion in 1998, is the largest single national market in Europe – and probably the most dynamic. One reason for this is simply the wide popularity of chocolate among the German public. During the last few decades, chocolate has developed from a luxury article into an affordable food and snack item enjoyed by the vast majority of the public, as reflected in the long-term rate of increase in per capita consumption. In 1970, per capita chocolate

consumption was 5.25 kg per annum. By 1998 this had grown to an average of 8.20 kg – an average expenditure per consumer, per year, of about DM 76. This development was greatly assisted by low prices at the consumer level. Strong competition among retailers had put heavy price pressure on suppliers and manufacturers. (See appendix VI, figure G for data on per capita consumption in Germany and other countries.)

The most noticeable change in the pattern of consumption during the 1990s was the increased popularity of chocolate-coated bars, at the expense of the classic solid moulded chocolate bar. However, the latter continues to retain an important market segment.

Also during the 1990s, imported chocolate confectionery products significantly increased their share in the German market, mainly because of the continuing expansion of free cross-border trade within EU. In 1988, imports amounted to only 107,000 tons, valued at DM 699 million. By 1998, they had reached 201,000 tons, worth about DM 1.3 billion. The share of imports in the German market increased from 20% to 30% by quantity and from 13% to 21% by value over the period.

The main beneficiaries of this greater penetration of the German market were EU countries, particularly France, Belgium and the Netherlands. Together with Switzerland, they accounted for 97% of the quantity and value of imports. In the reverse direction, exports have developed into a significant outlet for the German chocolate industry. Back in 1988, they amounted to 65,000 tons, valued at DM 505 million. Exports expanded continuously until 1997, when they reached 306,000 tons, worth DM 2.0 billion, making Germany the largest EU exporter. In 1998, exports dropped to 257,000 tons (DM 1.8 billion).

Looking at the longer-term trend, exports by the German chocolate industry during the period from 1988 to 1998 increased by 13% in tonnage and 35% in value. The most important markets have been the other EU countries, eastern Europe and the Russian Federation (a market which collapsed in 1998 because of its economic crisis).

## CHAPTER 22

# Non-cocoa fat in chocolate: EU ruling

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### The 5% rule

From the year 2000, the European Union has accepted that chocolate manufacturers may sell their product across EU countries with up to 5% of the weight of the finished product as vegetable fat instead of cocoa butter. As an example, the formula for a milk chocolate for sale in EU could be as follows:

Cocoa liquor	15.0%
Whole milk powder	16.0%
Sugar	45.5%
Cocoa butter	18.0%
Vegetable fat	5.0%
Lecithin, vanillin, salt, etc.	0.5%
<b>Total</b>	<b>100.0%</b>

Such materials as nuts and crisp rice are excluded from the basis for this calculation.

The EU ruling means a change for Belgium, France, Germany, Greece, Italy, Luxembourg, the Netherlands and Spain which previously held that chocolate should have a fat content of 100% cocoa butter. It means no change to conditions of sale for chocolate products in Denmark, Ireland and the United Kingdom. Even before their entry into EU in 1973, these three countries permitted the inclusion of vegetable fats of up to 5% of the final product by weight.

Vegetable fats include cocoa butter equivalents or cocoa butter extenders (often referred to as CBE). They are generally made through fractionation of tropical oils containing palmitic or stearic acids. Only six types of fat can be used: palm oil (the oil obtained from the fleshy mesocarp of the oil palm fruit), illipe, sal, shea, kokum gurgi and mango kernel.

Other vegetable fats, often based on fractionated lauric oils, e.g. palm kernel (the oil obtained from the seed of the oil palm fruit) or coconut oil, are known as cocoa butter substitutes or CBS. Lauric fats are incompatible with cocoa butter. The final products, therefore, which in many cases imitate the physical properties of chocolate, contain low-fat cocoa powder. In no country in the world may these be sold under a chocolate label.

The United States does not allow products with fats other than cocoa butter to be sold as chocolate.

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## Cocoa producers' reactions

The EU decision to accept a 5% content of vegetable fats in chocolate products has not been popular in some cocoa-producing countries. They claim that this may reduce worldwide demand for cocoa beans by up to 200,000 tons a year, or by some 7%. The true effect, however, is difficult to gauge. Reduced demand for cocoa butter, for example, will make it cheaper, which in turn will cause the cost of cocoa powder to rise. As cocoa powder is much less price elastic and is used primarily as a flavour, the market will readily absorb its higher cost after an initial period of adjustment. This increase may well compensate the cocoa growers for the decline in the value of the cocoa butter.

It has also been argued that the effect of the ruling will be to lower the cost of chocolate, thus making it more accessible in world markets where it is still considered by many to be a luxury. This greater consumption in the longer-term may more than offset any temporary short-term decline in demand, resulting eventually in a higher ongoing level of demand for cocoa beans.

## CHAPTER 23

# Health and nutrition

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It is beyond the scope of this guide to go into details on the nutritional properties of chocolate and other cocoa-based products as well as their impact on health.

Research in this area has been significant in recent years. Many tests, analyses and studies suggest that the nutritional values and health-giving properties of food and sweets containing cocoa may be greater than originally thought.

Several of the websites listed in appendix V contain substantial information on health and nutrition. The websites are constantly undergoing revision and expansion. They include a large number of links to other websites and references to other sources of information on health and nutrition.

The International Cocoa Organization (ICCO) and the International Cocoa Research and Education Foundation (ICREF) produced the 360-page study, *Chocolate & Cocoa – Health and Nutrition* in 1999. It comprises 22 chapters of original work by 28 authors and draws on the additional expertise of a Scientific Advisory Committee. Additional information is available at [www.icco.org/pubs/book.htm](http://www.icco.org/pubs/book.htm).

The book (ISBN 0 632 05415 8) was edited by Ian Knight and published by Blackwell Science, Osney Mead, Oxford, OX2 OEL, United Kingdom ([www.blackwell-science.com](http://www.blackwell-science.com)).



*PART SIX*

*Cocoa organizations*





## CHAPTER 24

# The main trade associations and industry organizations

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There are many organizations in the cocoa trade and industry worldwide and those mentioned here represent just a small selection. They were chosen on the basis of their relevance to the subjects covered by this guide.

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## International Cocoa Organization

The International Cocoa Organization (ICCO) was established in 1973 to administer the first International Cocoa Agreement (that of 1972) and its successor Agreements of 1975, 1980, 1986 and 1993. The Agreements were concluded among Governments of cocoa-producing and cocoa-consuming countries, under the auspices of the United Nations.

Membership of the 1993 Agreement comprises 40 countries and one inter-governmental organization (the European Union). Over 80% of world cocoa production is represented and 70% of world cocoa consumption. Countries that are not members of the agreement often participate in meetings as observers.

The 1993 Agreement has been extended until October 2001. It focuses on the following key areas:

- Developing and strengthening international cooperation in all sectors of the world cocoa economy and providing an appropriate forum for the discussion of all related matters.
- Contributing to balance between cocoa supply and demand in the world market, at prices remunerative to producers and acceptable to consumers.
- Promoting transparency in the world cocoa economy through the collection and dissemination of statistics and other data on cocoa.
- Promoting scientific research and development on cocoa.
- Developing the role of ICCO as an international commodity body (ICB) in relation to the preparation, submission and supervision of projects financed through the Second Account of the Common Fund for Commodities (CFC).

ICCO is the main world forum for:

- Gathering and disseminating information on cocoa.
- Promoting cocoa research on, and studies of, the economics of cocoa production, consumption and distribution.
- Encouraging development projects on cocoa.

The 1993 Agreement has no buffer stock provisions. The liquidation of cocoa buffer stocks accumulated under previous agreements began in October 1993 and was completed in March 1998. The history of the Agreement is given in appendix III; the Agreement itself can be found at [www.icco.org](http://www.icco.org).

**Box 12****ICCO members as of November 2000**

**Exporting members:** Benin, Brazil, Cameroon, Côte d'Ivoire, Dominican Republic, Ecuador, Gabon, Ghana, Grenada, Jamaica, Malaysia, Nigeria, Papua New Guinea, Peru, Sao Tome and Principe, Sierra Leone, Togo, Trinidad and Tobago, Venezuela.

**Importing members:** Austria, Belgium-Luxembourg, Czech Republic, Denmark, Egypt, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Netherlands, Norway, Portugal, Russian Federation, Slovakia, Spain, Sweden, Switzerland, United Kingdom, European Union (inter-governmental).

International Cocoa Organization  
22 Berners Street  
London W1P 3DB  
United Kingdom  
Tel: +44 (0)20 7307 8810  
Fax: +44 (0)20 7631 0114  
E-mail: [info@icco.org](mailto:info@icco.org)  
Website: [www.icco.org](http://www.icco.org)

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## Cocoa Producers' Alliance

The Cocoa Producers' Alliance (COPAL) was formed in 1962 to exchange scientific information, to discuss problems of mutual concern to producers, to ensure adequate supplies at remunerative prices and to promote consumption. COPAL has aimed at preventing excessive price fluctuations by regulating the supply of cocoa.

By November 2000, COPAL had 10 countries as members. Accounting for more than 75% of world cocoa production, these are Brazil, Cameroon, Côte d'Ivoire, Dominican Republic, Gabon, Ghana, Malaysia, Nigeria, Sao Tome and Principe, and Togo.

Cocoa Producers' Alliance  
Western House (11<sup>th</sup> floor)  
8/10 Broad Street  
PO Box 1718  
Lagos, Nigeria  
Tel: +2341 263 5574  
Fax: +2341 263 5684  
E-mail: [copal@alpha.linkserve.com](mailto:copal@alpha.linkserve.com)

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## Cocoa Association of London

The Cocoa Association of London, Ltd (CAL) was founded in 1929 and was open to all firms, regardless of country of registration, engaged in the commerce of raw cocoa. The objectives were at that time, and still are, to promote, protect and regulate the cocoa trade and to safeguard the interests of its members. The association established standard contracts and market rules to facilitate the trade, and to make cocoa more fungible. It also represents the cocoa vis-à-vis

local and international government and non-governmental organizations. In addition, CAL provides an arbitration service for the settlement of disputes on cocoa. CAL cooperates closely with FCC in the harmonization of their standard contracts.

While membership was open to firms anywhere in the world, voting membership was originally restricted to members registered in the United Kingdom. However, with the advent of a freer inter-European market and the full accession of the United Kingdom to the European Union, voting privileges were extended to merchant and processing firms throughout the Union. Among its non-voting members are trading firms and cocoa processors outside EU, and non-trading members carrying out ancillary activities, such as warehousekeepers and superintendence companies.

Among CAL's activities is the annual cocoa dinner, which has been organized since 1931. In line with the widening of the association's scope to embrace the EU market, these gatherings are now held alternately in London and another major cocoa market centre (Amsterdam, Hamburg, Paris). This is a significant annual event in the international cocoa calendar as it normally brings together most of the important players in the worldwide cocoa community.

The Cocoa Association of London Ltd  
Cannon Bridge  
London EC4R 3XX  
United Kingdom  
Tel: +44 (0)20 7379 2884  
Fax: +44 (0)20 7379 2389  
E-mail: CAL@liffe.com  
Website: [www.calcocoa.com](http://www.calcocoa.com)

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## Cocoa Merchants' Association of America

The Cocoa Merchants' Association of America, Inc. (CMAA) obtained its certificate of incorporation on 23 January 1924. Its objectives are to promote and advance the interest of those engaged in the trade in cocoa beans and primary cocoa products. To this end, CMAA provides the following services:

- Information to the trade by publishing daily spot prices for selected cocoa bean origins and primary cocoa products.
- Elaboration and publication of standard contracts for the cocoa trade.
- Exchange of information and cooperation with other organizations having mutual interests in the cocoa trade.
- Maintenance of an arbitration service for the resolution of claims arising out of contractual disputes on cocoa.
- Representation of the trade's interest vis-à-vis government and other regulatory organizations.
- Clearing house for information to the public on cocoa matters.
- Organization of educational activities on traffic (logistics) and regulatory matters.
- Warehouse sanitation inspection service.
- Organization of social functions in the cocoa trade.

There are three types of members, each paying a different level of annual dues:

- *Regular members.* These are trading firms engaged in buying and selling cocoa beans and/or primary cocoa products with a principal place of business in the United States. Regular members are divided into Class A, i.e. those with an annual turnover of more than 5,000 tons of beans and/or products, and Class B, those with an annual turnover of less than 5,000 tons. Only regular members may vote in elections.
- *Associate trade members.* These are firms that qualify for regular membership but whose principal place of business is outside the United States, or firms processing cocoa beans anywhere in the world, or futures commission merchants dealing in cocoa futures.
- *Associate members.* These are firms or individuals who render supporting services to the cocoa trade, such as exchange floor brokers, exporters' agents, banks, carriers, warehouse operators, pest control companies and underwriters.

The CMAA main governing body is the membership meeting, which elects a Board of Directors, its principal officers, and the members of the Arbitration Committee. Directors' terms are for two years, and they may not hold more than two consecutive terms. There are eight directors representing regular members, and two representing associate trade members or associate members. In addition, the membership must approve any changes in by-laws (which include the rules on arbitration) and in standard contract provisions. The membership meets once a year on a regular basis, and whenever there is a need for specific action, such as the above changes in by-laws and contractual provisions.

The principal officers are the Chairman of the Board of Directors, the Vice-Chairman of the Board and the Secretary-Treasurer. They are elected for one-year terms and may hold only two consecutive terms.

The association's day-to-day activities are handled by the President, who is the Chief Executive Officer and who is elected by the Board of Directors. The President has no term limits. When this office is vacant, the Board may appoint an Administrator, who handles routine matters.

Cocoa Merchants' Association of America, Inc.  
 26 Broadway, Suite 707  
 New York, NY 10004  
 United States  
 Tel: +1 212 363 7334  
 Fax: +1 212 363 7678  
 E-mail: [cocoamerchants@psinet.com](mailto:cocoamerchants@psinet.com)  
 Website: [www.cocoamerchants.com](http://www.cocoamerchants.com)

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## Fédération du commerce des cacaos

The Fédération du commerce des cacaos (FCC), the French cocoa trade association, was founded in 1936 and was registered originally as the Association française du commerce des cacaos (AFCC). It has five sections, each dealing with:

- Production and export;
- International trade and imports;
- Industrial processors;

- Auxiliary commercial activities; and
- Institutions, i.e. organizations directly or indirectly linked to the cocoa trade.

Its objectives are to:

- Unite, in a non-profit grouping, all professionals in the trade in cocoa beans and cocoa-based products so as to assure the defence of the legitimate interests of the trade in these products.
- Support the improvement of cultivation practices, the collection and preparation of the crop and the methods of handling and transporting cocoa.
- Assist and encourage all research activities which aim at qualitatively and quantitatively improving cocoa bean production and that of their derivative products.
- Support the development of cocoa-based products and, to this effect, organize cooperation between the various branches of the cocoa trade.
- Harmonize commercial practices in transactions and documentation on these transactions (particularly sales contracts, charter parties and insurance certificates).
- Formulate, define, elaborate and adopt appropriate model contracts, as well as all other documents relative to the trade in cocoa beans and their derivative products.
- Support the speedy voluntary adoption by those engaged in trade in general of all its contract forms and documents elaborated or adopted by it.
- Institute and promote rules which allow, through a correct sampling procedure, the examination of the quality of raw cocoa and of its derivative products and, where necessary, their analysis.
- Support the examination and the discussion of all questions relative to the trade in cocoa beans and their derivative products.
- Collect and distribute all information relative to the trade in cocoa beans and their derivative products.
- Organize rules to settle disputes by arbitration.
- Introduce all reforms and undertake all arrangements which favour the trade in cocoa beans and their derivative products.
- Participate in the creation of all professional organizations with the same or parallel aims, or join, whenever necessary, such organizations if they already exist.
- Establish all contacts deemed necessary with national or international organizations, such as UNCTAD, FAO, ICCO, EU and IOCCC, which, *inter alia*, carry out studies on cocoa, or make regular or occasional decisions or initiatives on cocoa and its derivative products.

FCC is governed by a Board of Directors (Comité directeur) representing FCC's five sections. The Chief Executive Officer (Délégué général) is responsible for the operation of the Secretariat.

FCC organizes internally a system of holding arbitration hearings and establishes for the purpose a Board of Arbitrators (*Chambre arbitrale*) consisting of members of good standing. The Board and its Secretariat are based at FCC headquarters. It is divided into two committees, each dealing with quality arbitration and technical arbitration.

FCC issues standard contracts. The following contracts are currently available:

- Contract No. 1: CIF net landed weights;
- Contract No. 2: FOB shipping weights;
- Contract No. 3: FOB net landed weights;
- Contract No. 4: CIF landed weights with the options ‘landed’ and/or ‘delivered into warehouse’;
- Contract No. 5: CIF in bulk, in containers, quality at shipment, net landed weights;
- Contract No. 6: CIF in bulk, in containers, quality at arrival, net landed weights;
- Contract No. 7: CIF in bulk, loose in ship’s hold, quality at shipment, net landed weight.

Fédération du commerce des cacao  
Bourse de commerce  
2, rue de Viarmes  
F-75040 Paris Cedex 01  
France  
Tel: + 33 1 42 33 15 00  
Fax: + 33 1 40 28 47 05  
E-mail: [fcc@fcc-asso.com](mailto:fcc@fcc-asso.com)

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## German Cocoa Trade Association

The German Cocoa Trade Association (Verein der am Rohkakaohandel beteiligten Firmen e.V.) was founded in 1911 by 11 Hamburg cocoa merchants. Its objectives and mission are to safeguard the common interests of its members on a national, European and international level. It has been and is committed to the principles of a free world market.

It has 30 members, most of whom are cocoa merchants, brokers and exporters’ agents with important functions in the supply of raw cocoa and intermediary cocoa products to processors in Germany and the rest of Europe, notably eastern Europe. Some members are involved in the cocoa trade as warehousekeepers, banks, underwriters, carriers or other service functions.

Most members of the Association use CAL and FCC standard contracts. They rely on the arbitration rules provided by both these organizations as well as on the Hamburg Friendly Arbitration system.

German Cocoa Trade Association  
Gotenstrasse 21  
D-20097 Hamburg City Süd  
Germany  
Tel: +49 40 23 60 16 25  
Fax: +49 40 23 60 16 10/11/40  
E-mail: [kakao@wga-hh.de](mailto:kakao@wga-hh.de)  
Website: [www.wga-hh.de](http://www.wga-hh.de)

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## European Cocoa Association

The European Cocoa Association (ECA) was launched in April 2000 in response to continuing European political and economic integration, ongoing globalization, greater regulation and consolidation in the cocoa industry, and privatization in cocoa-producing countries. It is a trade association representing the entire European cocoa sector. Its members consist mainly of companies involved in cocoa bean trading, processing, warehousing and other logistical operations. Some grind and process cocoa beans into cocoa liquor, cocoa butter and cocoa powder, and some produce industrial chocolate and compounds. ECA also serves as a discussion forum at the senior management level for the broad spectrum of companies directly or indirectly involved with the cocoa chain.

ECA has three categories of members:

- Effective (core) members, consisting of companies based in Europe. They are directly involved in the cocoa bean trade, cocoa-bean processing, production of industrial chocolate, warehousing and other logistical operations.
- Associate members, comprising upstream privatized companies (non-European) and downstream players (European and non-European) involved with cocoa and cocoa products.
- Contributor members, consisting of service-sector companies as well as associations and individuals directly or indirectly connected with the cocoa chain.

ECA has the following objectives:

- To be the voice of the European cocoa industry in Brussels.
- To be the central link in the cocoa chain, i.e. between producers in origin countries (suppliers to core members) and suppliers of cocoa-derived products (customers of core members) to the consumer.
- To be a go-between in discussions among representatives of cocoa producers and cocoa users.
- To represent members at all international policy-making bodies.
- To ensure the long-term availability of high-quality cocoa.

