



COCOA



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Introduction

West Africa was “conceived” for the most part by the colonizers seeking suppliers of agricultural raw materials. The Office du Niger (initially set up for cotton), the groundnut basins in Senegal and northern Nigeria, cotton basins, rubber tree and oil palm plantations were responsible for shaping the rural landscape, fostering the development of towns, redistributing the population and sometimes even defining borders of future nations states.

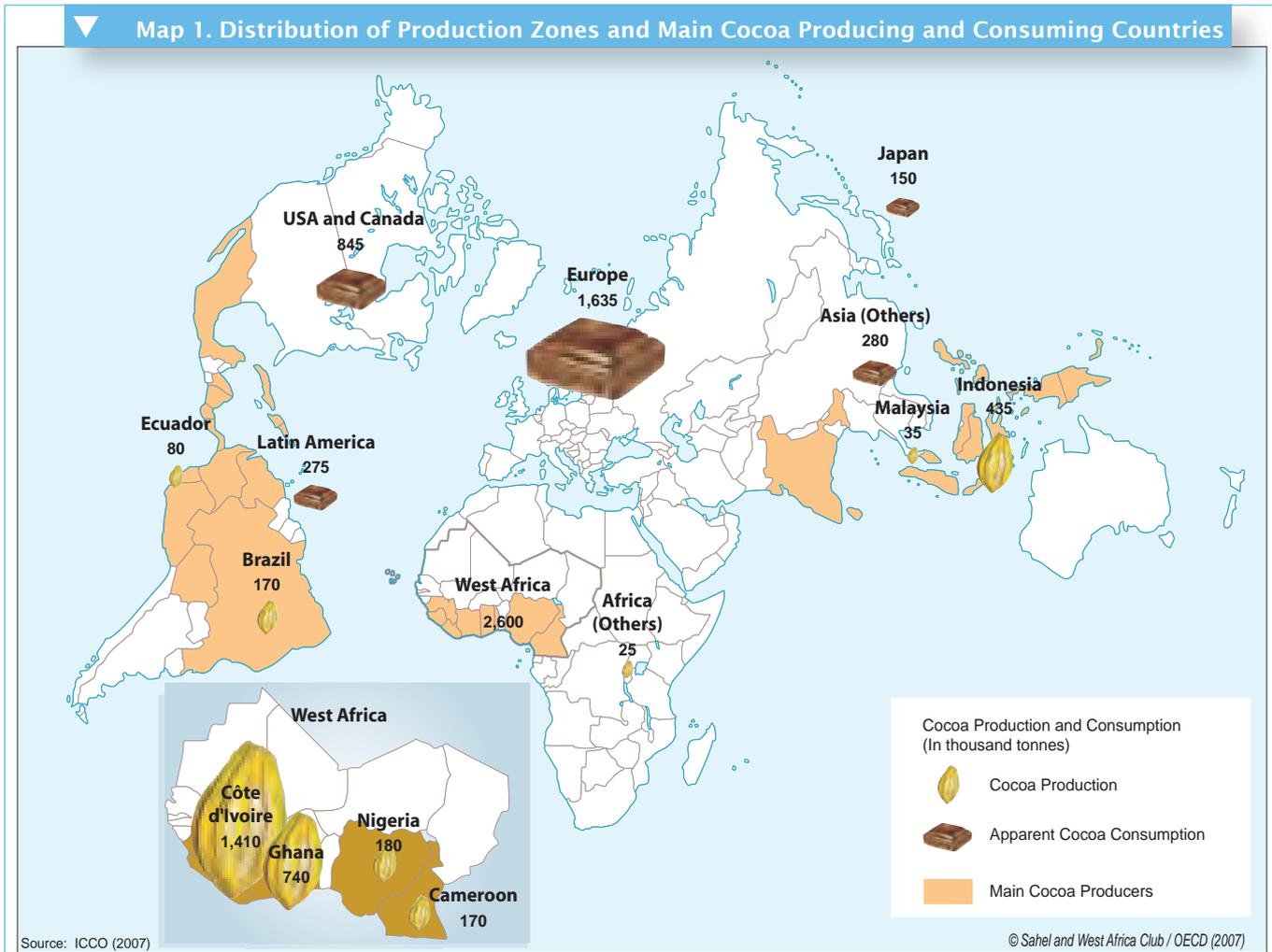
Cocoa and coffee are emblematic of this history. Often considered inseparable, grown in the same areas, both dependent on the London and New York stock exchanges, subject to speculative global markets, they are two topic-specific chapters of the Atlas on Regional Integration in West Africa.