European Cocoa Association  
Avenue de Cortenbergh 118, box 8  
B-1000 Brussels  
Belgium  
Tel: +32 2 737 95 75  
Fax: +32 2 737 95 01  
E-mail: [info@cocoa-eu.com](mailto:info@cocoa-eu.com)

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## International Office of Cocoa, Chocolate and Sugar Confectionery Industries

The International Office of Cocoa, Chocolate and Sugar Confectionery Industries (IOCCC) was established in 1930. It is an association of regional



associations, which themselves represent more than 2,000 companies in 23 countries. IOCCC is a reference point for the exchange of a wide range of scientific, technical and market information and ideas in the chocolate and confectionery industry. Its members are the following:

Confectionery Manufacturers of Australasia, CMA  
PO Box 1307  
Camberwell, Victoria 3124  
Australia  
Tel: +61 3 9813 1600  
Fax: +61 3 9882 5473  
E-mail: [spencer@candy.net.au](mailto:spencer@candy.net.au)  
Website: [www.candy.net.au](http://www.candy.net.au)

Brazilian Chocolate, Cocoa & Confectionery Manufacturers Associations,  
ABICAB (Brazil)  
Av. Paulista 1313, 8º Andar S/809  
São Paulo  
Brazil  
Tel: +55 11 287 5633  
Fax: +55 11 287 5287  
E-mail: [abicab@uol.com.br](mailto:abicab@uol.com.br)

Association of the Chocolate, Biscuit and Confectionery Industries  
of the European Union, CAOBISCO  
1 Rue Defacqz  
B-1000 Brussels  
Belgium  
Tel: +322 539 1800  
Fax: +322 539 1575  
E-mail: [caobisco@caobisco.be](mailto:caobisco@caobisco.be) (IOCCC: [ioccc@caobisco.be](mailto:ioccc@caobisco.be))  
Website: [www.caobisco.com](http://www.caobisco.com)

Chocolate Manufacturers Association, CMA  
7900 Westpark Drive, Suite A 320  
McLean, Virginia 22102  
United States  
Tel: +1 703 790 5011  
Fax: +1 703 790 5752  
E-mail: [info@candyusa.org](mailto:info@candyusa.org)  
Website: [www.candyusa.org](http://www.candyusa.org)

## *Appendices*



## Appendix I

# International cocoa standards: *Model Ordinance and Code of Practice*

(Adopted at a meeting of producers, importers and processors held by FAO in Paris in 1969)

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## Model Ordinance

### 1. Definitions

*Cocoa bean*: The seed of the cocoa tree (*Theobroma cacao* Linnaeus); commercially and for the purpose of this Model Ordinance the term refers to the whole seed, which has been fermented and dried.

*Broken bean*: A cocoa bean of which a fragment is missing, the missing part being equivalent to less than half the bean.

*Fragment*: A piece of cocoa bean equal to or less than half the original bean.

*Piece of shell*: Part of the shell without any of the kernel.

*Adulteration*: Adulteration of the composition of graded cocoa by any means whatsoever so that the resulting mixture or combination is not of the grade prescribed, or affects injuriously the quality of flavour, or alters the bulk or weight.

*Flat bean*: A cocoa bean of which the cotyledons are too thin to be cut to give a surface of cotyledon.

*Foreign matter*: Any substance other than cocoa beans, broken beans, fragments, and pieces of shell.

*Germinated bean*: A cocoa bean, the shell of which has been pierced, slit or broken by the growth of the seed germ.

*Insect-damaged bean*: A cocoa bean the internal parts of which are found to contain insects at any stage of development, or to show signs of damage caused thereby, which are visible to the naked eye.

*Moldy bean*: A cocoa bean on the internal parts of which mold is visible to the naked eye.

*Slaty bean*: A cocoa bean which shows a slaty color on half or more of the surface exposed by a cut made lengthwise through the center.

*Smoky bean*: A cocoa bean which has a smoky smell or taste or which shows signs of contamination by smoke.

*Thoroughly dry cocoa*: Cocoa which has been evenly dried throughout. The moisture content must not exceed 7.5%.

(*Note*: This maximum moisture content applies to cocoa in trade outside the producing country, as determined at first port of destination or subsequent points of delivery. The Working Party reviewed the ISO method for determination of moisture content and agreed that it could be used, when recommended by ISO, as a practical reference method.)

### 2. Cocoa of merchantable quality

- a) Cocoa of merchantable quality must be fermented, thoroughly dry, free from smoky beans, free from abnormal or foreign odors and free from evidence of adulteration.

- b) It must be reasonably free from living insects.
- c) It must be reasonably uniform in size, reasonably free from broken beans, fragments, and pieces of shell, and be virtually free from foreign matter.

*(Note: As a guide not more than 12 percent of the beans should be outside the range of plus or minus one-third of the average weight. It is recognized, however, that some hybrid cocoa may not be able to meet this standard although fully acceptable to the trade.)*

### 3. Grade standards

Cocoa shall be graded on the basis of the count of defective beans in the cut test. Defective beans shall not exceed the following limits:

- |          |  |
|----------|--|
| Grade I  | <ul style="list-style-type: none"> <li>a) moldy beans, maximum 3% by count;</li> <li>b) slaty beans, maximum 8% by count;</li> <li>c) insect-damaged, germinated, or flat beans, total maximum 3% by count.</li> </ul> |
| Grade II | <ul style="list-style-type: none"> <li>a) moldy beans, maximum 4% by count;</li> <li>b) slaty beans, maximum 8% by count;</li> <li>c) insect-damaged, germinated, or flat beans, total maximum 6% by count.</li> </ul> |

*Note:* When a bean is defective in more than one respect, it shall be recorded in one category only, i.e. the most objectionable. The decreasing order of gravity is as follows:

- moldy beans;
- slaty beans;
- insect-damaged beans, germinated beans, flat beans.

### 4. Sub-standard cocoa

All dry cocoa which fails to reach the standard of Grade II will be regarded as sub-standard cocoa and so marketed under special contract.

### 5. Marketing and sealing

- a) All cocoa graded shall be bagged and officially sealed. The bag or seal shall show at least the following information:
 

Producing country, grade or “SS” if sub-standard, and whether light or mid-crop (*Note:* absence of a crop indication means main crop), and other necessary identification marks in accordance with established national practice.
- b) The period of validity of the grade shall be determined by governments in the light of climatic and storage conditions.

### 6. Recheck at port of shipment

Notwithstanding paragraph 5.b) above, all cocoa so graded shall be rechecked at port within seven days of shipment.

### 7. Implementation of Model Ordinance

Methods of sampling, analysis, bagging, marking and storage applicable to all cocoa traded under the above International Standards are set out in the following Code of Practice.

## Code of Practice

### A. Inspection

- 1. Cocoa shall be examined in lots, not exceeding 25 tons in weight.

2. Every parcel of cocoa shall be grade-marked by an inspector, after determining the grade of the cocoa on the basis of the cut test (see paragraph C. below).

Grade marks shall be in the form set out in, and shall be affixed according to [...the appropriate reference in national regulations...] and shall be placed on bags by means of a stencil or stamp (see also paragraph E. below).

## **B. Sampling**

1. Samples for inspection and analysis should be obtained:
  - a) from cocoa in bulk, by taking samples at random from the beans as they enter a hopper or from the top, middle and bottom of beans spread on tarpaulins or other clean, dust free surface, after they have been thoroughly mixed;
  - b) from cocoa in bags, by taking samples at random from the top, middle and bottom of sound bags using a suitable stab-sampler to enter closed bags through the meshes of the bags, and to enter unclosed bags from the top.
2. The quantity of the samples to be taken should be at the rate of not less than 300 beans for every ton of cocoa or part thereof, provided that in respect of a consignment of one bag or part thereof, a sample of not less than 100 beans should be taken.
3. For bagged cocoa, samples shall be taken from not less than 30% of the bags, i.e. from one bag in every three.
4. For cocoa in bulk, not less than five samplings shall be taken from every ton of cocoa or part thereof.
5. In importing countries samples for inspection should be taken from not less than 30% of each lot of 200 tons or less, i.e. from one bag in three. Samples should be taken at random from the top, the middle and the bottom of the bag.

## **C. The cut test**

1. The sample of cocoa beans shall be thoroughly mixed and then 'quartered' down to leave a heap of slightly more than 300 beans. The first 300 beans shall then be counted off, irrespective of size, shape and condition.
2. The 300 beans shall be cut lengthwise through the middle and examined.
3. Separate counts shall be made of the number of beans which are defective in that they are moldy, slaty, insect damaged, germinated, or flat. Where a bean is defective in more than one respect, only one defect shall be counted, and the defect to be counted shall be the defect which occurs first in the foregoing list of defects.
4. The examination for this test shall be carried out in good daylight or equivalent artificial light, and the results for each kind of defect shall be expressed as a percentage of the 300 beans examined.

## **D. Bagging**

1. Bags should be clean, sound, sufficiently strong and sewn. Cocoa should be shipped only in new bags.

## **E. Sealing and marketing**

1. After grading, each bag should be sealed with the individual examiner's seal. The grade should be clearly marked on each bag. Bags should also be clearly marked to show the grading station and period of grading (week or month).

For these purposes the following measures shall be carried out:

- a) Suitable precautions will be taken in the distribution and use of examiners' seals to ensure that they cannot be used by any unauthorized person;
- b) Parcels shall be numbered consecutively by the official examiner with lot numbers from the beginning of each month. The parcel number or lot number will be stencilled on each bag in every parcel examined, in the corners nearest the seal;
- c) Grade marks will be stencilled near the mouth of the bag.

## **F. Storage**

1. Cocoa shall be stored in premises constructed and operated with the object of keeping the moisture content of the beans sufficiently low, consistent with local conditions. Storage shall be on gratings or deckings that allow at least 7 cm of air space above the floor.
2. Measures shall be taken to prevent infestation by insects, rodents and other pests.
3. Bagged cocoa shall be so stacked that:
  - a) each grade and shipper's mark is kept separate by clear passages of not less than 60 cm in width, similar to the passage which must be left between the bags and each wall of the building;
  - b) disinfection by fumigation (e.g. with methyl bromide) and/or the careful use of acceptable insecticides sprays (e.g. those based on pyrethrin) may be carried out when required; and
  - c) contamination with odours or flavours or dust from other commodities, both foodstuffs and materials such as kerosene, cement or tar, is prevented.
4. Periodically during storage and immediately before shipment, the moisture content of each lot should be checked.

## **G. Infestation**

1. Cocoa beans may be infested with insects which have not penetrated the beans and whose presence is not revealed by the cut test which is employed for grading purposes. Such insects may subsequently enter beans or they may be involved in cross infestation of other shipments.
2. Therefore, when the cocoa is rechecked at port before shipment, as provided under paragraph 6. of the Model Ordinance, it should also be inspected for infestation by major insect pests. If it is found to be infested it should, before shipment, be fumigated, or otherwise treated to kill the pests. Care should be taken to avoid cocoa beans becoming infested in ships and stores from other commodities or with insects remaining from previous shipments.
3. If the use of insecticides or fumigants is necessary to control infestation, the greatest care must be exercised in their choice and the technique of their application to avoid incurring any risks of tainting or the addition of toxic residues to the cocoa. Any such residues should not exceed the tolerances prescribed by FAO/WHO Codex Committee on Pesticide Residues and the FAO/WHO Expert Committee on Pesticide Residues and by the government of the importing country.
4. Rodents should as far as possible be excluded from the cocoa stores by suitable rodent-proof construction, and where direct measures are necessary to control rodents the greatest care must be taken to prevent any possibility of contaminating the cocoa with substances which may be poisonous.

## **Appendix II**

# **Grading standards by country**

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A compilation of grading standards for cocoa beans, both national and international, is presented in the table that follows.





Country	Standard authority	Description	Bean count per 100 grams		Faults (by percentage)						% foreign matter	Other specifications and comments
			Mould	Slate	Inf.	Germ.	Flat	Violet	Moisture			
Malaysia	Federal Agricultural Marketing Authority	SMC 1-A	3	3	2.5	(c)	NS	NS	7.5	0	Cocoa showing live infestation (more than 10 insects per bag requires fumigation).	
		SMC 1-B	3	3	2.5	(c)	NS	NS	7.5	0		
		SMC 1-C	3	3	2.5	(c)	NS	NS	7.5	0		
		SMC 2-A	4	8	2.5	(c)	NS	NS	7.5	0		
		SMC 2-B	4	8	2.5	(c)	NS	NS	7.5	0		
		SMC 2-C	4	8	2.5	(c)	NS	NS	7.5	0		
		Sub-standard	>4	>8	>5	(c)	(c)	(c)	NS	NS	To be of merchantable quality, all cocoa must free of foreign odours or adulterated.	
Nigeria	Federal Produce Inspection Service	Grade 1	3	3	3	(c)	(c)	(c)	NS	7.5	0	
		Grade 2	4	8	6	(c)	(c)	(c)	NS	7.5	0	
Papua New Guinea	Cocoa Board	Sub-standard	Cocoa which exceeds Grade 2 limits						5.5-7.5	1	Board-approved fermentation/drying process free from foreign odours.	
Sierra Leone	SLPMB	Export quality	5	1	(d)	(f)	(f)	(f)	NS	NS	Max. 15% mould, slaty, infested, germinated or flat.	
		Grade 1	3	3	3	3	3	3	NS	NS	Max. 30% mould, slaty, infested, germinated or flat.	
		Grade 2	4	8	6	6	6	6	NS	NS		
		Subgrade	Cocoa which exceeds Grade 2 limits						NS	NS	Cocoa for export must be fermented, thoroughly dry, free from abnormal or foreign odours and free from adulteration, reasonably free from live insects, broken beans, fragments and pieces of shell.	
Solomon Islands	Commodities Export Marketing Authority	Grade 1	3	3	3	(c)	(c)	(c)	NS	NS	0	
		Grade 2	4	8	6	(c)	(c)	(c)	NS	NS	0	
		Grade 1	3	3	3	(c)	(c)	(c)	NS	7.5	0	
Togo		Grade 2	4	8	6	(c)	(c)	(c)	NS	7.5	0	
		Grade 1	3	3	3	(c)	(c)	(c)	NS	7.5	0	
		Grade 2	4	8	6	(c)	(c)	(c)	NS	7.5	0	
		Sub-standard	Cocoa which exceeds Grade 2 limits						NS	NS	0	
Vanuatu	Dept. of Agriculture	I-A	3	3	3	(c)	(c)	(c)	NS	7.0	NS	
		I-B	3	3	3	(c)	(c)	(c)	NS	7.0	NS	
		II	4	<8	<6	(c)	(c)	(c)	NS	7.0	NS	
		Sub-standard	5-10	8	6-20	(c)	(c)	(c)	NS	7.0	NS	
		Inferior	>20	>10	>20	(c)	(c)	(c)	NS	7.0	NS	
United States of America	21 Code of Fed. Reg.	FDA Defect Action Levels	NS	4	4	NS	NS	NS	NS	NS	0	
		Export standard	<100	5	5	(c)	(e)	(e)	NS	5.5-7.5	1	
Western Samoa	1989 Cocoa Act	Bonne Qualité Courante	<80	5	5	NS	NS	NS	NS	NS	NS	
Zaire			81-85	5	5	NS	NS	NS	NS	NS	NS	

Sources: Robin Dand and J.J. Scheu, 1995.

Key:

NS Not Specified.

(a) This ordinance has been adopted by several countries, in some cases with modification, but it has not force of law *per se*.

(b) Not more than 12% of the beans should be outside the range of +/− one-third of the average weight.

(c) Included in insect infested.

(d) Included in mould.

(e) Included in germinated.

(f) Included in foreign matter.

(g) Detailed schedule of discounts according to bean size.

(h) If description includes 'Main Crop'.

(i) Flat beans shall be considered as defective beans only if the parcel is not subject to an allowance or replacement for bean count.

(j) Parcel must be dry.

(k) Considered as cocoa shell.

## Appendix III

# The International Cocoa Agreement: a brief history

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## Introduction

The world cocoa market is notoriously unstable. The yield from a farm or plantation can vary enormously from season to season depending upon favourable or adverse weather conditions. Prices can fall heavily when, for example, the weather in West Africa is favourable and the crop is large; they can rise sharply when the rains fail and the size of the crop is severely reduced. These boom-and-bust conditions can sometimes be accentuated by speculative activity, mainly on the futures markets. This type of instability is not in the best interests of either the farmers or the users of cocoa.

During the post-independence era of the 1960s, the Governments of producing countries deriving a high proportion of their foreign exchange earnings from cocoa found that the volatility of the world cocoa market adversely affected their ability to manage their balance of payments, national reserves and budgets. It was difficult for them to plan and implement sound fiscal, monetary and trade policies. Similarly, in importing countries, the instability made business planning and budgeting difficult for pressers and manufacturers.

It was against this background that the idea of an international cocoa agreement to stabilize the market was conceived. The first negotiating conference was convened in 1963 by the Secretary-General of the United Nations. Subsequently, when the United Nations Conference on Trade and Development (UNCTAD) was established, it was decided that efforts would be taken to ensure that the commodity-dependent countries of Africa, Asia and Latin America would derive reasonable incomes from their exports, in order to aid their development. It was not until the United Nations Cocoa Conference in 1972, however, that the first Agreement was successfully negotiated.

## The first International Cocoa Agreement

Agreement concluded in  
1972

The first Agreement was concluded in Geneva in October 1972, which led to the establishment of the International Cocoa Organization (ICCO) in 1973 to administer it. The Agreement was negotiated by a substantial majority of the largest of the cocoa-producing and cocoa-consuming countries at a conference convened by UNCTAD, which has also played host to the negotiations on all successive Agreements.

The principal objectives of the Agreement were to stabilize prices of cocoa within an agreed price range, thus counteracting the volatility that had been a traditional feature of the market, and to increase the income derived from cocoa by producing countries. The price-defence instruments of the Agreement comprised an export quota scheme and a buffer stock with a maximum capacity of 250,000 tons of cocoa beans, designed to absorb production in excess of quotas. The Agreement provided for a levy on exports and imports of cocoa by member countries, to finance the operation of the buffer stock.

United States not a  
signatory

With the exception of the United States, all the major exporters and importers of cocoa were signatories to the Agreement, which came into effect in 1973. The first Agreement was in force for three years and, throughout that period, cocoa prices remained above the Agreement range. As a consequence, in the absence of any cocoa in the buffer stock, the mechanism to contain prices within the range defined by the Agreement was not activated. However, the very existence of strong mechanisms to defend the floor price provided a safety net to price variations in the market.

During the term of the first Agreement, ICCO also played an important role in developing market transparency with the collation and publication of statistics on the cocoa market, and the provision of other information and analysis. This included the preparation of a number of economic studies.

## Second Agreement

Enters into force in 1976

The second Agreement came into force in 1976. Membership of this Agreement was essentially the same as for the first and, apart from a higher price range to be defended, it differed very little from the original. Price-regulatory action was not taken throughout the life of the Agreement as world cocoa prices stayed above the agreed range and no cocoa went into the buffer stock. The strong mechanisms provided by the first two cocoa Agreements to defend the floor price encouraged producing countries, international donors and financial institutions in the 1970s to promote the development of the cocoa sector. This led to increases in production and improved export earnings from cocoa, in line with one of the fundamental objectives of the Agreements.

Owing to these large increases in production, however, towards the end of the 1970s prices started to fall. Furthermore, through the levy system, sizeable funds (around US\$ 230 million) had been accumulated by the time the second Agreement expired in 1980.

## Third Agreement

Concluded in 1980

The third Agreement was concluded in 1980. It was significantly different from its predecessors in that the quota system was abandoned and the price-defence mechanism was based purely on operations of the buffer stock. The level of prices to be defended was raised and the width of the price band was increased. The revised price range was structured differently from the previous ones and included a minimum price, a lower intervention price, an upper intervention price and a maximum price. The Agreement entered into force only provisionally in August 1981 because, in addition to the United States and Malaysia (who had not joined the previous Agreements), a number of other countries that had been members of these Agreements decided not to join the new one. They included Côte d'Ivoire, which by then had become the world's largest cocoa producer. The Agreement was twice extended, in the first instance through to September 1985 and subsequently to September 1986.

By 1982, buffer stock operations in defence of the lower end of the price range had purchased 100,000 tons of cocoa and the finances of the buffer stock had become depleted. Consequently, further buffer stock buying could not be undertaken to continue the defence of cocoa prices in that year. However, in 1983 and 1984, the United States dollar appreciated considerably against all other major currencies. This created the peculiar situation in which world cocoa prices, though still nominally within the price range of the Agreement, exceeded the 1980 equivalent of the maximum price of the Agreement in most currencies

other than the United States dollar. Therefore, according to the terms of the Agreement, buffer stock sales could not be made to lower prices in order to alleviate the effects on member countries operating in their own currencies.

## Fourth Agreement

Concluded in 1986,  
operational in 1987

The 1986 Agreement, the fourth in the series, came into force provisionally early in 1987. Côte d'Ivoire, along with Gabon and Togo, became contracting parties. Malaysia (which had been growing rapidly in importance as a cocoa producer) and the United States did not.

The buffer stock remained the main instrument for the control of prices, and was reinforced by the provision for a stock withholding scheme. Under this scheme, up to a total of 120,000 tons of cocoa beans could be required to be withheld by exporting countries after the buffer stock had reached its physical or financial capacity and prices still needed to be defended.

Special drawing right

The problems experienced in the 1980 Agreement with respect to currency movements were remedied in the 1986 Agreement by the denomination of price ranges in terms of a basket of currencies. For this purpose, the unit of account of the International Monetary Fund was used, otherwise known as the special drawing right, or SDR. Since that decision, official ICCO daily prices of cocoa have been expressed in the first instance in SDRs, thereafter converted to United States dollars using the prevailing exchange rate. The operating price ranges of the 1986 Agreement were constructed with a lower intervention price, a 'may buy' price, a 'median' price, a 'may sell' price and an upper intervention price, all expressed in SDRs per ton.

The Agreement also provided for a semi-automatic adjustment of the price range which was activated under certain defined conditions relating mainly to volumes of cocoa bought or sold by the buffer stock within a given period. A revised price range either would be negotiated or would be adjusted by a predefined amount of SDR 115 per ton in the relevant direction.

Buffer stock of 250,000  
tons

Between January 1987 (when the 1986 Agreement entered into force) and 25 February 1988, a further 150,000 tons of cocoa were purchased for the buffer stock, thus causing it to reach its prescribed capacity of 250,000 tons. This, however, failed to keep prices in the prescribed range, even after a downward revision of this range had been implemented according to the fall-back formula. By this time, the world cocoa market was in a state of chronic oversupply and the withdrawals from the market represented by buffer stock purchases had no discernible effect on prices, which fell continuously during the period. Essentially as a result of these conditions, difficulties emerged in the implementation of the Agreement. First, the planned withholding scheme was never implemented because of a failure to resolve a dispute on the interpretation of the terms of the Agreement with regard to whether there should be a further downward revision to the price range before the scheme came into effect. Second, a number of countries, including Côte d'Ivoire and, latterly, Ghana, decided to withhold further payments of levies on their exports. As a result, the price-stabilization measures of the Agreement were suspended.

In 1990, near the end of the initial period of the fourth Agreement, the Council decided to extend it for a two-year period, but without its market-intervention provisions. Both the levy and the use of the buffer stock for price defence were frozen. The only permitted activities were the sale of buffer stock material in order to support financially the maintenance of the stock or the sale of any material that had become more than 10% defective.

Despite these difficulties, the third and fourth Agreements demonstrated that it was possible to maintain 250,000 tons of cocoa in good condition over a considerable length of time. The existence of these stocks, well kept and readily available in the ports of consuming countries, increased the security of supply in the industry. This, in turn, contributed to a change in stockholding behaviour, with many firms deciding to reduce their level of working stocks to a few weeks or even days, thus making significant economies.

With hindsight, it can now be seen that the first two Agreements worked more to the benefit of producer members, while the third and fourth Agreements tended to favour consumer members. As these advantages were derived at different times, there was always one party with a complaint, thus detracting somewhat from the true merits of these Agreements. The fact, however, that the Agreements focused on short-term price defence action and thus highlighted the operational difficulties associated with the mechanisms, at least meant that these were problems which later Agreements would attempt to address.

## Fifth Agreement – and beyond

As a result of the experiences gained during the implementation of the fourth and earlier Agreements, it was decided to refocus the objectives of the economic provisions of the new Agreement. The inherently limited effectiveness of short-term market intervention measures, and their possible risks, led to the replacement of such measures by medium- to longer-term objectives in the fifth Agreement.

Liquidation of the buffer stock in 1993-1998

A decision was made in 1993 to liquidate the buffer stock of 250,000 tons in a controlled way, selling 4,250 tons per month until it was exhausted. This exercise was completed in March 1998. It was decided to replace the buffer stock with a global production-management plan complemented by measures designed to increase the volume of global cocoa consumption. Production and Consumption Committees were set up as subsidiary bodies to the International Cocoa Council to oversee these provisions.

### Objectives other than market intervention

1993 Agreement comes into force in 1994

The fifth Agreement came into force in February 1994. It included objectives beyond those concerned with direct market intervention. Some were continued or were developed from those defined in previous Agreements while others were added. Briefly stated, the full set of objectives of the fifth Agreement, contained in Article 1 of the Agreement, are:

- To promote the development and strengthening of international cooperation in the cocoa sector.
- To contribute towards stabilization of the world cocoa market, by seeking, in particular:

To bring about a balanced development of the cocoa market through adjustments in production and the promotion of consumption so as to secure an equilibrium in the medium and long term between supply and demand.

To assure adequate supplies at reasonable prices equitable to producers and consumers.

- To facilitate expansion of international trade in cocoa.
- To promote transparency in the workings of the world cocoa economy.
- To promote scientific research and development.
- To provide a forum for discussion on all matters relating to cocoa.



## The production-management plan

The production-management plan has been in operation since the entry into force of the fifth Agreement in 1994. Its objective has been to ensure that the medium- to long-term trend in world production does not become inconsistent with the expected trends in global consumption, thus leading to a market imbalance in terms of excess supply or critical world shortages.

The production-management plan is implemented in a number of steps. First, the Council adopts forecasts of the essential parameters of the world cocoa market (i.e. production, consumption, stocks and prices). Thereafter, the Production Committee determines the adjustments to global production that would be required to bring about a balance in supply and demand in the medium to long term. This leads to the fixing of indicative tonnages of global production, which are then used to distribute adjustments of production to individual countries. The countries participating in the plan subsequently report to the Committee on the measures they have taken, and propose to take, to achieve the required adjustments to their future levels of national production. Finally, the performance of the plan as a whole is regularly reviewed by the Council, which makes recommendations on the operation of the plan and makes linkages between actions on production and consumption.

The plan has had only limited success. However, the operation of the plan has proved useful in a number of respects. It has led to the regular publication of long-term forecasts of supply and demand in the cocoa market by ICCO and efforts within producing countries to gather and analyse information on their cocoa production sectors, which is embodied in the reports they present to the ICCO Production Committee. This has contributed to greater transparency in the cocoa market and to closer consideration within the ICCO Council of likely future market developments. The process has helped to identify action that will be needed on both production and consumption sides of the market. Nevertheless, it is true to say that the implementation of such a plan has had some difficulty, particularly in regard to the allocation of adjustments to be made to the production of individual countries.

It is also important to note that, under the fifth Agreement, action on the supply side of the market through the production-management plan has been balanced by efforts on the demand side to promote cocoa consumption. In this area there have been a number of successful activities, including an effective project on the generic promotion of cocoa and chocolate in Japan and the publication of an authoritative book on the health and nutrition properties of cocoa. Follow-up work is being actively pursued in other countries, including China, the Russian Federation and the cocoa-producing countries themselves.

## Market transparency: the provision of information

The Agreement recognizes that transparency in the workings of the market is essential for its efficient functioning. Individual cocoa producers and consumers as well as policy makers require access to relevant information and have to be aware of the implication of each other's actions and policies on the current and future prospects of the cocoa economy. This has been particularly emphasized under the 1993 Agreement with the further development of the ICCO library facilities and its emergence as a valuable source of information on cocoa.

The ICCO's *Quarterly Bulletin of Cocoa Statistics* provides an authoritative source of data on the world cocoa market. Other regular publications include the *World Cocoa Directory* and the *ICCO Cocoa Newsletter*. ICCO also publishes economic analyses and studies. The ICCO daily price of cocoa is widely disseminated through news services and publications, as well as on the Internet.

## Activities and projects

An ICCO core activity is acting as a forum for discussion between producers and consumers. This dialogue has resulted in many further activities and projects, some of which are mentioned below.

One activity that has evolved significantly under the fifth Agreement is support to development work in cocoa through the preparation, implementation and supervision of projects. This work was originally prompted by the availability of funds for project work from the Common Fund for Commodities (CFC) in the early 1990s. It has evolved since then and has a greater diversity of sources of funds and more coverage of areas outside the scope of CFC. Donor countries from among ICCO members, as well as private-sector donors comprising both associations and companies, have become increasingly important. Indeed, private-sector participation in projects is increasing. Towards the end of 2000, eight projects were being implemented, or had secured financing, with a total budget of almost US\$ 27 million.

Some ICCO-sponsored projects are in support of the objective of the Agreement to increase consumption of cocoa. Examples are a particularly successful project on the generic promotion of cocoa consumption in Japan (mentioned earlier), and another on the utilization of cocoa by-products taking place in Ghana.

Others address problems on the production side, such as the control of particular pests and diseases. For example, support for efforts in Brazil to reverse the serious decline in production in Bahia caused by the witches' broom disease is being provided by an ICCO project on the use of biotechnology. This project aims to develop planting material that is resistant to the disease. On a wider scale, a project on the conservation and utilization of cocoa germ-plasm has been implemented by the International Plant Genetic Resources Institute (IPGRI). It aims to identify and propagate new varieties with increased resistance to common cocoa diseases, such as black pod and witches' broom, as well as to enhance the yield and sustainability properties of planting material.

Projects also address problems arising from recent developments in the world cocoa market. An extremely valuable project now being implemented is the improvement of cocoa marketing and trade practices in the liberalizing cocoa economies, aiming to smooth the transition from State-controlled to privatized systems in the major African cocoa-producing countries. Other projects to develop aspects of cocoa marketing are also underway. Objectives include the improvement of the quality of marketed cocoa, identification of the properties that distinguish fine or flavour cocoa from basic cocoa, and development of price risk-management facilities for cocoa farmers through their cooperatives.

An example of a somewhat different type of activity is a feasibility study in Gabon on the regeneration of cocoa growing in that country. The study was commissioned from ICCO by the Government of Gabon and implemented with experts from both producing and consuming countries. ICCO now has its own environment fund with the potential to support work in this area.

ICCO has played an active role in the development of specifications for food-grade jute and sisal bags and in detailed surveys of size and location of cocoa bean stocks worldwide. Finally, it has also been active in the recent drive to define the elements involved in sustainable cocoa production systems and the achievement of a sustainable world cocoa economy. It has designed its own programme, incorporating several individual projects, to address these issues.



## Sixth Agreement

2001

The sixth International Cocoa Agreement will be the subject of a negotiating conference at UNCTAD in March 2001. It is intended to build on the positive aspects of the earlier Agreements and particularly on recent fruitful work. One of its main features, in comparison with previous Agreements, will be the closer integration and involvement of the private sector in the workings of the organization.

Major features would include:

- Provision of maximum market transparency through publication of up-to-date and reliable statistics, analyses of market developments and prospects, and supply of information on developments in the cocoa sector.
- Promotion of sustainable cocoa production through the ICCO programme for a sustainable cocoa economy, and hosting of the international sustainable cocoa programme, incorporating the private sector, NGOs and agricultural research institutes in this coordination work.
- Promotion of cocoa consumption, in close cooperation with the private sector, which will also fall within the ICCO programme for a sustainable cocoa economy.
- Support for cocoa research and development of the cocoa sector with work on specific projects.
- Acting as a platform for all players in the world cocoa economy, to solve issues and problems of mutual interest.

The text of the International Cocoa Agreement can be found at [www.icco.org](http://www.icco.org).

## Appendix IV

# New initiatives

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There are some strong initiatives and trends in food production and the environment, usually driven by public concerns, which the cocoa trade and industry should be aware of. These trends may present both obstacles and opportunities for producers and traders in the future. Two of the most actively supported at present are briefly described below. More details of these and other initiatives are available from the various organizations mentioned in this guide.

## Organic cocoa

Organic cocoa is grown and certified in more than 15 countries. This number is growing as demand for organic cocoa is on the increase. The aim of organic farming is to support and strengthen biological processes without recourse to technical remedies such as synthetic fertilizers and pesticides as well as genetically modified organisms (GMO).

Organic farming is distinguished by the existence of production standards and certification procedures. In order to ensure that products claimed to be organic are actually produced according to organic farming principles, they must be certified organic. Certification involves a third party – the certifier – who gives written assurance that a product labelled organic is produced according to organic farming standards.

### ***Organic certification***

*For a product to be certified organic, all operators in the product chain – farmers, exporters, importers, processors, manufacturers, wholesalers and retailers – must be certified as acting in conformity with the standards and regulations of the certification programme concerned.*

*For products to enter a specific market, they must be certified as having been produced according to the standards applicable in that market. Certification is thus a necessary condition for international trade in organic products.*

*There are currently no specific standards for organic cocoa and cocoa products in any of the main markets. However, organic cocoa and cocoa products must be certified according to the standards applicable to organic food products in general.*

In the European Union, the basic regulations on organic food products are set out in Council Regulation (EEC) No. 2092/91 June 1991 and its amendments. In the United States, the Organic Food Production Act (OFPA) was adopted in 1990 in order to establish a National Organic Program (NOP). But, there are as yet no clear rules or regulations on organic products and, to the extent that they exist, they vary considerably from State to State. The US Department of Agriculture has recently proposed detailed requirements and guidelines for the

production and handling of organic agricultural products. They have been published for comment in the year 2000 and are likely to become law thereafter.

In July 1999, *Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods* were adopted by the FAO/WHO Codex Alimentarius Commission. Further information can be found at the FAO website ([www.fao.org/organicag](http://www.fao.org/organicag)).

Reference should also be made to the International Federation of Organic Agriculture Movements (IFOAM). It was set up in 1972 as an umbrella organization for national organic agriculture associations. IFOAM has established international Basic Standards of Organic Agriculture and Food Processing, which provide a framework for various certification programmes. IFOAM has consultative status with the European Union and the Codex Alimentarius Commission, as well as formal liaison status with FAO.

IFOAM has an international accreditation programme, which is operated by the International Organic Accreditation Service (IOAS), an independent non-profit organization with IFOAM as sole member. IFOAM's website is at [www.ifoam.org](http://www.ifoam.org).

Further information on organic products and markets is provided in the ITC study *Organic Food and Beverages – World Supply and Major European Markets* (1999).

## Fair trade cocoa

Smallholders producing cash crops for the international market have always been vulnerable to falling world market prices. A number of organizations worldwide try to reduce these risks by ensuring that producers are rewarded fairly for their products.

The organizations guarantee the small farmers a fair price for their produce and act as intermediaries in marketing the products, which then bear the label (an approval mark or logo) of the organization. Fair trade organizations have separate programmes for different crops, of which the labels for coffee and cocoa are among the better known.

In Europe, the most frequently seen fair trade labels are those of the Max Havelaar Foundation, which was established in the Netherlands in the 1980s, and Transfair International, established in the early 1990s. Further information can be found at [www.maxhavelaar.org](http://www.maxhavelaar.org) and the website of Fairtrade Labelling Organizations International (FLO), [www.fairtrade.net](http://www.fairtrade.net).

Fair trade labels also appear in the United States and elsewhere, though to a lesser extent than in Europe. On the other hand, the United States has several labels of organizations dedicated to conserving the global environment, rain forests in particular. Among these, Rainforest Alliance ([www.rainforest-alliance.org](http://www.rainforest-alliance.org)) is one of the most active.

## Appendix V

# Useful websites

These website addresses make up only a small sample of the vast and growing number of Internet sites providing useful information on cocoa. The inclusion of a name on the list does not imply endorsement by ITC.

Many websites cover several categories of activities and a few are mentioned more than once. The category under which they are listed does not necessarily reflect their main line of activity.

<b>Associations and organizations</b>		
<a href="http://www.icco.org">www.icco.org</a>	ICCO	International Cocoa Organization, London
<a href="http://www.calcocoa.com">www.calcocoa.com</a>	CAL	Cocoa Association of London Ltd
<a href="http://www.cocoamerchants.com">www.cocoamerchants.com</a>	CMAA	Cocoa Merchants' Association of America
<a href="http://www.candyusa.org">www.candyusa.org</a>	CMA	Chocolate Manufacturers Association, United States
<a href="http://www.nca-cma.org">www.nca-cma.org</a>	NCA	National Confectioners Association, United States
<a href="http://www.wga-hh.de">www.wga-hh.de</a>		German Cocoa Trade Association, through the Association of Wholesale, Import and Export Trade, Hamburg
<a href="http://www.candy.net.au/IOCCC/main/htm">www.candy.net.au/IOCCC/main/htm</a>	IOCCC	International Office of Cocoa, Chocolate and Sugar Confectionery Industries, through the Confectionery Manufacturers of Australasia
<a href="http://www.bccca.org.uk">www.bccca.org.uk</a>	BCCCA	Biscuit, Cake, Chocolate and Confectionery Alliance
<a href="http://www.caobisco.com">www.caobisco.com</a>	CAOBISCO	Association of the Chocolate, Biscuit and Confectionery Industries in the European Union
<a href="http://www.chocolat.ch">www.chocolat.ch</a>		Chaine confiseur, Switzerland
<a href="http://www.fao.org">www.fao.org</a>	FAO	Food and Agriculture Organization of the United Nations
<a href="http://www.common-fund.org">www.common-fund.org</a>	CFC	Common Fund for Commodities
<a href="http://www.intracen.org">www.intracen.org</a>	ITC	International Trade Centre UNCTAD/WTO
<a href="http://www.agis-usa.org/associations/askindo.htm">www.agis-usa.org/associations/askindo.htm</a>	ASKINDO	Asosiasi Kakao Indonesia - Indonesia Cocoa Association
<a href="http://www.koko.gov.my">www.koko.gov.my</a>		Malaysian Cocoa Board
<a href="http://www.caistab.ci">www.caistab.ci</a>		Nouvelle caisse de stabilisation du cacao et du café (Nouvelle CAISTAB), Côte d'Ivoire
<a href="http://www.winne.com/ghana/socs/gcocoab.html">www.winne.com/ghana/socs/gcocoab.html</a>	COCOBOD	Ghana Cocoa Board
<a href="http://www.anecacao.com">www.anecacao.com</a>	ANECACAO	Asociación Nacional de Exportadores de Cacao (National Association of Exporters of Cocoa), Ecuador
<a href="http://www.ceplac.gov.br">www.ceplac.gov.br</a>	CEPLAC	Comissão Executiva do Plano da Lavoura Cacaueira, Brazil
<b>Trading and prices</b>		
<a href="http://www.liffe.com">www.liffe.com</a>	LIFFE	London International Financial Futures and Options Exchange
<a href="http://www.nybot.com">www.nybot.com</a>	NYBOT	New York Board of Trade
<a href="http://www.csce.com">www.csce.com</a>	CSCE/NYBOT	Coffee, Sugar and Cocoa Exchange, Inc.
<a href="http://www.bloomberg.com/bbn/index.html">www.bloomberg.com/bbn/index.html</a>		Bloomberg LP
<a href="http://www.commodities.reuters.com">www.commodities.reuters.com</a>		Reuters Commodity, Energy and Financial Futures
<a href="http://www.dowjones.com">www.dowjones.com</a>		Dow Jones & Company
<a href="http://www.edfman.com/cocoa/main.html">www.edfman.com/cocoa/main.html</a>		E D & F Man Cocoa

<a href="http://www.farmsource.com">www.farmsource.com</a>		Farmsource
<a href="http://www.iccwbo.org">www.iccwbo.org</a>	ICC	International Chamber of Commerce (Incoterms)
<a href="http://www.bolero.net">www.bolero.net</a>		Bolero International Ltd (e-commerce)
<a href="http://www.comdaq.net">www.comdaq.net</a>		Comdaq (e-commerce)
<a href="http://www.xrefer.com">www.xrefer.com</a>		Xrefer; Penguin International Dictionary (terminology)
<a href="http://www.e-analytics.com/fudir.htm">www.e-analytics.com/fudir.htm</a>		Equity Analytics (terminology)
<b>Research and pest management</b>		
<a href="http://www.cirad.fr">www.cirad.fr</a>	CIRAD	Centre de coopération internationale en recherche agronomique pour le développement (specialists in agricultural research in tropical regions)
<a href="http://www.acri-cocoa.org">www.acri-cocoa.org</a>	ACRI	American Cocoa Research Institute
<a href="http://pest.cabweb.org">pest.cabweb.org</a>		CABI Publishing
<a href="http://www.cabi.org">www.cabi.org</a>		CAB International
<a href="http://www.catie.ac.cr">www.catie.ac.cr</a>	CATIE	Centro Agronómico Tropical de Investigación y Enseñanza (Tropical Agricultural Research and Higher Education Centre), Costa Rica
<a href="http://www.oardc.ohio-state.edu/cocoa/links.htm">www.oardc.ohio-state.edu/cocoa/links.htm</a>		Ohio Agricultural Research and Development Centre and ACRI
<a href="http://vm.cfsan.fda.gov">vm.cfsan.fda.gov</a>		US Food & Drug Administration, Centre for Food Safety & Applied Nutrition
<a href="http://www.cocoaresearch.com">www.cocoaresearch.com</a>		Cocoa Research UK
<a href="http://www.gtz.de">www.gtz.de</a>	GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
<b>Sustainability and environment</b>		
<a href="http://www.ifoam.org">www.ifoam.org</a>	IFOAM	International Federation of Organic Agriculture Movements
<a href="http://www.raise.org">www.raise.org</a>	RAISE	Rural and Agricultural Income with a Sustainable Environment, United States Agency for International Development
<a href="http://www.maxhavelaar.org">www.maxhavelaar.org</a>		Max Havelaar Foundation (fair trade)
<a href="http://www.fairtrade.net">www.fairtrade.net</a>	FLO	Fairtrade Labelling Organizations International (FLO)
<a href="http://www.rainforest-alliance.org">www.rainforest-alliance.org</a>		The Rainforest Alliance
<a href="http://www.acri-cocoa.org">www.acri-cocoa.org</a>	ACRI	American Cocoa Research Institute
<a href="http://www.ipgri.cgiar.org">www.ipgri.cgiar.org</a>	IPGRI	International Plant Genetic Resource Institute
<a href="http://www.epa.gov/docs/ozone/mbr/mbrqa.html">www.epa.gov/docs/ozone/mbr/mbrqa.html</a>	EPA	US Environmental Protection Agency
<a href="http://www.unepie.org/ozat/links/mebr.html">www.unepie.org/ozat/links/mebr.html</a>	UNEP	United Nations Environment Programme
<a href="http://www.un.org/esa/sustdev/agenda21.htm">www.un.org/esa/sustdev/agenda21.htm</a>	CSD	United Nations Commission on Sustainable Development, Agenda 21
<b>Health and nutrition</b>		
<a href="http://www.new-agri.co.uk">www.new-agri.co.uk</a>		New Agriculturist
<a href="http://www.chocolateinfo.com">www.chocolateinfo.com</a>		Chocolate Information Center
<a href="http://www.candyusa.org">www.candyusa.org</a>	CMA	Chocolate Manufacturers Association, United States
<a href="http://www.the-body-shop.com">www.the-body-shop.com</a>		The Body Shop (cosmetics)
<b>Processing and manufacturing</b>		
<a href="http://www.admworld.com">www.admworld.com</a>	ADM	Archer Daniels Midland
<a href="http://www.barry-callebaut.com">www.barry-callebaut.com</a>		Barry Callebaut
<a href="http://www.britanniafood.com">www.britanniafood.com</a>		Britannia Food Ingredients
<a href="http://www.cadbury.co.uk">www.cadbury.co.uk</a>		Cadburys
<a href="http://www.africaonline.com.gh/CPC/index.html">www.africaonline.com.gh/CPC/index.html</a>	CPC	Cocoa Processing Company
<a href="http://www.cargillfoods.com/products/gerkens.htm">www.cargillfoods.com/products/gerkens.htm</a>		Gerkens
<a href="http://www.divinechocolate.com">www.divinechocolate.com</a>		The Day Chocolate Company
<a href="http://www.dutchcocoa.com">www.dutchcocoa.com</a>		Dutch Cocoa
<a href="http://www.hersheys.com">www.hersheys.com</a>		Hershey's
<a href="http://www.lindt.com">www.lindt.com</a>		Lindt & Sprüngli
<a href="http://www.mars.com">www.mars.com</a>		Mars

<a href="http://www.nestle.com">www.nestle.com</a>		Nestlé
<a href="http://www.peterschocolate.com">www.peterschocolate.com</a>		Peter's Chocolate
<a href="http://www.valrhona.fr">www.valrhona.fr</a>		Valrhona
<a href="http://www.aarhusolie.dk">www.aarhusolie.dk</a>		Aarhus Olie
<b>Other useful information</b>		
<a href="http://www.fas.usda.gov">www.fas.usda.gov</a>		United States Department of Agriculture, Foreign Agricultural Service
<a href="http://www.otal.com">www.otal.com</a>	OTAL	OT Africa Line
<a href="http://www.choco-club.com">www.choco-club.com</a>		Choco Club, France
<a href="http://www.completechocolate.com">www.completechocolate.com</a>		Complete Chocolate Website
<a href="http://www.new-agri.co.uk">www.new-agri.co.uk</a>		New Agriculturist (magazine)
<a href="http://www.dmgworldmedia.com">www.dmgworldmedia.com</a>		Coffee & Cocoa International (magazine)
<a href="http://www.newafrica.com">www.newafrica.com</a>		Newafrica (leading information source on Africa)
<a href="http://www.britannica.com">www.britannica.com</a>		Encyclopaedia Britannica

***The website of the International Cocoa Organization: [www.icco.org](http://www.icco.org)***

*The ICCO website has a comprehensive Question & Answer section with over 500 entries on around 200 questions and answers. The menu of the Q&A section has the following entries:*

<i>Biotechnology</i>	<i>By-products</i>	<i>Caffeine</i>
<i>Chemistry of cocoa</i>	<i>Chocolate</i>	<i>Cocoa beans</i>
<i>Cocoa butter</i>	<i>Cocoa mass</i>	<i>Cocoa pods</i>
<i>Cocoa powder</i>	<i>Cocoa processing</i>	<i>Cocoa trees</i>
<i>Colour development</i>	<i>Companies</i>	<i>Consumption</i>
<i>Costs</i>	<i>Countries</i>	<i>Distribution</i>
<i>Environment</i>	<i>EU Directive</i>	<i>Fair trade</i>
<i>Farming</i>	<i>Fermentation</i>	<i>Fine or flavour</i>
<i>Flavour development</i>	<i>Harvesting</i>	<i>History</i>
<i>Machinery</i>	<i>Market</i>	<i>Marketing</i>
<i>Nutrition and health</i>	<i>Organic cocoa</i>	<i>Origin of cocoa</i>
<i>Pests and diseases</i>	<i>Post-harvest processing</i>	<i>Prices</i>
<i>Production of cocoa</i>	<i>Quality</i>	<i>Risk management</i>
<i>Shipping</i>	<i>Statistics</i>	<i>Stocks</i>
<i>Storage</i>	<i>Trading</i>	<i>Uses of cocoa</i>

*The following are also available at the website:*

- Daily prices of cocoa beans*
- The full text of the International Cocoa Agreement in four languages*
- Links to almost 300 other cocoa- and chocolate-related websites*
- Statistics*

*This website has been useful as a source of information for this guide.*

***The website of the International Trade Centre: [www.intracen.org](http://www.intracen.org)***

*The ITC website provides useful information on various trade-related topics, including some on cocoa:*

- Trade statistics by product and country*
- Lists of trade contacts*
- Trade financing services*
- Legal aspects of foreign trade*
- Tariffs and trade regulations*

## Appendix VI

# Statistics

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### Figures and tables

#### World supply, stocks and grindings

- Table A Production of cocoa beans, by quantity and by country/area, 1995/96 – 1999/00
- Figure A Main cocoa-producing countries, 1999/00
- Table B Grindings of cocoa beans, by quantity and by country/area, 1995/96 – 1999/00
- Figure B Main cocoa-grinding countries/areas, 1999/00
- Figure C World cocoa bean production, grindings and supply-demand balance, 1970/71 – 1999/00

#### Cocoa bean prices

- Figure D ICCO daily price and stocks-to-grindings ratio, 1970/71 – 1999/00
- Figure E Monthly averages, highs and lows of ICCO daily price, January 1996 – September 2000

#### Export earnings from cocoa

- Table 3 Cocoa-derived exports from selected countries, by value, over five-year periods from 1971 to 1997
- Table 4 Cocoa-derived export earnings, percentage share in total exports by country, 1971-1997

#### Exports and imports of cocoa products

- Table 8 Exports of cocoa products by country/area and by quantity, 1998/99
- Table 9 Imports of cocoa products by country/area and by quantity, 1998/99

#### Consumption

- Figure F Consumption of cocoa, by country/area, 1998/99
- Figure G Per capita consumption of cocoa, by country/area, 1998/99

All figures for the cocoa year 1999/00 are estimates.

Given the nature of the commodity (e.g. it shrinks in transit) and the difficulties in collecting information on certain aspects (such as exports and grindings), a certain margin of error should be taken into account in the evaluation of the statistical data.

## Conversion factors and cocoa bean equivalent

The commonly used basis for measuring and reporting cocoa consumption is the total tonnage of cocoa beans ground worldwide every year. As the major grinding countries re-export much of their production of cocoa liquor, butter, cake and powder, adjustments must be made in their statistical data in order to get a truer picture of final cocoa bean consumption in each country. This involves the use of physical conversion factors to convert weights of cocoa products into cocoa bean equivalent weights. In making the conversions, some rule-of-thumb assumptions are used to calculate average yields obtained in cocoa-processing operations:

- When 100 tons of cocoa beans are ground, they will produce, on average, 80 tons (80% by weight) of cocoa liquor or paste.
- When 100 tons of cocoa liquor are pressed, they separate into 47 tons (47%) of cocoa butter and 53 tons (53%) of cocoa cake. The cake can be further processed into (almost) the same weight of cocoa powder.

The actual yields obtained will vary according to both the cocoa beans and the process used. The above yields are assumed averages.

Combining the above assumptions implies that grinding and pressing 100 tons of cocoa beans will yield 37.6 tons (47% of 80 tons) of cocoa butter and 42.4 tons (53% of 80 tons) of cocoa cake or powder. These yields can then be expressed the other way round by calculating the weight of cocoa beans needed to produce a given weight of products:

- It requires 1.25 tons (100/80) of beans to make 1 ton of cocoa liquor (or paste).
- It requires 2.66 tons (100/37.6) of beans to make 1 ton of cocoa butter.
- It requires 2.36 tons (100/42.4) of beans to make 1 ton of cocoa cake (or powder).

Conversion factors: 1.25,  
1.33, 1.18

So, multiplying the weight of cocoa products by these factors will show the weight of the beans used to make them. But account needs to be taken of the fact that cocoa butter and cocoa cake or powder are produced simultaneously from the same liquor in the pressing process. As they constitute a joint output, to use the above factors as they stand would be to double-count the weight of the beans from which they came. This is dealt with by halving the factors applied to cocoa butter and cocoa cake or powder, resulting in the following commonly used conversion factors:

- 1.25 for cocoa liquor (or paste);
- 1.33 for cocoa butter (i.e. 2.66/2);
- 1.18 for cocoa cake or powder (i.e. 2.36/2).

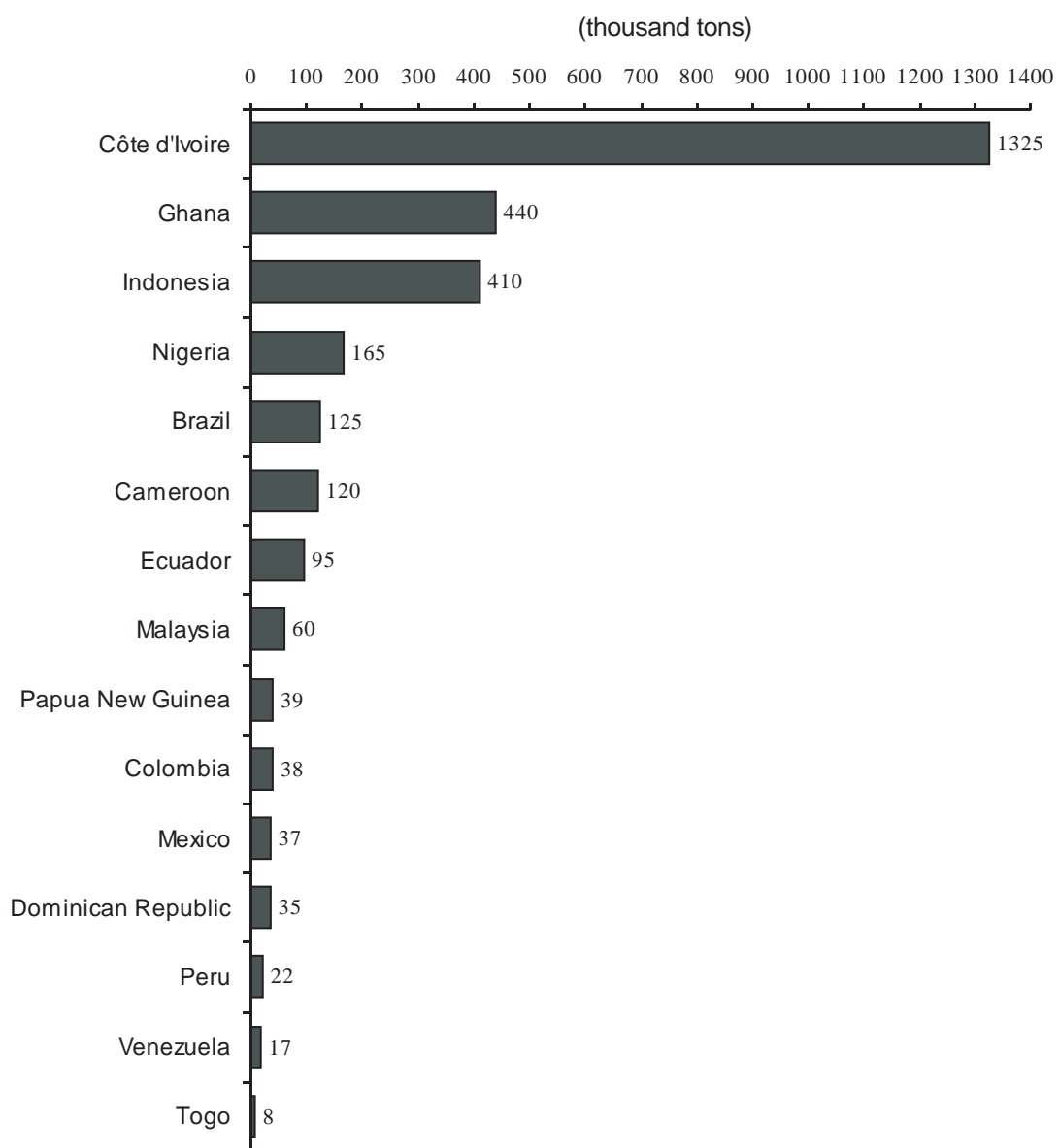
(The above are also the ICCO official conversion factors used in the calculation of the consumption statistics shown in this appendix.)

Estimates of the amount of cocoa consumed by the public (final consumption) also need to take account of the cocoa content of chocolate products, which are either exported or imported. ICCO uses a factor of 0.4 in most cases to represent the average cocoa content of finished chocolate products in bean equivalent terms.



<b>Table A Production of cocoa beans, by quantity and by country/area, 1995/96-1999/00 (thousand tons)</b>					
<b>Country</b>	<b>1995/96</b>	<b>1996/97</b>	<b>1997/98</b>	<b>1998/99</b>	<b>1999/2000</b>
<b>AFRICA</b>					
Benin	-	-	0.2	0.1	0.1
Cameroon	135.0	125.6	114.7	124.0	120.0
Congo	0.6	0.9	1.1	1.0	0.9
Congo, Dem. Rep. of	3.1	2.5	2.6	2.4	2.1
Côte d'Ivoire	1 200.0	1 108.0	1 113.0	1 163.0	1 325.0
Equatorial Guinea	4.5	3.6	5.2	4.2	4.0
Gabon	1.0	0.7	0.5	0.7	0.6
Ghana	403.9	322.5	409.4	397.7	440.0
Guinea	4.5	6.3	9.0	5.1	5.5
Liberia	0.7	0.6	2.0	2.0	1.0
Madagascar	2.0	2.0	3.2	2.8	2.0
Nigeria	158.0	160.0	165.0	198.0	165.0
Sao Tome and Principe	3.4	2.8	3.5	4.6	4.0
Sierra Leone	3.2	4.1	2.1	2.7	2.7
Tanzania, UR	2.5	3.2	3.2	2.4	2.5
Togo	5.1	9.0	5.6	7.2	8.0
Uganda	1.0	1.3	0.7	2.0	2.0
<b>Total Africa</b>	<b>1 928.5</b>	<b>1 753.1</b>	<b>1 841.0</b>	<b>1 919.9</b>	<b>2 085.4</b>
<b>AMERICA</b>					
Belize	0.1	0.1	0.1	0.1	0.1
Bolivia	2.2	2.2	2.2	2.3	2.4
Brazil	230.7	185.0	170.0	137.5	125.0
Colombia	50.0	38.3	38.2	37.6	37.5
Costa Rica	4.0	4.5	4.5	4.5	4.5
Cuba	2.2	2.2	2.2	2.2	2.2
Dominica	0.1	0.2	0.2	0.1	0.1
Dominican Republic	55.0	52.4	69.7	25.9	35.0
Ecuador	103.0	103.0	30.0	75.0	95.0
Grenada	0.9	1.3	1.2	1.1	1.2
Guatemala	0.8	0.8	0.8	0.8	0.8
Haiti	3.3	4.0	3.8	2.0	2.5
Honduras	2.1	2.7	1.7	2.7	2.0
Jamaica	1.4	1.7	1.7	1.5	1.0
Mexico	42.0	45.0	35.0	35.0	36.8
Nicaragua	0.2	0.2	0.2	0.2	0.2
Panama	1.0	1.0	1.0	1.0	1.0
Peru	15.0	19.5	22.1	21.0	22.0
Trinidad and Tobago	1.8	1.8	1.4	1.4	1.8
Venezuela	16.0	18.5	16.7	16.5	16.5
Other Americas	0.1	0.1	0.1	0.1	0.1
<b>Total Americas</b>	<b>531.9</b>	<b>484.5</b>	<b>402.8</b>	<b>368.5</b>	<b>387.7</b>
<b>ASIA AND OCEANIA</b>					
Fiji	0.1	0.1	0.1	0.1	0.1
India	6.0	6.0	6.0	6.0	6.0
Indonesia	285.0	325.0	331.0	390.0	410.0
Malaysia	115.0	100.0	65.0	75.0	60.0
Papua New Guinea	35.5	28.6	29.2	35.1	39.0
Philippines	5.0	7.8	7.4	7.6	7.6
Solomon Islands	2.5	3.4	4.0	2.7	4.0
Sri Lanka	1.6	1.6	1.6	1.6	1.6
Thailand	0.4	0.4	0.4	0.4	0.4
Vanuatu	1.8	1.0	1.2	1.4	1.4
Other Asia and Oceania	0.1	0.1	0.1	0.1	0.1
<b>Total Asia and Oceania</b>	<b>453.0</b>	<b>474.0</b>	<b>446.0</b>	<b>520.0</b>	<b>530.2</b>
<b>WORLD TOTAL</b>	<b>2 913.3</b>	<b>2 711.6</b>	<b>2 689.8</b>	<b>2 808.4</b>	<b>3 003.3</b>

Source: ICCO.

**Figure A** Main cocoa-producing countries, 1999/00

Source: ICCO.

<b>Table B Grindings of cocoa beans, by quantity and by country/area, 1995/96-1999/00</b> (in thousands of tons)					
Country	1995/96	1996/97	1997/98	1998/99	1999/2000 Estimate
<b>EUROPE</b>					
<b>European Community:</b>					
Austria	15.0	16.3	18.8	19.5	21.0
Belgium/Luxembourg	70.0	53.3	53.0	53.0	55.0
Denmark	3.7	6.4	10.8	11.0	10.8
Finland	0.1	0.1	0.1	0.1	0.1
France	113.1	105.6	103.1	123.5	138.0
Germany	266.2	240.3	226.2	196.9	214.9
Greece	1.5	1.8	3.2	2.0	4.0
Ireland	9.2	11.9	11.0	8.9	8.5
Italy	71.0	70.5	72.3	73.1	70.0
Netherlands	384.8	401.6	424.7	414.8	436.0
Portugal	0.1	0.1	0.1	-	0.1
Spain	49.5	47.6	58.0	53.5	55.0
Sweden	-	-	-	-	-
United Kingdom	190.6	172.1	173.7	166.6	168.0
Bulgaria	4.0	4.0	4.0	4.0	4.0
Czech Republic	14.0	14.7	11.5	9.9	11.5
Hungary	4.5	3.6	3.5	1.2	2.0
Norway	0.1	-	-	-	-
Poland	35.0	35.0	35.0	35.0	35.0
Romania	1.3	1.4	0.9	0.6	0.7
Slovak Republic	5.5	6.5	5.8	6.4	7.0
Switzerland	24.5	25.0	20.0	22.0	22.0
<b>Ex-USSR:</b>					
Belarus	2.0	2.2	2.4	2.0	2.2
Estonia	2.3	6.0	6.0	6.0	6.0
Georgia	0.1	0.1	0.1	0.1	0.1
Kazakhstan	1.1	1.1	0.7	0.8	1.4
Latvia	2.0	2.0	1.9	1.0	1.0
Lithuania	3.0	3.0	3.2	2.2	2.4
Republic of Moldova	0.6	0.6	0.4	0.4	0.4
Russian Federation	75.0	70.0	52.0	46.6	50.0
Ukraine	4.0	8.0	9.6	9.0	10.0
Croatia	3.7	3.6	3.6	2.0	2.4
Macedonia (FYR)	0.4	0.4	0.4	0.4	0.4
Slovenia	0.3	0.3	0.3	0.2	-
Yugoslavia	2.1	2.7	2.5	2.5	2.5
<b>Total Europe</b>	<b>1 360.2</b>	<b>1 317.8</b>	<b>1 318.8</b>	<b>1 275.2</b>	<b>1 342.4</b>
<b>AFRICA</b>					
Algeria	-	0.2	-	1.3	1.0
Cameroon	24.6	26.6	29.0	30.8	31.0
Côte d'Ivoire	140.0	149.5	193.4	225.0	240.0
Egypt	0.5	0.5	0.5	2.0	2.0
Ghana	59.7	67.5	67.0	65.0	70.0
Nigeria	15.0	17.0	17.0	20.0	22.0
South Africa	6.5	7.0	5.9	5.5	6.0
Other Africa	0.8	1.1	1.0	1.6	1.0
<b>Total Africa</b>	<b>247.1</b>	<b>269.4</b>	<b>313.8</b>	<b>351.2</b>	<b>373.0</b>
<b>AMERICA</b>					
Argentina	3.0	3.0	3.0	3.0	3.0
Bolivia	2.2	2.2	2.2	2.2	2.3
Brazil	205.3	180.0	187.8	192.4	201.4
Canada	38.5	34.4	53.0	41.6	53.0

<b>Table B (cont'd)</b>					
<b>Country</b>	<b>1995/96</b>	<b>1996/97</b>	<b>1997/98</b>	<b>1998/99</b>	<b>1999/2000 Estimate</b>
Colombia	<i>50.0</i>	<i>38.2</i>	<i>37.6</i>	<i>38.1</i>	<i>37.2</i>
Costa Rica	<i>4.5</i>	<i>4.5</i>	<i>4.5</i>	<i>5.0</i>	<i>4.5</i>
Cuba	<i>2.2</i>	<i>2.2</i>	<i>2.2</i>	<i>2.3</i>	<i>2.0</i>
Dominican Republic	<i>5.5</i>	<i>5.5</i>	<i>5.5</i>	<i>1.8</i>	<i>3.3</i>
Ecuador	<i>40.0</i>	<i>45.0</i>	<i>27.0</i>	<i>26.0</i>	<i>40.0</i>
Guatemala	<i>0.6</i>	<i>0.6</i>	<i>0.6</i>	<i>0.8</i>	<i>0.6</i>
Honduras	<i>0.1</i>	<i>1.3</i>	<i>1.0</i>	<i>1.2</i>	<i>1.0</i>
Jamaica	<i>0.4</i>	<i>0.4</i>	<i>0.4</i>	<i>0.4</i>	<i>0.4</i>
Mexico	<i>38.0</i>	<i>37.5</i>	<i>24.0</i>	<i>32.0</i>	<i>32.0</i>
Panama	<i>1.4</i>	<i>1.4</i>	<i>1.4</i>	<i>1.2</i>	<i>1.4</i>
Peru	<i>15.0</i>	<i>15.5</i>	<i>16.5</i>	<i>12.5</i>	<i>12.5</i>
Trinidad and Tobago	<i>0.2</i>	<i>0.2</i>	<i>0.3</i>	<i>0.3</i>	<i>0.3</i>
<b>United States</b>	<b>341.8</b>	<b>394.0</b>	<b>399.1</b>	<b>405.8</b>	<b>438.6</b>
Uruguay	<i>0.2</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>
Venezuela	<i>7.3</i>	<i>6.0</i>	<i>6.0</i>	<i>5.0</i>	<i>5.0</i>
Other Americas	<i>0.4</i>	<i>0.4</i>	<i>0.4</i>	<i>0.4</i>	<i>0.4</i>
<b>Total Americas</b>	<b>756.6</b>	<b>772.4</b>	<b>772.6</b>	<b>772.1</b>	<b>839.0</b>
<b>ASIA AND OCEANIA</b>					
China	<i>33.0</i>	<i>35.0</i>	<i>30.0</i>	<i>25.0</i>	<i>27.0</i>
India	<i>7.0</i>	<i>7.0</i>	<i>7.8</i>	<i>7.8</i>	<i>8.0</i>
Indonesia	<i>62.0</i>	<i>70.0</i>	<i>76.0</i>	<i>75.0</i>	<i>85.0</i>
Israel	<i>1.8</i>	<i>1.8</i>	<i>1.7</i>	<i>1.8</i>	<i>1.8</i>
Japan	<b>49.7</b>	<b>43.0</b>	<b>44.6</b>	<b>46.9</b>	<b>45.5</b>
Korea, Republic of	<i>1.9</i>	<i>2.3</i>	<i>1.3</i>	<i>2.5</i>	<i>1.6</i>
Malaysia	<i>95.0</i>	<i>95.0</i>	<i>100.0</i>	<i>105.0</i>	<i>115.0</i>
New Zealand	<i>0.2</i>	<i>0.2</i>	<i>0.2</i>	<i>0.2</i>	<i>0.2</i>
Philippines	<i>15.0</i>	<i>15.0</i>	<i>13.0</i>	<i>13.0</i>	<i>13.0</i>
Singapore	<i>55.0</i>	<i>57.0</i>	<i>57.0</i>	<i>68.0</i>	<i>68.0</i>
Sri Lanka	<i>1.6</i>	<i>1.5</i>	<i>1.5</i>	<i>1.5</i>	<i>1.5</i>
Thailand	<i>10.3</i>	<i>11.5</i>	<i>17.0</i>	<i>10.8</i>	<i>11.0</i>
Turkey	<i>16.3</i>	<i>16.0</i>	<i>16.0</i>	<i>15.0</i>	<i>15.0</i>
Other Asia and Oceania	<i>0.1</i>	<i>0.1</i>	<i>1.3</i>	<i>0.7</i>	<i>1.0</i>
<b>Total Asia and Oceania</b>	<b>348.9</b>	<b>355.4</b>	<b>367.4</b>	<b>373.2</b>	<b>393.6</b>
<b>WORLD TOTAL</b>	<b>2712.9</b>	<b>2715.0</b>	<b>2772.6</b>	<b>2771.7</b>	<b>2948.0</b>
Origin grindings	803.6	801.9	840.0	876.5	941.6
Share of origin grindings	29.6%	29.5%	30.3%	31.6%	31.9%

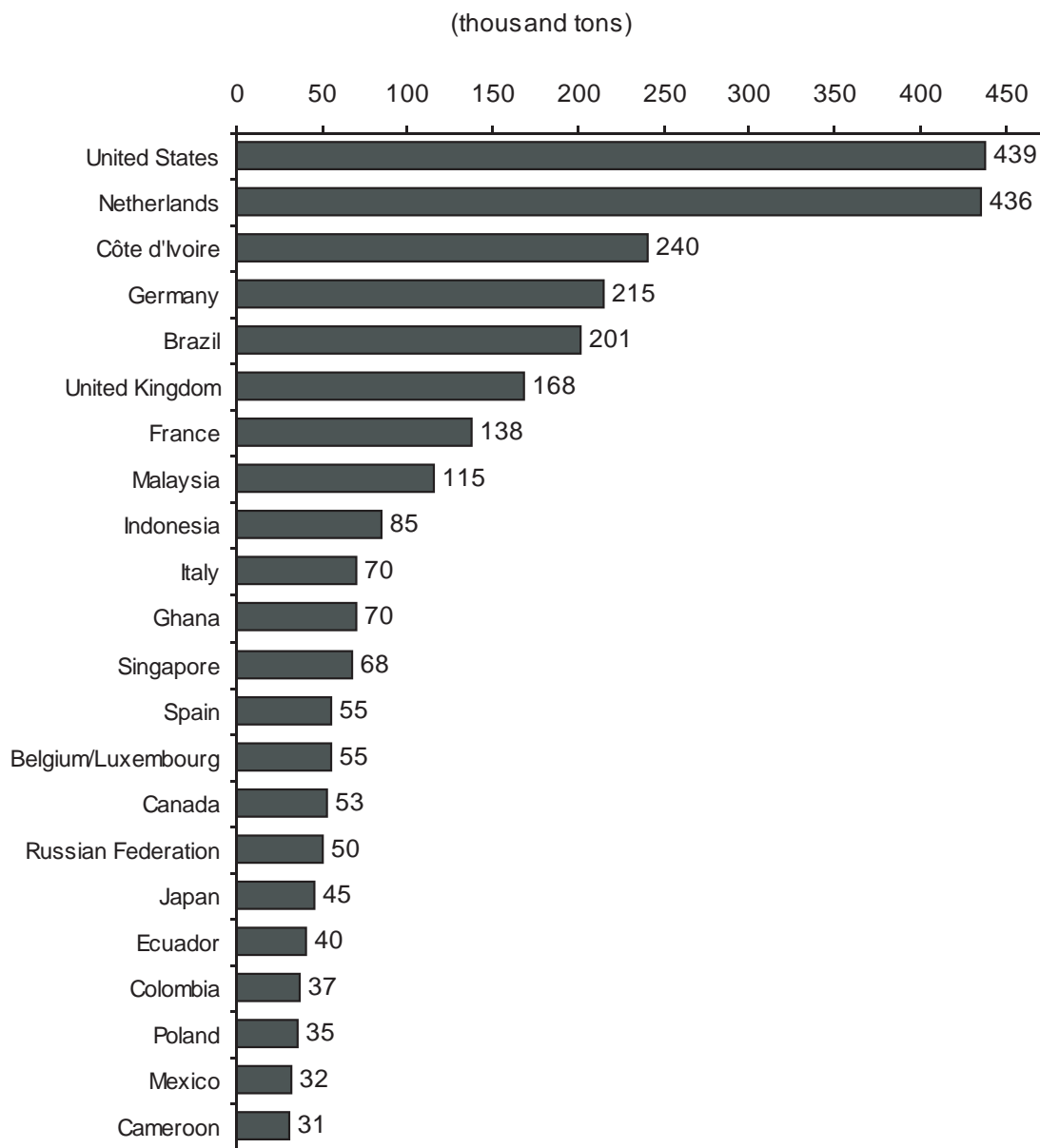
**Source:** ICCO.

**Notes:**

Data for individual countries shown in bold have been provided by official or trade sources.

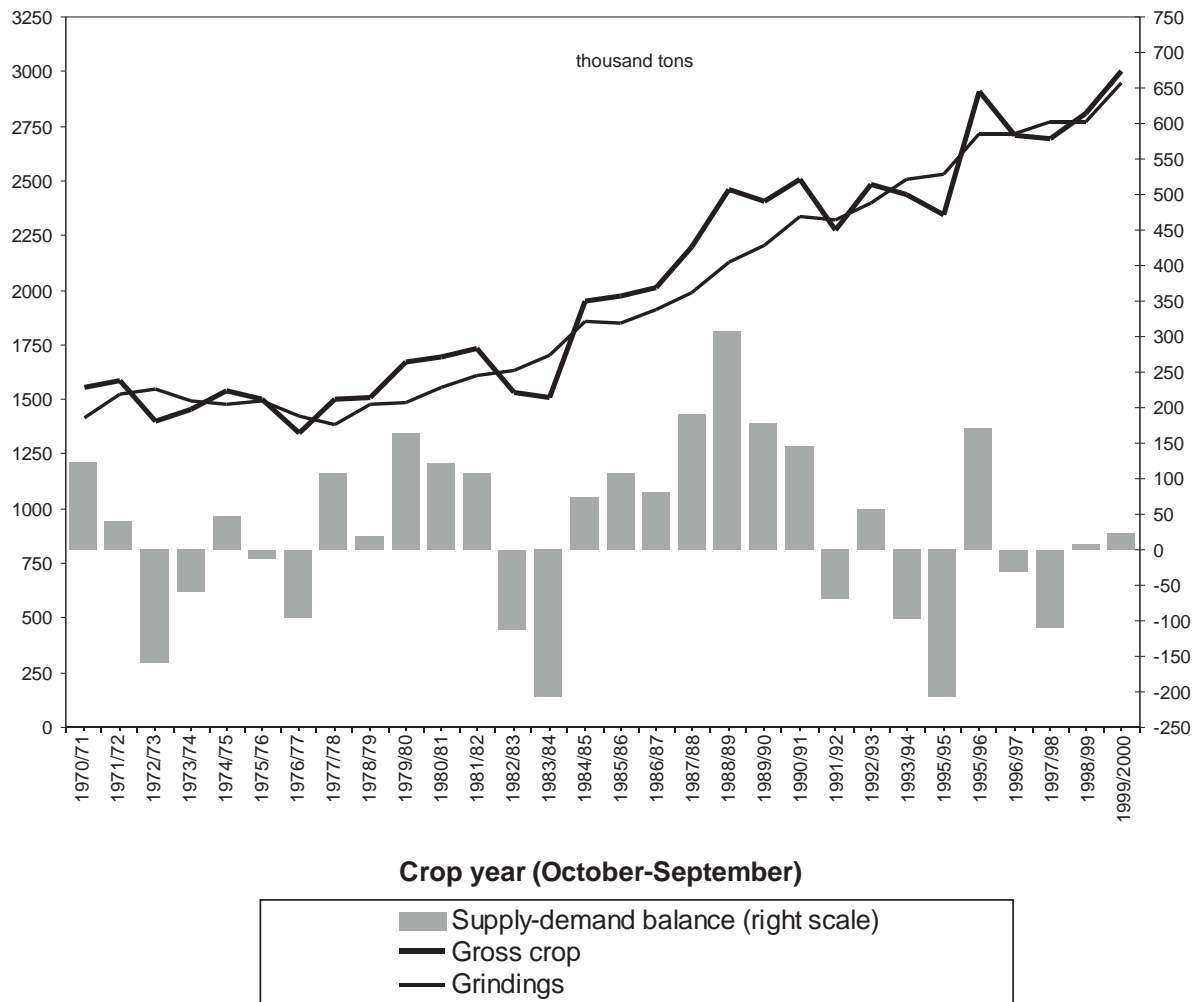
Data for individual countries shown in italics are ICCO secretariat estimates based on trade in cocoa.

Totals may not add up owing to rounding.

**Figure B** Main cocoa-grinding countries/areas, 1999/00

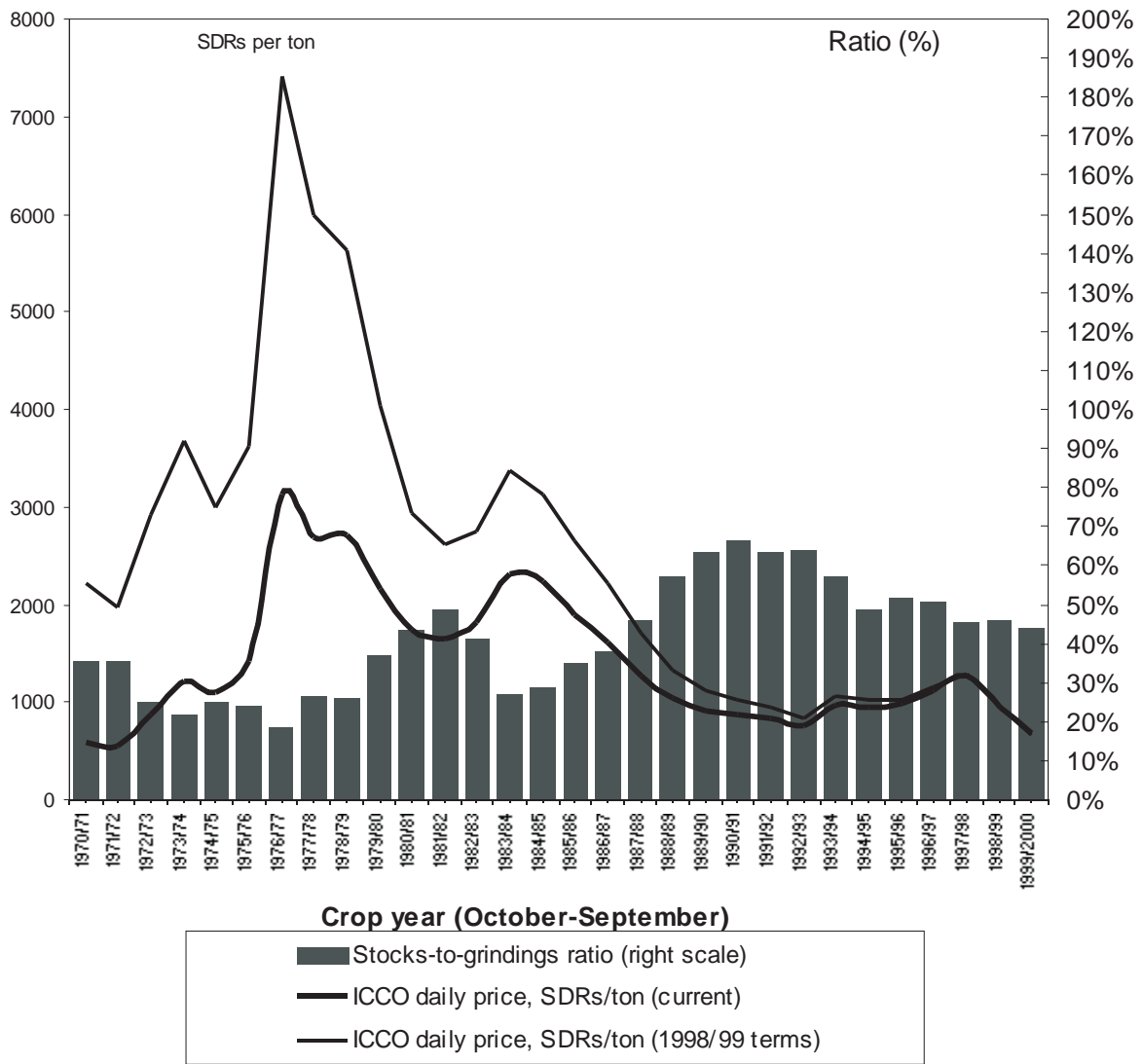
Source: ICCO.

**Figure C World cocoa bean production, grindings and supply-demand balance, 1970/71-1999/00**

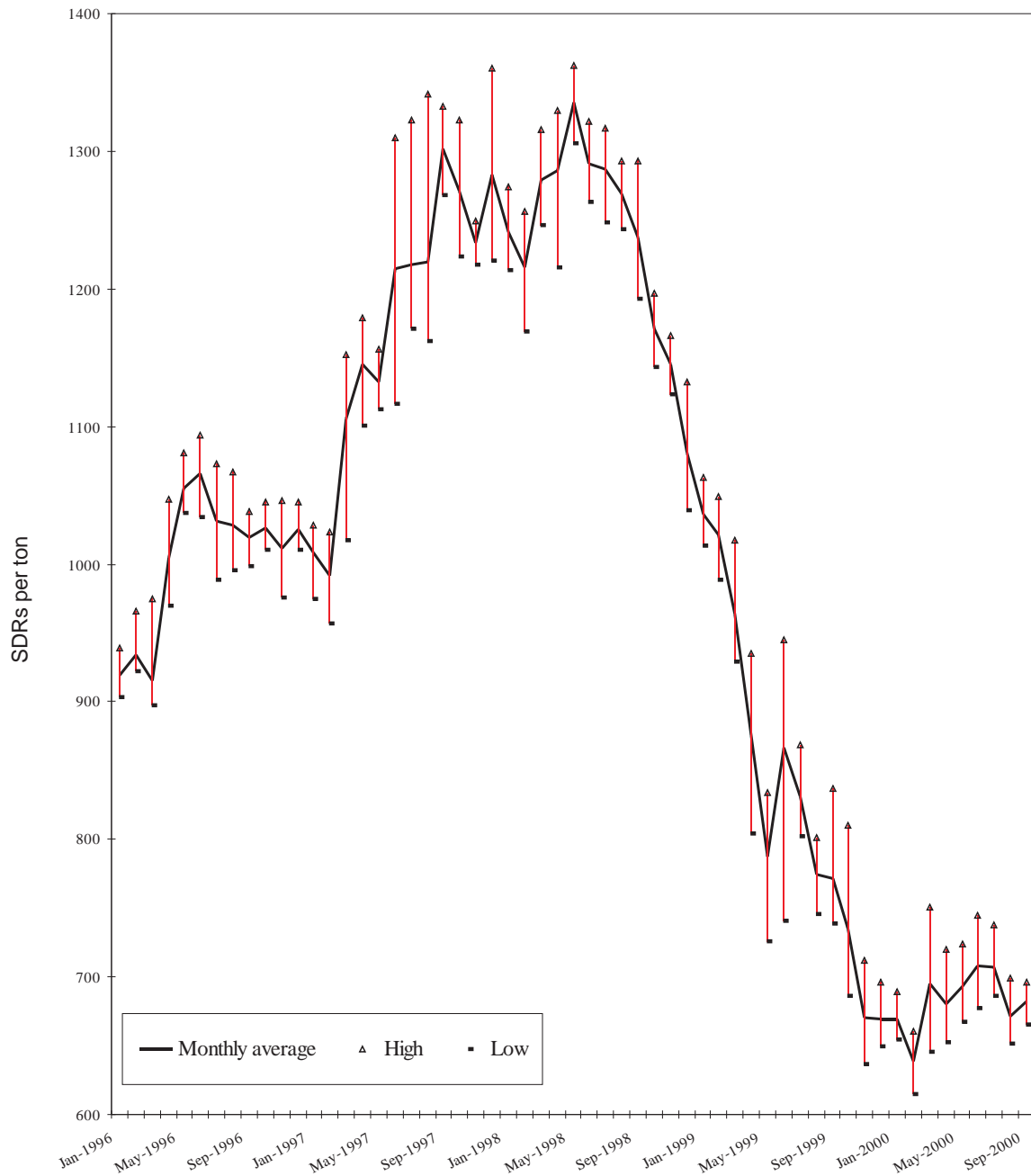


Source: ICCO.

**Figure D ICCO daily price and stocks-to-grindings ratio, 1970/71-1999/00**



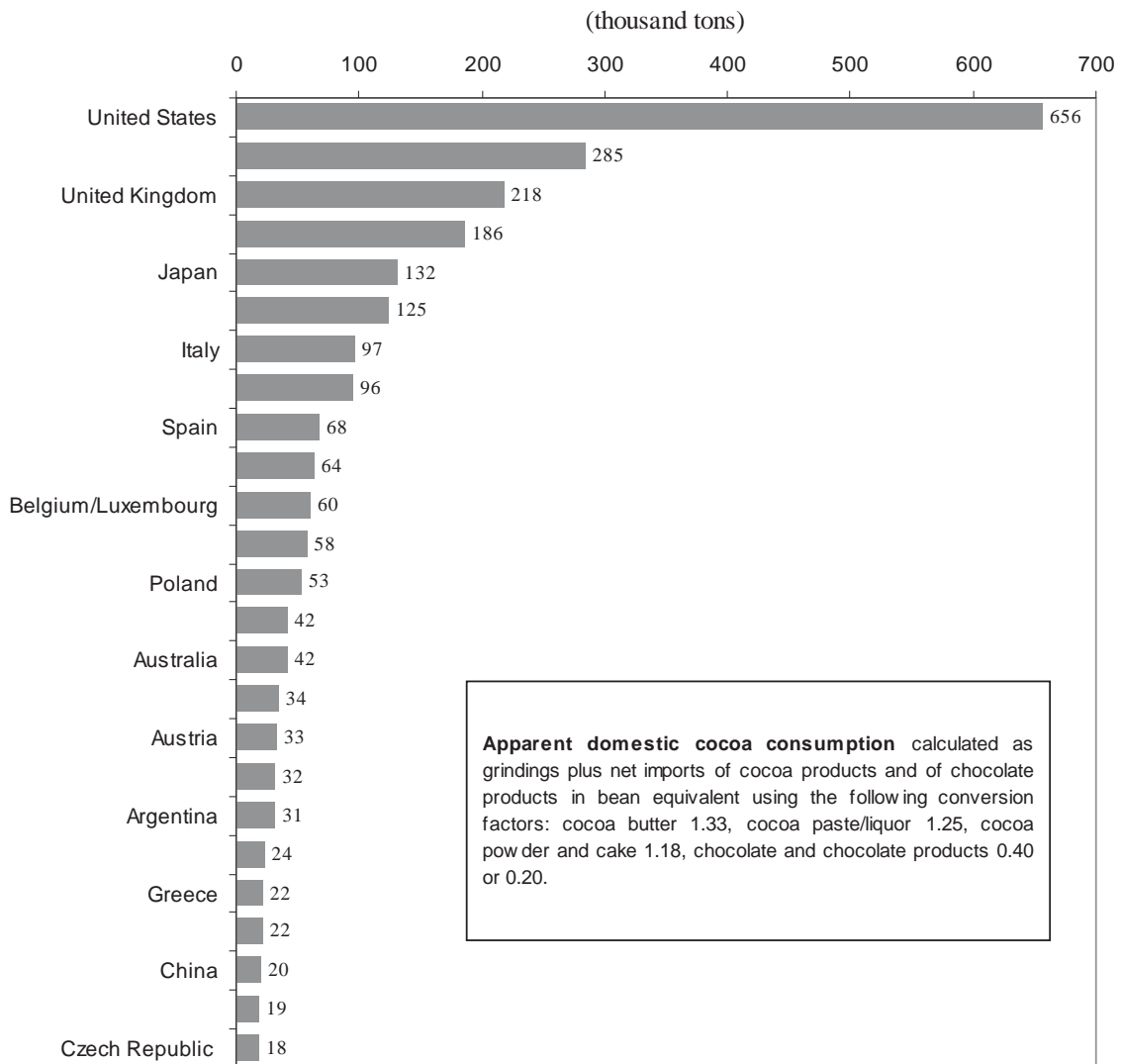
Source: ICCO.

**Figure E Monthly averages, highs and lows of ICCO daily price, January 1996 - September 2000**

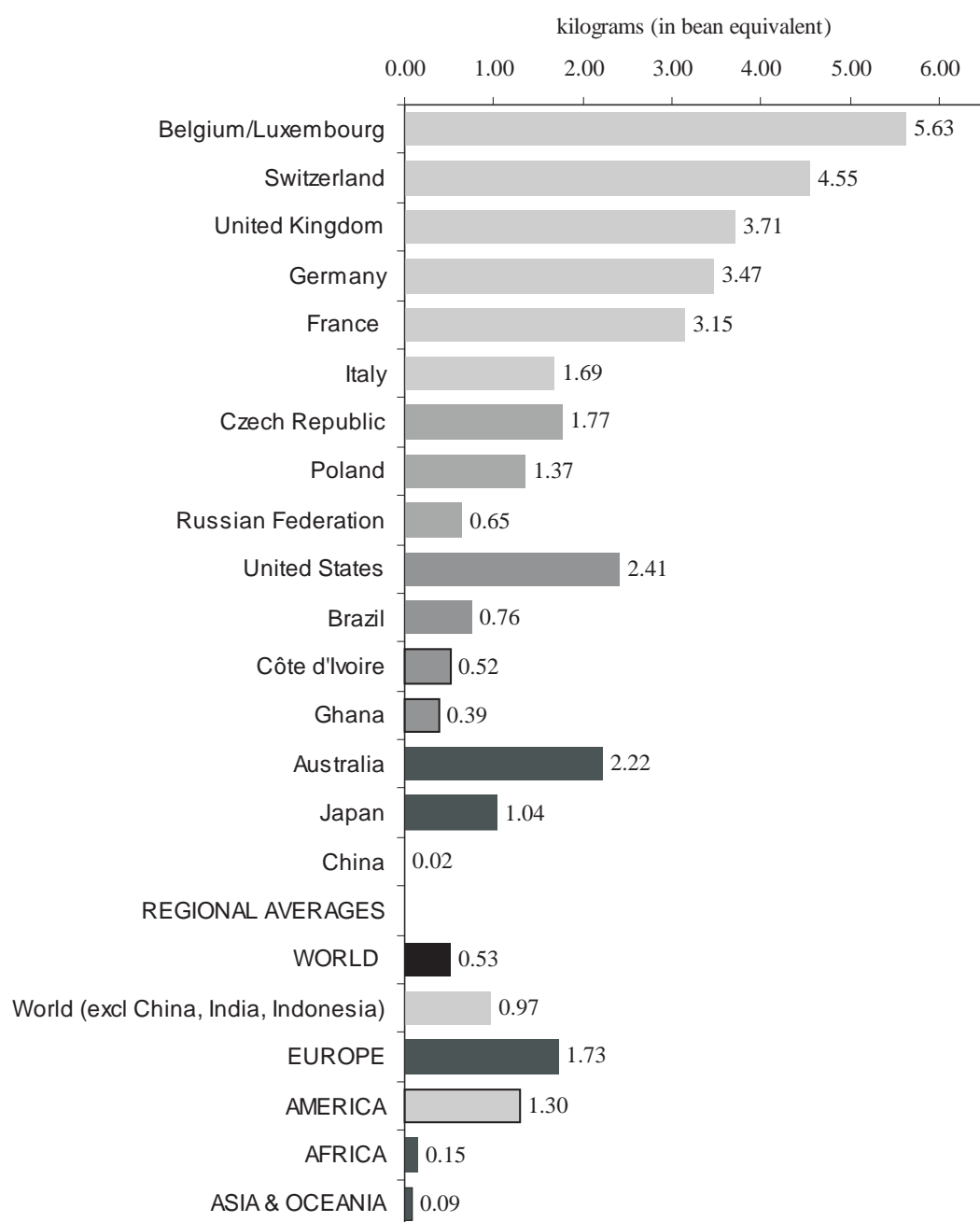
Source: ICCO.



**Figure F Consumption of cocoa, by country/area, 1998/99**



Source: ICCO.

**Figure G Per capita consumption of cocoa, by country/area, 1998/99**

Source: ICCO.



# Glossary of terms used in the international cocoa trade

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AAs	See <b>Against actuals</b> .
ACP	African, Caribbean and Pacific States. Around 70 countries which have preferential agreements with the European Union on duties, project financing and other matters.
Actuals	The physical commodity itself. Also referred to as <i>physicals</i> or <i>cash commodity</i> .
AFCC	See <b>FCC</b> .
Affreightment	A contract hiring a ship to carry goods. Also known as <i>charter party</i> or <i>fixing</i> .
Against actuals	The exchange of a cash commodity against futures contracts. Also known as <i>Aas</i> or <i>EFPs</i> (exchange for physicals).
Arbitrage	The usually simultaneous purchase or sale of a cash commodity or futures contract in one market and the sale or purchase of the same contract in a market in a different geographical area, to profit from the difference in prices in the two markets.
Arbitration	A method of settling disputes between trading partners according to rules set by a cocoa association or other private body and outside the normal judicial path.
At the market	An order to buy or sell at the best price at the moment when the order is received.
Backwardation	The situation when prices for nearby futures positions are at a premium over the more distant positions. Also known as a <i>premium market</i> .
Back to back	Trading in which sales simultaneously match purchases on equal terms, making hedging unnecessary.
Bare boat charter	A charter party in which the charterer provides the crew. Also known as <i>demise charter</i> .
Barely steady	A market characterized by buying support which, although present, is weak and tending to fade.
Basic or ordinary cocoa	The most commonly grown and used cocoa, representing some 90% of the world crop.
Basis	The difference between the price of a cash commodity and its corresponding futures position. Also known as <i>differential</i> .
Basis price	The price agreed between seller and buyer of an option at which the option can be exercised; also known as the <i>striking price</i> . The basis price is normally the current market price of the commodity for the delivery month at the time the option is sold.
Basis trading	The purchase or sale of a cash commodity with an agreement to establish the billing price later by applying an agreed difference against a futures contract position.
Batching oil	The oil used in the manufacture of jute cloth to make jute fibres more flexible for spinning.
BCCCA	Biscuit, Cake, Chocolate and Confectionery Alliance, United Kingdom.
Bean equivalent	Common unit used for measuring and reporting the total weight of cocoa consumed. See also <b>Conversion factors</b> .

Bear	One who believes prices will decline.
Bear market	A market in which prices are declining.
Bear position	Outstanding contracts of a trader who has sold cash or futures contracts without having previously purchased them, hoping that he/she can buy these contracts back later at a lower price, thus making a speculative profit.
Bid	The price which a buyer is willing to pay.
Bill of lading	A document that is a formal receipt of goods and a contract for their carry. An ocean bill of lading is a negotiable document which gives the consignee the right to transfer ownership of the cargo described in the document. Overland bills of lading are not normally title documents.
Bottom limit	Monetary limit on the risk that an underwriter will accept on one ship under an open policy.
Break	A sharp drop in the price of futures contracts.
Breaking bean	When the bean is broken open; the stage at which the colour of the cotyledon is described, e.g. light breaking or dark breaking.
Broker	A middleman who brings buyers and sellers together without actually taking title to the goods or documents and is paid a commission.
Bull	One who expects prices to rise.
Bull market	A market in which prices are rising.
Bunker surcharge	A premium over the published freight rates of common carriers imposed by them as a result of an increase in the cost of fuel experienced by the ship's operator.
Buyer's market	A market in which there is an abundance of a commodity and buyers are in a strong bargaining position.
B2B	Business to business. A term used to describe business and/or communications conducted between companies.
CAL	The Cocoa Association of London, Ltd.
Call	A period in which trading is conducted on an exchange at a particular time to establish the price for each futures month.
Call option	The right to purchase ( <i>go long</i> ) a particular futures contract from the seller on the futures exchange at an agreed price (the <i>basis price</i> ) at any time between the purchase and the expiry date of the option. A call option is bought in the expectation of prices rising. The opposite is a <i>put option</i> .
Cancelling date	A maritime term referring to the date agreed between the owner and the charterer as the date on which the vessel must be ready to load, at the latest. If the vessel misses its cancelling date, the charterer can choose to cancel the charter party.
CAOBISCO	Association of the Chocolate, Biscuit and Confectionery Industries of the European Union.
Carrying charge	The cost of storage, insurance and interest involved in holding physical cocoa for a given period of time.
Carry market	A market in which forward futures positions are trading at a premium over the nearby positions, which compensates for the cost of physically owning and holding cocoa. Also known as a <i>carrying market</i> .
CBE	Cocoa butter extender, or cocoa butter equivalent, generally based on tropical oils.
CBS	Cocoa butter substitute, generally based on lauric oils and incompatible with cocoa butter.
C&F	See <b>CFR</b> .
CEPLAC	Comissão Executiva do Plano da Lavoura Cacaueira (Cocoa Research Institute of Brazil).

CFC	Common Fund for Commodities.
CFR	Cost and freight. Contract terms under which the seller pays the transport costs of bringing goods to the named destination, but not insurance. Previously abbreviated to C&F.
CFTC	Commodity Futures Trading Commission, United States. An independent federal body reporting directly to the US Congress, CFTC is the regulatory authority that supervises trading in the exchanges and approves or rejects modifications in trading rules.
Chartering	The hiring of all or part of a ship for a particular voyage or period.
Charter party	A contract to hire a ship.
Chartist	A trader who charts prices in the form of graphs and uses the evolving patterns to forecast future trends. His/her opposite is the <i>fundamentalist</i> .
Chocolate	Cocoa liquor, either on its own (as per United States food standards of identity) or mixed with sugar, additional cocoa butter and milk (optional).
CIF	Cost, insurance, freight. Contract terms under which the seller pays the transport costs of bringing the goods to the named destination, as well as the insurance.
Clearing house	An independent body associated with a futures exchange through which futures contracts are offset or fulfilled and through which financial settlements are made. The clearing house is in essence the opposite party in the futures purchase or sales contract.
CMAA	Cocoa Merchants Association of America, Inc., with headquarters in New York City. Sometimes referred to as <i>CMA</i> , especially in connection with standard contracts.
Cocoa butter	The fat obtained by pressing cocoa liquor.
Cocoa cake	The residual product after cocoa liquor has been pressed and the butter extracted.
Cocoa liquor	The product obtained from cocoa beans after they have been roasted, shelled and ground. It is solid at room temperature. Also known as <i>cocoa mass</i> , <i>cocoa paste</i> , <i>unsweetened dark chocolate</i> or <i>baking chocolate</i> .
Cocoa powder	Ground cocoa cake.
Cocoa year	The standard twelve-month period adopted by ICCO and other authorities worldwide for collecting and reporting on cocoa statistics; starts 1 October and ends 30 September. (The exception is Brazil, where the year is from 1 May to 30 April. However, separate records are kept for each half-year, facilitating conversion to the international standard.)
CODEX	Codex Alimentarius Commission, an international body that establishes food standards under the auspices of the World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO). Established in 1962.
COGSA	Carriage of Goods by Sea Act, United States. Rules applying to the carriage of goods on ships destined for the United States. They supersede the Hague, Visby and Hamburg Rules.
Conching	Producing chocolate paste by mixing cocoa butter and crumb. Crumb is a mix of cocoa liquor, sugar and milk powder (for milk chocolate). The process refines the texture and reduces acidity and bitterness.
Commission house	A company that buys and sells futures contracts for the account of its customers and is paid a commission for doing so. Also known as a <i>futures commission merchant</i> under CFTC terms.

Constructive total loss	An insurance term used when the cost of repairing, retrieving and forwarding the goods exceeds their insured value.
Contango	Term used mainly in Europe, synonymous with <b>Carry market</b> .
Cotonou Agreement	Agreement between the European Union and the ACP States; successor to the Lomé Agreement.
Crop year	A period of 12 months from the traditional beginning of the harvest to the corresponding date in the following year.
Corner	A position where one operator owns or controls all, or almost all, of the market stocks of a commodity which is deliverable against an open delivery position held by third parties. Corners are illegal.
Conversion factors	Factors, or ratios, used to convert weights of finished and semi-finished cocoa products into bean equivalent weights.
Cotyledon	The interior (85% - 87%) of a cocoa bean, the rest being the shell. Usually called <i>nib</i> when the shell has been removed.
Cover	Buying back a short position.
CSCE	Coffee, Sugar and Cocoa Exchange, Inc., a part of the New York Board of Trade (NYBOT).
CSSV	Cocoa swollen shoot virus.
Currency adjustment factor	A premium over the published freight rates of common carriers. Imposed by the carriers because the cost of operating a ship has risen as a result of currency fluctuations between the quoted currency and the one used to operate the ship.
Day order	An order placed with a broker for execution during the trading day on which the order is given. If it cannot be executed during that day, the order is automatically cancelled.
Day trader	A trader who buys and sells during the day but closes out all positions before the trading day is over.
Dead weight capacity	A maritime term that describes the total weight of the cargo, bunkers, dunnage, provisions, water, stores and spare parts which a vessel can lift when fully loaded.
Declaration	The notification to the consignee that the cargo has been loaded and the ship has sailed.
Default	Failure of a party to a contract to live up to the contract's obligations for whatever reason.
Delivery	Tender and receipt of the physical commodity at the liquidation of a futures contract.
Delivery month	Month in which the futures contract matures and within which the delivery of the physical commodity can be made.
Delivery notice	Notification by the seller to the clearing house that he/she will make a delivery against a futures contract.
Delivery order	A negotiable document issued by the owner of the cargo after he/she has given the ocean bill of lading to the ship's operator, instructing a pier or warehouse operator to deliver the described cargo to the recipient shown on the order.
Delivery points	Locations designated by an exchange where physical deliveries against futures contracts can be made.
Delivery price	The price fixed by the clearing house at which deliveries of physical cocoa against futures contracts are invoiced and the price at which the futures contract is settled when deliveries are made.
Demise charter	See <b>Bare boat charter</b> .

Demurrage	A charge imposed by the owner or operator of a vessel, or the operator of a pier, to compensate him or her for the loss of revenue caused by the failure of the cargo owners either to deliver the goods for carry or to discharge them from the vessel, or to remove them from the pier within an agreed time.
Deposit	The initial outlay of money a client must pay to the broker to open a futures position, returnable when the position is closed. Also known as <i>original margin</i> or <i>earnest money</i> .
Despatch/dispatch money	The money paid by a ship's operator or owner to the cargo owner to reward the latter for having loaded or discharged the vessel in less than the agreed time.
Detention	Refusal by a government agency to allow entry of cocoa into the domestic market, pending the submission of proof that it meets government regulations.
Discretionary account	An account opened with a broker enabling the latter to use his or her own judgement in placing and executing orders for the client's account without prior consent.
Double option	An option that gives the buyer of the option the right either to buy from, or to sell to, the seller of the option at the basis price. It is a combined put and call. Only the put side or the call side of the option may be exercised, but not both. The cost of a double option is approximately twice that of a put or a call. It is used when the purchaser expects prices to move rapidly, but he or she is uncertain of the direction of this move.
Draught	The vertical distance between the water line and the keel of the vessel.
Dull market	A market that lacks activity and price movements.
Dunnage	Articles used to protect the cargo in the ship's hold or in a container or truck from damage caused by shifting cargo, chafing, sweating, etc. Usually made of wood or styrofoam.
Easy market	A market experiencing selling pressure and moderately declining prices.
ETA	Expected time of arrival of the vessel at a port.
ETS	Expected sailing time of the vessel from a port. Also known as <i>ETD</i> .
EU	European Union.
Ex dock contract	A contract for forward shipment, afloat or spot physical cocoa to be delivered to the buyer at the ship's discharge pier, with the seller assuming all costs of cargo insurance, freight and discharge until the buyer deposits the delivery order to the pier. Most often used in the sale of cocoa to processors by United States importers.
Ex store contract	A contract for physical cocoa under which the title to the goods passes to the buyer at the seller's warehouse at the moment the cocoa is removed by the buyer's transporter. Also known as <i>ex warehouse contract</i> .
Facultative cover	Insurance for a specific voyage and a specific cargo.
Fair trade	The concept of paying producers a fair price, allowing them a decent standard of living for growing their products under ecologically and socially acceptable conditions.
FCC	Fédération du commerce des cacaos (French cocoa trade association), with headquarters in Paris. Formerly known as the Association française du commerce des cacaos (AFCC).
FDA	United States Food and Drug Administration.
Fine or flavour cocoa	A specific origin and grade of cocoa beans of a unique flavour or colour, sought after by makers of high-quality, speciality chocolate.
FIO	Free in and out. The owner of the cargo pays for loading and discharging the vessel.



Firm market	A market with underlying purchase pressure and rising prices.
First notice day	The first day during a maturing contract period when holders of short futures can give notice of delivery intentions to the clearing house.
Five percent rule	EU regulation which stipulates the maximum level allowed for non-cocoa fats as a percentage of a chocolate product for it to be described and sold as chocolate.
Floor broker	A broker who personally buys and sells futures and options contracts in the trading ring of an exchange.
FOB	Free on board. The seller must pay for the goods and all costs of bringing them aboard ship. The buyer must make a vessel available within an agreed time.
<i>Force majeure</i>	Acts of God or the King's enemies. A <i>force majeure</i> clause in a contract relieves a party from a contractual obligation in the event of a situation occurring that is not under its control, such as an act of war, civil commotion, strikes and exceptionally severe weather. Crop failure, however, is not <i>force majeure</i> , unless the seller is a farmer selling his/her own goods and the contract is covered by United States law.
Forwardation	See <b>Contango</b> .
Freight forwarder	An agent who is knowledgeable in all aspects of transportation of goods and makes the arrangements for the cargo owners to move the cargo from any agreed point to its agreed destination. Freight forwarders normally also cover all aspects of customs clearance and other border formalities.
Fumigation	The controlled application of gasses to cocoa shipments in order to kill pests.
Fundamentalist	A trader who makes decisions based on analysis of macroeconomic considerations, such as crop prospects and consumption estimates. The opposite is the <i>technical trader</i> or <i>chartist</i> .
Futures	Contracts made on an exchange for the delivery of a commodity or security in a future month.
General average	Loss incurred by one party in preserving the common property of those involved in a maritime venture and compensated by the other members of the venture.
Good-till-cancelled (GTC)	An order that will remain open for execution at any time in the future until such time as the customer cancels it.
Grindings	Cocoa beans taken into processing by the industry. With a few exceptions, cocoa beans have to be ground into cocoa liquor before they can be processed further.
Gross charter	A maritime expression for a type of chartering under which the loading and discharging costs are covered by the ship's owner.
Gross in	A chartering agreement under which the ship's owner is responsible for the ship's loading.
Gross out	A chartering agreement under which the ship's owner is responsible for the ship's discharge.
GRT	Gross registered ton. Equal to 100 cubic feet and equivalent to 1 gross ton.
Hague Rules	Rules drafted in The Hague in 1921, detailing rules on ocean carry of goods.
Hague-Visby Rules	1968 update of Hague Rules.
Hamburg Rules	Redrafting of Hague-Visby Rules in 1978. Now generally followed in ocean carry, except when shipments are carried under COGSA rules.
Hedge	Replacing an undesirable risk (most often potential losses due to price movements) with a more acceptable one by taking an offsetting position in a different market.
ICC	International Chamber of Commerce.
ICCO	International Cocoa Organization.
ICREF	International Cocoa Research and Education Foundation.
IMF	International Monetary Fund.

Incoterms	Terms used in international trade to define buyers' and sellers' obligations under commonly used abbreviations such as FOB and CIF, as published by the International Chamber of Commerce.
Indemnity	A concept in the insurance market whereby the assured party is placed in the same financial condition as if the loss had not occurred.
In store contract	A sales contract under which cocoa is moved from where it is held in store by the seller to a nominated warehouse for the buyer's account. Used most often in the United Kingdom.
Insurable interest	Possible loss to a party in any venture which that party may seek to protect against by buying insurance.
IPGRI	International Plant Genetic Resources Institute.
ISO	International Organization for Standardization.
Jettison	Intentionally throw cargo overboard for the common interest of the remainder of the cargo and the ship. See <b>General average</b> .
Just in time	Often called <i>JIT</i> . A purchasing system under which manufacturers buy their own raw materials (sometimes at very short notice) only when needed to satisfy actual customer demand. The goal is to minimize inventory.
Kerb trading	Originally referred to trading at the kerb of the street outside the building where the exchange is located, often after the exchange's trading hours are over. Now also used for any trading outside the exchange.
Landed weight basis	The net weight of the sound and full bags landed, but applied to the whole parcel. Used as a basis for the determining the final amount to be paid by the buyer.
LASH	Lighter aboard ship.
Last trading day	The day on which trading ceases for a particular exchange delivery month.
Laydays	A maritime expression for the number of days allowed in a charter party for the loading and discharging of the cargo and the days in which the vessel should be ready to take cargo in the first loading port.
Leg lift	The undoing of a straddle position by the purchase or sale of only one side of the futures contract position, which leaves the trader either outright short or long.
Life of contract	The period between the first and the last trading days for any futures contract.
Limit	The maximum range of price fluctuations allowed for a commodity during a specific time period, usually a day.
Limit order	An order for a futures contract given to a broker to buy at no more or sell at no less than a specified price.
Liner conference	An agreement among steamship companies in a particular trade to fix common freight rates and specific services, such as schedules and ports of call.
Liquidation	The sale of a long position.
Locals	Traders on the trading floor of an exchange who buy and sell futures contracts for their own account.
Lomé Agreement	See <b>Cotonou Agreement</b> .
Long	To have purchased a commodity without any offsetting sale.
Long ton	2,240 lb of 453.6 g per lb (1,016.06 kg).

Lot	The minimum quantity of a commodity in a futures contract. For cocoa it is usually 10 metric tons. The term may also be used in place of <i>futures contract</i> .
Margin	The amount of money required by a broker to open and maintain a customer's position in the market and to cover potential or experienced losses. See also <b>Original margin</b> and <b>Variation margin</b> .
Margin call	A demand by the broker for additional funds from a customer to maintain the original margin after the position has suffered a loss. See <b>Variation margin</b> .
Maritime perils	An insurance term to describe the perils of the sea. It refers only to fortuitous accidents and does not include ordinary action of the wind and waves.
Market order	An order given to a broker to execute a trade at the first obtainable price.
Mate's receipt	A maritime term to describe the receipt signed by the chief deck officer for the cargo loaded on board ship during a given day. Upon completion of loading, the mate's receipts are exchanged for ocean bills of lading.
Mega-bulk	Shipping of cocoa beans loose in the hold of the ship.
Metric ton	1,000 kg or 2,204.6 lb – the generally accepted weight unit used in the international cocoa trade and the standard weight unit of all cocoa exchange contracts.
Montreal Protocol	An international convention to coordinate Member States' actions to protect the earth's ozone layer.
Net position	The difference between the total tonnage sold by a trader and the tonnage bought by him or her, either in physical cocoa or in futures, or both.
NGO	Non-governmental organization.
Nib	Cocoa beans, either roasted or unroasted, from which the shell has been removed. Nib is a stage in the manufacturing process and is not normally traded.
Non-demise charter	Charter under which shipowners provide the crew.
Notice day	A trading day during which sellers may give notice to the clearing house that they intend to make a delivery.
Off-flavour	A strange, extraneous type of aroma normally not present in a food. May arise through loss of impact compounds, a shift in aroma concentration, or a change in the composition of the individual aroma components. Designated as an aroma defect.
Offer	The price at which a trader is willing to sell (the opposite of bid).
Open interest	The total number of futures contracts outstanding in a trading month at any given day. Also called <i>open position</i> .
Open outcry	The bargaining taking place on an exchange floor. The rules require that all bids, offers and the closing of transactions must be made so that all the brokers in the trading ring can hear them.
Open policy	An insurance policy which covers the assured for whatever clauses are agreed, not just for one particular ship or voyage.
Option	For the payment of a premium, an option gives the purchaser the right to buy from, or sell to, the seller ( <i>grantor</i> ) of the option a futures contract within a given time period at an agreed price (the <i>basis price</i> ).
Ordinary or basic cocoa	See <b>Basic cocoa</b> .
Original margin	The deposit required by a broker to establish a position for a client.
Overbought market	A market which has risen in price very rapidly and is deemed to have advanced too far, thus making a decline very likely.
Oversold market	A market which has dropped in price very rapidly and is deemed to have declined too far, thus making an upward reaction very likely.
Paper losses or profits	Losses or profits calculated on open positions based on current market prices and which would be realized if these positions were closed.

Paper	Futures contracts. A trader is deemed hedged if he/she 'gets paper' against his/her position in the physical market.
Particular average	Partial loss of an insured property, which is not affecting any other interests (as opposed to <i>general average</i> ).
Position	The total tonnage of the contracts held by traders.
Premium	<ul style="list-style-type: none"><li>• The price obtained by the grantor of an option.</li><li>• The up-charge over the futures price for a specific quality of cocoa.</li><li>• The up-charge on the price of the more distant futures trading months over the nearby delivery months in a contango market.</li><li>• The up-charge on the price of the more nearby futures trading months over the further out delivery months in a backwardation market.</li><li>• The amount of money paid to an underwriter or his/her broker for an insurance policy.</li></ul>
Price fixation contract	A contract for the sale of cocoa which gives one the right to fix the final billing price at one's convenience before a certain deadline, by using the formula of either a differential or a ratio against an agreed futures month position.
Purchase & Sales Statement	(P&S). A statement sent by the futures commission merchant to a futures customer after the futures position has been closed out. It shows the purchases and sales, as well as the profits made minus the commissions paid, or the losses suffered plus the commissions paid.
Put option	An option which gives the purchaser the right to sell a particular futures contract at an agreed price during an agreed time-span (the opposite is a <i>call option</i> ).
Pyramiding	A trading technique using paper profits earned to provide margins for additional futures transactions without closing out the profitable positions.
Quiet market	A market with little activity and only minor price changes.
Rally	An upward movement in prices after a period of quiet or slowly declining prices.
Ratio	<i>Commercial</i> : the factor applied to the pertinent futures contract price to calculate the billing price on a price fixation contract for the sale of cocoa products. <i>Statistical</i> : the factor applied to cocoa-based products in order to calculate their equivalent weight in cocoa beans.
Ring	The area where floor brokers buy and sell futures and options at open outcry. Also called <i>pit</i> .
Ro-ro vessel	Roll-on, roll-off vessel. These vessels are loaded and discharged using trucks and trailers that enter the hold over a ramp from pier to ship.
SDR	Special drawing right. An artificial currency based on the average of five major currencies and used as an international means of settling accounts among central banks.
Seizure	The freezing of a parcel of cocoa in the domestic market by a judicial authority for alleged violation of the law or to fulfil a monetary obligation of the owner of the cocoa.
Seller's market	A market where goods are in short supply and sellers are in a strong bargaining position.
Shipment declaration	A written note, usually required to be sent by telex, from the seller to the buyer giving specific details of the consignment used in performance of a specific sales contract.

Shipper	A shipper, or exporter, is the first seller in the chain of international buyers and sellers involved in the trade in commodities.
Shipping weight basis	The establishment of a commercial invoice based on the quantity of cocoa shipped as shown on the ocean bill of lading.
Short (adj.)	To be in a position of having sold a contract without having made a prior purchase.
Short (vb.)	To sell a contract without having made a prior purchase.
Short ton	2,000 lb (907 kg).
Spot month	The first delivery month on a futures exchange.
Standard contract	A blank contract form specifying most aspects of a transaction in physical cocoa and normally issued by a trade organization. Certain sections left blank for specifics.
Squeeze	Upward pressure on the delivery month pushing its price up against further out positions.
Stop-loss order	An order given to a broker which becomes a market order to buy only if the price reaches a specific upper level or to sell only if it reaches a certain lower level.
Straddle	The purchase of one futures contract month and the simultaneous sale of a different futures contract month in the same commodity on the same exchange. (Also known as a <i>switch</i> .) A straddle can be initiated without first having a position or to move an existing position from one futures delivery month into another.
Striking price	See <b>Basis price</b> .
Strong	The market is strong when there is a lack of sellers and the prices rise on a few transactions.
Subrogation	The concept of accepting payment of an insurance claim from the underwriter and transferring one's right of compensation from the party responsible to the underwriter.
Tape	The price of futures or securities. The term originates from when the transactions of futures and securities were recorded and broadcast on ticker tapes. Now prices are displayed on electronic screens.
TBN	A maritime term referring to a vessel to be identified at a later date.
TCE	Twenty-foot container equivalent. A unit used to define the carrying capacity of container vessels.
Technical rally	An upward price movement based on traders' considerations of such factors as changes in the open position, short-term past price performance, daily volume of trading, but without underlying fundamental changes in the commodity supply and demand situation.
Tender	Delivery of the physical cocoa against a futures or an actuals contract.
Tolling agreement	An agreement whereby firm A contracts the services of firm B to process cocoa beans owned by A.
Trading house	Futures commission merchant. A trading house may buy and sell for its customers as brokers as well as take its own position in the market.
Tramp steamer	A maritime term for a vessel that is available for specific trip or time charters and goes wherever cargo is available.
Transferable notice	The document issued to the clearing house by the holder of a long futures position giving notice that delivery will be made at a specific location at a specific date.
Transshipment	When the vessel that originally carries the cocoa from the port of embarkation transfers its cargo somewhere during the voyage to another vessel, which brings the cargo to its final destination.
UCP 500	Uniform Customs and Practices for Documentary Credits. Rules on letter of credit operations published by the International Chamber of Commerce (ICC).
UNCTAD	United Nations Conference on Trade and Development.

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Utmost good faith	An insurance term obliging the buyer of insurance to disclose to the underwriter any material facts which may affect the prudent underwriter's risk assessment. Failure to do so may allow the underwriter to cancel the policy.
Variation margin	See <b>Margin call</b> .
Volume of trading	The total of either all sales or all purchases on a futures market, but not the sum of both.
Warrant	A paper giving the owner of the cocoa in a warehouse the right to make withdrawals. Known as <i>negotiable warehouse receipt</i> in the United States.
Weak market	A market in which buyers are scarce, prices are drifting lower and there is little trading volume.
Wharfinger's receipt	A receipt issued to a shipper upon delivery of the cocoa to the pier shed at the point of loading.
WWD	Weather working day. A maritime term that refers to the working hours in a day at a particular port during which loading or discharging operations of a vessel can take place.
York-Antwerp rules	Rules commonly used to define the conditions for general average.



# Index

## A

Acetic acid	7,34
ACP countries (Africa, Caribbean, Pacific)	63
Adding value	1,10
Processing locally	12,97
Subsidies	12,98
Africa	13,20
Alkalizing	94,102
Dutching	94
All risks	
See also: Risk/risks	44
Amazon regions	5
American Cocoa Research Institute (ACRI)	8
Amsterdam	80
Andes	14
Ecuadorian Andes	14
Animal and plant safety	81
Arbitration	49,60,86-88
Appeals boards	87
Claiming	49
In the United States	58
Panels	87
Procedure	49
Quality	86
Technical	86
Archer Daniels Midland	61,108
Argentina	106
Asia	16
Asia and Oceania	20
Australia	53,106
Austria	107
Automatic detention of imports	
Detention prior to sampling	80

## B

Bag	
Hydrocarbon-free lubricant	82
Jute	82
Spun-weave polypropylene	82
Baking industry	13
Bangladesh	82
Banks	
Relationships with	84
Barry Callebaut	108
Basic cocoa	5,29,34
Bean count	12,36-37
Bean types	6
Basic	6
Bulk	6

Fine or flavour	6
Normal	6
Ordinary	6
Beans	
Average size	36-37
Colour	10
Damaged	38
Dark breaking	30
Defective	39
Faulty	38
Flavour	10
Light breaking	30
Processors	108
Roasting	93
Size	10
Slaty coloured	38
Belgium-Luxembourg	106
Bills of lading	39
Charter-party bills of lading	43
Liner bills of lading	43
Biological controls	
Black ants	12
Parasitic wasps	12
Black pod	12-13
Fungus	11
<i>P. megakarya</i>	7
<i>Phytophthora palmivora</i>	7
Blocklisting	80
Borneo	14
Brazil	7,9,12,21-24,105
Amazon Basin	19
Amazonas	12-13
Bahia	12-13,19,21,24
Espírito Santo	13
Pará	12-13
Recôncavo	30
Rondônia	13
Brokers	27,57,62
Buffer stock	119

## C

Cacao	6
Cadburys	100,108
Caisse de stabilisation	26,28
Caisse de stabilisation des prix des produits agricoles (CAISTAB)	10,13,26-27
Cameroon	7,9,22-23
Canada	106
CAOBISCO	105
Cargill	108



Cash against documents	76	Cocoa Merchants' Association of America, Inc. (CMAA)	33,86,121
CCN-51	14	Cocoa options	73
Central America	5,17	Calls	73
Mayan civilization	16	Puts	73
CEPLAC	13	Cocoa processing	93-96
CFR		Beans	93
Sales	44	Butter	93
Chartering		Cake	93
Bareboat	43	Economics of	100-101
Charter-parties	43	In producing countries	97-99
Demise	43	Liquor	93
Non-demise	43	Nib	93
Time-charter	43	Nib roasting	93
Chocolate	1,108	Powder	93
As a drink	14	Profitability	101
Conching	95	Cocoa Producers' Alliance	120
Confectionery	108	Cocoa swollen shoot virus (CSSV)	7
Demand	108	Cocoa trading	83-85
Flavour	95	Prudent (functional) trading	83
High-quality from fine or flavour cocoa	29	Unhedged trading	83
Manufacturing	93-96	Colombia	22-23
Mixing	95	Colonial Development Company	
Paste	93	Later to be known as the Commonwealth Development Company (CDC)	14
Unsweetened baking	93	Colour	10,29-30
CIF	41,49	Combined Nomenclature (CN)	63
FCC contract	45	Commodity exchange trading	67
Sales	44	Exchanges	67
Class II ozone depleter	51	Commodity Futures Trading Commission (CFTC)	72
Clearing	70	Common Fund for Commodities (CFC)	119
Clearing house	70	Compound coatings	109
Climate	11	Concentration-time-product (CTP)	47
Cocoa		Condition	41
As raw material	1	Latent damage	41
Belt	12	Consumer markets	1
Beverages	109	Consumption	20,148
Butter	11,13,94	Cocoa and chocolate	105-109
Cake	11,94,100	Contract performance	28
Coatings	109	Contracts	67
Cocoa beans	1	Futures	67
Cocoa-based products	1	Option	73
Flavour	108	Options	67
Health	115	Standardized contract for future delivery	68
Liquor	93	Contractual performance	
Mass	93	Assurance	39
Nutritional properties	115	Conversion factors	
Paste	93	See also: Cocoa bean equivalent	105,149
Powder	108	Cosmetics industry	94
Cocoa Association of London, Ltd (CAL)	33,120	Costa Rica	7,14,30
Cocoa bean equivalent		Côte d'Ivoire	7,9,17,22-23,27
See also: Conversion factors	105,149	Abidjan	27
Cocoa booms and crises	18-19	Grindings	10
Producing countries	17	National economy dominated by export earnings from its cocoa production	23
Cocoa butter	100	Processing capacity	10
Equivalents	113	Production volume	23
Extenders	113	San Pedro	27
In chocolate	100	Cotonou Agreement	63
In cosmetics	109	Crops	
Substitutes	113	Development programme	10
Cocoa cake	11,100	Cultivation	19
Cocoa cycle	17-18	Expansion of	16
Cocoa growing	1,5		
Altitude	5		
Temperatures	5		
Tropical regions	5		

- |  |          |   |                 |
|--|----------|---|-----------------|
| Customs and trade procedures                   | 63       | Economic importance of cocoa                        | 21-25           |
| Cut test                                       | 37-38    | Impact  | 21              |
| Czech Republic                                 | 107      | Revenue-earning opportunities                       | 21              |
|  |          | Social  | 21              |
| <b>D</b>                                       |          | Ecuador   | 7,9,14,22-24,30 |
| Dairy industry                                 | 13       | Guayaquil area                                      | 14              |
| Dealer   | 62       | Electronic commerce                                 | 2               |
| Defaults                                       | 59       | Endosulfan  | 81              |
| Defects  | 30,37    | England   | 16              |
| Germination                                    | 10       | Environment   |                 |
| Insect-damage                                  | 10       | Montreal Protocol                                   | 51              |
| Mould  | 10       | United Nations Environmental Programme (UNEP)       | 56              |
| Small  | 10       | United States Environmental Protection Agency (EPA) | 52              |
| Denmark  | 106-107  | Environmental issues                                | 2               |
| Differential                                   |          | Europe  | 10              |
| Basis  | 73       | European Cocoa Association (ECA)                    | 125             |
| Differential contracts                         | 73       | European Standard EN 766                            | 82              |
| Discount                                       | 73       | European Union (EU)                                 | 102,105         |
| Premium  | 73       | Exchanges   |                 |
| Disease control                                |          | Commodity   | 1               |
| Fungi  | 8        | Special characteristics                             | 1               |
| Insecticides                                   | 11       | Export earnings                                     | 1,22            |
| Integrated disease and pest management regimes | 8        | From cocoa  | 148             |
| Selective spraying                             | 11       | Share of total exports                              | 23              |
| Soil management techniques                     | 10       | Value of cocoa-derived exports                      | 22              |
| Diseases                                       | 1,7      | Export tax  | 35              |
| Black pod                                      | 10-11    | Exporters   | 26,62           |
| Ceratocystis                                   | 14       | Exporters' agents                                   | 27              |
| Cocoa swollen shoot virus (CSSV)               | 7        | First sale  | 62              |
| Control programmes                             | 1        | Exports   |                 |
| Monilia ( <i>Moniliophthora roreri</i> )       | 7,14     | Export certificates                                 | 27              |
| <i>Phytophthora megakarya</i>                  | 10       | Exporters   | 1,26,62         |
| Vascular streak dieback                        | 7        | Marketing systems                                   | 10              |
| Witches' broom                                 | 13       | Of cocoa products                                   | 106             |
| Distribution                                   |          | Value of  | 1               |
| Centres  | 1        | Extension services                                  | 8               |
| Chain  | 1        |   |                 |
| Documentary collection                         | 40       | <b>F</b>  |                 |
| Documents in trust                             | 40       | Fair trade  | 2               |
| Dominica                                       | 30       | Fair trade cocoa                                    | 144             |
| Dominican Republic                             | 16,22-23 | FAO/WHO Codex Committee on Pesticide Residues       | 132             |
| Drying   | 5        | FAO/WHO Expert Committee on Pesticide Residues      | 132             |
| Acetic acid                                    | 7        | Farm sanitation                                     |                 |
| Aeration                                       | 7        | Improved methods                                    | 12              |
| Artificial heat                                | 7        | Fat content   | 10,33           |
| Natural process                                | 7        | Of the nib  | 36              |
| Open air                                       | 7        | Federal Agricultural Marketing Authority            | 15              |
| Sun drying                                     | 7,34     | Fédération du commerce des cacao (FCC)              | 33,122          |
| Duties, taxes                                  | 59       | Fermentation  | 5,38            |
|  |          | Ferment   | 7               |
| <b>E</b>                                       |          | Fermentation time                                   | 34              |
| Earnest money                                  | 72       | Fernando Po   | 16              |
| East Africa                                    | 16       | Fine or flavour cocoa                               | 29-30           |
| East Timor                                     | 5,11     | Ecuador   | 14,29           |
| Eastern Europe                                 | 105      | Fine  | 6               |
| Eastern European countries                     | 63       | Flavor  | 6               |
| E-commerce                                     | 89-90    | Niche markets                                       | 30              |
| CHIPS  | 90       | Fixed delivery period                               | 67              |
| E-mail   | 89       |   |                 |
| Internet                                       | 89       |   |                 |
| Provider                                       | 89       |   |                 |

- |   |                 |  |                    |
|---|-----------------|--|--------------------|
| Flavour   | 10,29           | <b>H</b>   |                    |
| Characteristics   | 33              | Haiti  | 16                 |
| High-flavour beans  | 14              | Harmonized Commodity Description and Coding System | 63                 |
| FOB   | 41              | Harmonized System (HS)                             | 63-64              |
| Contracts   | 39              | Harvest  |                    |
| Price   | 28              | Harvesting cocoa                                   | 7                  |
| Sales   | 39-40,44        | Main crop  | 7                  |
| Food and Agriculture Organization of the United Nations (FAO) | 20              | Mid-crop   | 7                  |
| <i>Force majeure</i>  | 59              | Seasons  | 8                  |
| France  | 16              | Size of  | 1                  |
| Free market   | 26              | Hedging  | 73,78              |
| Free marketing systems  | 28,77           | Differential trading                               | 74                 |
| Full-line manufacturers                                       | 100             | Facilities   | 1                  |
| Fumigants   |                 | Hedgers  | 67                 |
| Methyl bromide  | 46              | Operations   | 74                 |
| Phosphine   | 46              | Hershey Foods                                      | 108                |
| Fumigation  | 46              | Hershey's  | 100                |
| Costs of fumigating   | 48              | Historical development of cocoa                    |                    |
| Fumigation certificate  | 81              | Aztec  | 16                 |
| Functional trading  | 78              | Central America                                    | 16                 |
| Fungible  |                 | Mayan civilization                                 | 16                 |
| Commodity   | 97              | Spanish colonial territories                       | 16                 |
| Interchangeable   | 70              | Hong Kong (China)                                  | 106-107            |
| Uniform   | 70              | Hungary  | 107                |
| Fungicides  | 7               | Hybrids  | 5,8                |
| Futures commission merchants or FCMs                          | 72              | Amazon Crosses                                     | 11                 |
| Futures markets   | 1,69            | Catongo  | 30                 |
| Commercials   | 69              | Disease-resistant                                  | 8                  |
| Day traders   | 70              | Pest-resistant                                     | 8                  |
| Exchange market   | 69              |  |                    |
| Functional traders  | 69              | <b>I</b>   |                    |
| Hedgers   | 69              | Importers  |                    |
| Liquidity   | 70              | Agents   | 62                 |
| Locals  | 70              | Import merchants                                   | 61                 |
| Positional traders  | 69              | Intermediaries                                     | 61                 |
| Positional trading  | 69              | Physical commodity distributors                    | 61                 |
| Speculators   | 69              | Imports  |                    |
| Terminal market   | 69              | Duties   | 63                 |
|   |                 | Importers  | 1                  |
| <b>G</b>  |                 | Of cocoa beans                                     | 110                |
| German Cocoa Trade Association                                | 124             | Of cocoa products                                  | 107                |
| Verein der am Rohkakaohandel beteiligten Firmen e.V.          | 124             | Independent intermediaries (traitants)             | 26                 |
| Germany   |                 | India  | 82                 |
| A major consumer market                                       | 110-112         | Indonesia  | 7,9,19,22-23,25,30 |
| Chocolate confectionery industry                              | 111             | Industry organizations                             | 119-126            |
| Demand  | 110             | Infestation  | 48                 |
| Imports   | 110             | See also: Phytosanitation and fumigation           | 41                 |
| Ghana   | 7,9,16,18,22-23 | Insects  | 38                 |
| Cocoa Marketing Board (Cocobod)                               | 11,27           | Institute of London Underwriters' Cargo Clauses    | 45                 |
| Diversification of national economy                           | 23              | Institute war clauses                              | 45                 |
| Government control over sales                                 | 26              | Strike clauses                                     | 45                 |
| Grading standards   | 36,39,133       | Insurance  | 49,59              |
| Greece  | 107             | All risks  | 44                 |
| Grenada   | 22-23,30        | Claim  | 49                 |
| Grinding  | 99              | International Chamber of Commerce (ICC)            | 40                 |
| Industry  | 14              | International Cocoa Agreement                      | 119                |
| Guittard Chocolate Company                                    | 108             | History  | 136                |
|   |                 | First Agreement                                    | 136                |
|   |                 | Second Agreement                                   | 137                |
|   |                 | Third Agreement                                    | 137                |

- |   |               |                                     |               |
|---|---------------|-------------------------------------|---------------|
| Fourth Agreement  | 138           | Open cover                          | 44            |
| Fifth Agreement   | 139           | See also: Insurance                 | 44            |
| International Cocoa Organization (ICCO)   | 20,82,120     | Marine transport                    | 41            |
| Website   | 147           | Break-bulk                          | 42            |
| International Cocoa Research and Education Foundation (ICREF)                       | 115           | Bulk shipment                       | 42            |
| International cocoa standards   |               | Chartering                          | 43            |
| Code of Practice  | 130           | Containerization                    | 42            |
| Model Ordinance   | 129           | Documentary elements                | 42            |
| International commodity body (ICB)  | 119           | LASH (lighter aboard ship)          | 42            |
| International Jute Organization (IJO)   | 82            | Physical elements                   | 42            |
| Members   | 126           | Market                              |               |
| International Office of Cocoa, Chocolate and Sugar Confectionery Industries (IOCCC) | 82,126        | Developments                        | 1             |
| International Organization for Standardization (ISO)                                | 36-37,80      | Eastern Europe                      | 105           |
| International Trade Centre  | 63            | European Union                      | 105           |
| International Union of Pure and Applied Chemistry (IUPAC)                           | 82            | Former Soviet Union                 | 105           |
| Internet  | 105           | Russian Federation                  | 105           |
| Instant information   | 27            | Trends                              | 1             |
| Ireland   | 106-107       | United States                       | 105           |
| Italy   | 106           | <i>Market Rules</i>                 | 58,69         |
| <b>J</b>  |               | Marketing boards                    | 12,26,77      |
| Jamaica   | 30            | Cooperative monopolies              | 26            |
| Java  | 11            | Farmers' organizations              | 12            |
| Just-in-time basis  | 98            | Free market route                   | 26            |
| Jute  |               | Government                          | 12            |
| Sisal   | 82            | Levies                              | 13            |
|   |               | Private sector                      | 12            |
| <b>K</b>  |               | Marketing methods                   |               |
| Kalimantan (Borneo)   | 17            | At origin                           | 26-28         |
| Kraft Jacobs Suchard  | 108           | From the farm to the port of export | 26            |
|   |               | Markets                             |               |
| <b>L</b>  |               | Actuals market                      | 68            |
| Labour  | 18            | Cash market                         | 68            |
| Land  | 18            | Futures                             | 68            |
| Planted to cocoa  | 1,5           | Physical                            | 68            |
| Latin America   | 7,13,16       | World                               | 11            |
| Latin America and the Caribbean   | 20            | Marking                             | 59            |
| Less than container load (LCL)  | 39            | Mars                                | 100,108       |
| Letter of credit  | 40,76         | Merchant                            | 62,84         |
| Light-coloured 'dark' chocolate   | 30            | Mexico                              | 5,22-23,107   |
| Lindt & Sprüngli  | 108           | Minimum registration prices         | 26            |
| Liquor  | 14,63,93,100  | Mirids (capsid)                     | 7,12-13       |
| London  | 1             | Modified atmospheres                | 47            |
| London International Financial Futures and Options Exchange (LIFFE)                 | 37,71         | Monilia                             | 7             |
|   |               | Mould                               | 38            |
| <b>M</b>  |               | <b>N</b>                            |               |
| Madagascar  | 30            | Naçional                            | 6             |
| Malaysia  | 9,14,19,22-24 | National Coffee and Cocoa Board     | 13            |
| Federal Agricultural Marketing Authority  | 15            | National economies                  | 25            |
| Margin  | 10            | Significance of cocoa exports       | 25            |
| Marine insurance  |               | National Futures Association (NFA)  | 73            |
| Facultative insurance   | 44            | Nestlé                              | 61,100,108    |
| Loss experience   | 44            | Netherlands                         | 16,98,102,111 |
|   |               | Along the river Zaan                | 102           |
|   |               | Major cocoa grinding industry       | 102           |
|   |               | New York                            | 1             |
|   |               | New York Board of Trade (NYBOT)     | 37            |
|   |               | New Zealand                         | 53,106        |
|   |               | Nib                                 | 36            |
|   |               | Colour                              | 38            |
|   |               | Nib-to-bean ratio                   | 10            |

- |   |              |                                      |           |
|---|--------------|--------------------------------------|-----------|
| Nigeria   | 7,9,16,22-23 | Price                                |           |
| Mineral oil industry                                      | 24           | Cycles                               | 20        |
| Nigerian Produce Marketing Board                          | 12           | Daily prices of cocoa beans          | 72        |
| Non-cocoa fat in chocolate                                |              | Risks                                | 1         |
| EU ruling   | 113-114      | Prices                               |           |
| Norway  | 107          | Cocoa bean                           | 148       |
| Nouvelle CAISTAB  | 27           | High cocoa prices of the mid-1970s   | 23        |
| NYBOT – New York Board of Trade                           | 71           | International market                 | 1,12      |
|   |              | Premium prices                       | 14        |
|   |              | Risks                                | 68        |
|   |              | To the farmer                        | 11-12,26  |
|   |              | Volatility                           | 70        |
| <b>O</b>  |              | Principals                           | 27        |
| Ocean-going ships   | 27           | Principe                             | 16        |
| Oceania   | 106          | Privatization                        |           |
| Off-flavours  | 38           | Free marketing system                | 12        |
| Office national de commercialisation des produits de base | 13           | Purchasing and marketing             | 11        |
| Options trading   | 74-75        | Processing                           | 1         |
| Organic   |              | Finished cocoa-based products        | 21        |
| Farming   | 2,30         | Importer                             | 1         |
| Organic cocoa   | 143          | Large-scale                          | 10        |
| Organoleptic characteristics                              | 36           | Local                                | 1,15      |
| Organoleptic tests  | 38           | Pressing                             | 13        |
| Original margin   | 72           | Semi-finished cocoa-based products   | 21        |
| Other provisions  | 60           | Processing locally                   | 21        |
| Outsourcing   | 29           | Production                           |           |
| Chocolate manufacturing                                   | 108          | By region                            | 17        |
|   |              | Costs                                | 1         |
|   |              | Management and inputs                | 19        |
|   |              | Producer                             | 1         |
|   |              | Producing countries                  | 1,9       |
|   |              | Profits                              | 1         |
|   |              | World                                | 1,9,17,29 |
| <b>P</b>  |              | Products                             |           |
| Pacific   | 7,13,105     | Finished                             | 1         |
| Packaging   | 59           | Semi-finished                        | 1         |
| Palm oil  | 15           | Purchasing schemes                   | 27        |
| Panama  | 30           |                                      |           |
| Papua New Guinea  | 5,22-23,30   | <b>Q</b>                             |           |
| Payment   | 39,59        | Quality                              | 41        |
| Documentary collection                                    | 40           | And exporters' services              | 39        |
| Documents in trust  | 40           | Assessing quality                    | 35        |
| How to lessen the risk of non-payment                     | 40           | Dampness                             | 35        |
| Letter of credit  | 40           | Determination of                     | 59        |
| Post payment  | 41           | From the farm to the point of export | 51        |
| Performance bonds   | 76           | Maintaining                          | 51        |
| Pest control  | 52           | Producing good quality               | 34        |
| Biological controls                                       | 8,12         | Quality requirements                 | 35        |
| Current practices   | 52           | Quality control                      | 28        |
| Potential alternatives                                    | 53           |                                      |           |
| Predatory insects   | 8            | <b>R</b>                             |           |
| Pesticides  | 81           | Rainfall                             | 5         |
| Pests   | 1,7          | Regulations                          | 1         |
| Cocoa moth  | 81           | On cocoa                             | 80        |
| Cocoa pod borer   | 7,11,15      | Republic of Korea                    | 106-107   |
| Pharmaceutical industry                                   | 94           | Residues                             | 81        |
| Phytosanitation   | 46-47        | Risks                                | 1         |
| Aspects of contracts                                      | 47           | Management (see also: Hedging)       | 76-79     |
| Plantation  | 7            | Market risks                         | 78        |
| Crops   | 7            | Performance risks (partner risks)    | 76        |
| Pods  | 5,7          | Physical risks                       | 76        |
| Poland  | 106-107      | Russian Federation                   | 63,105    |
| <i>Police maritime</i>                                    | 45-46        |                                      |           |
| Portugal  | 107          |                                      |           |
| Post-harvest processing                                   | 35           |                                      |           |
| Post-harvest treatment                                    | 1,51-56      |                                      |           |
| Indonesia   | 12           |                                      |           |

- S**
- Sabah
    - Bal Plantation 14
  - Sacking material
    - Food grade 34
  - Samoa 30
  - Sampling 36
    - Errors 50
    - International standards 36
    - Methodology 36
    - Methodology of analysis 36-37
  - Sao Tome and Principe 16,21,22,23,30
  - Sarawak 25
  - Saudi Arabia 107
  - Schokinag Schokolade Industrie 108
  - Screen trading 67
  - SDRs (Special drawing rights) 72
  - Shell 36-37
  - Shipment declaration 59
  - Shipping cocoa beans 1
    - From farm to export point 33
    - Guidance for 33-50
    - Management 33
    - Points of current practice 33
  - Shipping documents 59
  - Sierra Leone 9
  - SIFCA 61
  - Smallholdings 1,34-35
    - Size 25,34
    - Smallholder farming 7
  - Soil 18
    - Fertilization 19
    - Maintenance 19
    - Nutrient values 19
    - Structure 19
  - South Africa 106
  - South America 17
  - South-East Asia 17
  - Spain 106
  - Speciality
    - Gourmet chocolate 6
  - Speciality cocoas 30
  - Speculators 67
  - Sri Lanka 5,30
  - Standard contracts 36,41,43-45,47,49,57-60,69
    - Cocoa Association of London Ltd (CAL) 57
      - See also: Chapter 24
    - Cocoa Merchants' Association of America, Inc. (CMAA) 57
      - See also: Chapter 24
    - Fédération du commerce des cacaos or FCC 57
      - See also: Chapter 24
    - Most important clauses 59
    - Seal 58
  - Storage 1,70
  - Stowaways 82
  - Supervision 59
    - Departure 39
    - Independent supervisor 50
    - On arrival 49
    - See also: Superintendence 49
    - Superintendence company 77
  - Supervisors 49
  - Sulawesi (Celebes) 11,17,25
  - Supply
    - Historical development of cocoa 16-20
    - Stocks and grindings 148
    - Structural supply deficits 20
  - Supply chain 1
  - Support services 1
  - Sustainable production 2,8
    - Definitions 8
    - Rejuvenation and replanting 20
    - Sustainable Cocoa Program (SCP) 8
  - Sweden 106-107
  - Switzerland 106-107
- T**
- Theobroma* 16
  - Togo 22-23,26
  - Tolling 101
    - Agreements 11
  - Trade associations 62,68,119-126
  - Trader 62
  - Trading practices 1
  - Trees 7
    - Breeding 8
    - Height 5
    - Propagation 8
    - Seedlings 15
    - Varieties 1
  - Trinidad 14
  - Trinidad and Tobago 16,30
  - Turkey 106
- U**
- Ukraine 107
  - Unhedged position 78
  - Uniform Customs and Practice for Documentary Credits (UCP 500) 40
  - United Nations 119
    - World Commission on Environment and Development 8
  - United States Environmental Protection Agency (EPA) 56,81
  - United States Food and Drug Administration (FDA) 13,35,38,80-81
    - Automatic detention 48
    - Zero tolerance 48
  - US Department of Commerce (Bureau of the Census) 105
- V**
- Valrhona 108
  - Van Houten 94
  - Variation margin call 72
  - Varieties 5
    - Amelonado 11
    - Arriba 14
    - Cacau comum 12
    - CCN-51 14
    - Criollo 5,30

Criollo-based	5	Weights	59
Forastero	5,10	Landed weight contract	41
Forastero-based	5	Loss in weight claim	41
Naçional	6,14,29	Shipping weight contract	41
Trinitario	5	Weighing errors	50
West African Amelonado/Forastero	15	Weight notes	41
Vascular streak dieback	7	West Africa	7,9,14,16
Venezuela	5,16,30	West Indies	5,17
<b>W</b>		Witches' broom	7
Warehousekeeper	41,50	<i>Crinipellis perniciosa</i>	7,13
Waste	37	Working capital	84
Waste/foreign matter	37	World Customs Organization (WCO)	63
Weather	1,7	World's Finest Chocolate	108
Adverse conditions	7	<b>Y</b>	
El Niño	14	Yields	5-6
Websites	9,145		

## How to view the hidden image in the picture on the front cover

The picture on the front cover shows a collection of cocoa pods of various origins. It has been created by Bohdan Petyhyrycz, Canada.

The picture hides a three-dimensional image, which can be viewed with the aid of the following techniques:

### Technique 1

Look towards the picture at a distance of 25 to 30 cm, but do not focus on anything. Give it a blank stare and relax. The picture will be blurry at first, but it will soon slowly begin to change. Do not alter your focus. After a while, the 3-D image will come out clearly.

### Technique 2

Place the picture right in front of your eyes. The picture will be blurry, out of focus. Then, without changing the focus of your eyes (the picture should remain blurry), slowly move the picture away from you. Stop at a distance of 25 to 30 cm. Make sure the picture remains blurry and the 3-D image will emerge.

### Technique 3

Look at a distant object, e.g. through a window. The focus of your eyes is now far away. Move the picture across your line of vision, between your eyes and the distant object, keeping the picture at around 25 to 30 cm from your eyes. Maintain your focus on the far-away object: the picture will be blurry, out of focus. Be patient and the 3-D image will gradually emerge and will eventually become clear.

Some give up if the 3-D image does not appear within a minute or two. Don't. With just a little patience, most learn the techniques.

In the picture on the front cover, the hidden 3-D image is a text with two words reading vertically, looking like this:

C	C
O	A
C	C
O	A
A	O



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