I. West Africa in the International Market

1.1 Overview of Supply and Demand

Since 1960, world cocoa production has increased threefold, from 1.2 to 3.6 million tonnes. This growth was punctuated by several jolts caused by structural adjustment policies, crop infestations, diseases and market speculation, all of which have affected production. Approximately fifty countries in the inter-tropical zone grow cocoa beans, three of which dominate world production: Côte d’Ivoire (39%), Ghana (21%) and Indonesia (13%).

The oldest of the three major production basins (see Map 1) covers Central America and stretches across South America from the western Pacific coast to the Brazilian coastline. The second can be found in West Africa, from Guinea to Cameroon where, apart from

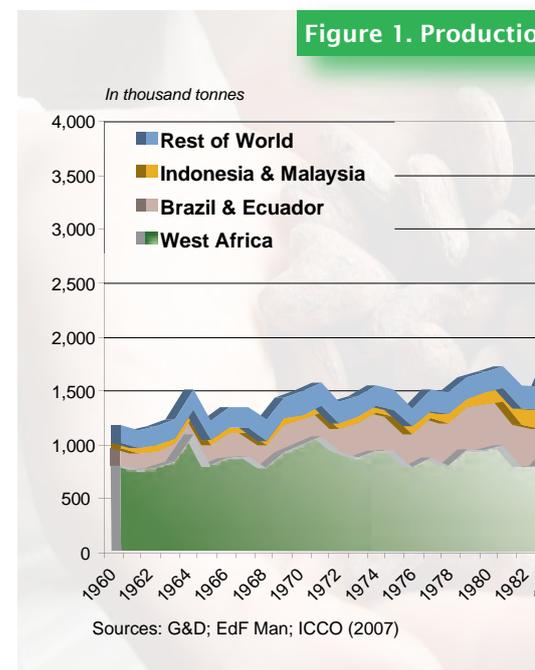


Benin, all the countries grow cocoa trees. Other more modest African producing countries (< 7,000 tonnes/year) are spread across the rest of the continent. Indonesia is at the heart of the third basin, along with Malaysia, although its production has fallen drastically since the 1990s, and Papua New Guinea where production has been increasing.

Two-thirds of world cocoa production originates from West Africa alone. The political crisis in Côte d'Ivoire has not compromised this region's dominance at all - in fact, it has only been strengthened further. The region has been able to increase its production in the face of rising world demand, whilst the American and Asian regions were experiencing relative stagnation (see Figure 1).

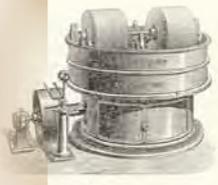
From 1960 to 2006, world demand rose in step with production, reaching 3.5 million tonnes. The 70 "user countries"¹ include exporting countries, which have low consumption levels but process cocoa to produce by-products for the industry, as well as importing countries, which process and consume a major share of the production.

At present, while demand is stagnating in American countries (25% of international demand) and in Europe (50%), the world's primary consumption region, it is increasing slightly in Asian and Oceanian countries (13%). West African consumption is marginal.



Box 1. The History of Chocolate

Cocoa trees originated in Central America's rainforests. The Mayas and Aztecs used their beans to prepare a brew called "chocolate" (bitter water) that was believed to have nourishing, strengthening and aphrodisiac effects. It was also used as currency for paying taxes and purchasing slaves. Christopher Columbus discovered cocoa in July 1502 on the tiny island of Guanaja (currently Honduras). In 1524, Hernán Cortés sent a cargo of cocoa beans to the court of Charles V, who adopted the drink to which honey is added. Cocoa turned into profitable business, with the Spanish having a monopoly. It was introduced to France in 1615 with the marriage of Anne of Austria, daughter of Spain's King Philip III, with Louis XIII. In 1657, it entered England and in 1660, the English began growing cocoa in Jamaica, one of their colonies. In the 17th century, the Dutch took over a major share of the cocoa trade between America and Europe.



For a very long time, the preparation technique was very basic: hand-grinding of the cocoa beans with a cylinder on a heated, slanting stone; but it changed considerably throughout the 19th century:

- ▶ **1811:** POINCELET, a Frenchman, developed a cocoa-bean mixer.
- ▶ **1815:** VAN HOUTEN, a Dutchman, set up the first chocolate factory, soon followed by the Swiss - CAILLER (1819), SUCHARD (1824), then in Lausanne by KOHLER, and then LINDT and TOBLER.
- ▶ **1819:** Cailler, a Swiss, produced the first chocolate bar.
- ▶ **1821:** CADBURY, a Briton, made his own chocolate. He invented crunchy black chocolate, chocolate biscuits for tea, as well as chocolate with fruit and nuts.
- ▶ **1824:** Antoine MENIER set up the first industrial chocolate factory in the world at Noisiel sur Marne (France).
- ▶ **1828:** Conrad J. Van Houten registered his patent for chocolate powder.
- ▶ **1830:** Kohler developed hazelnut chocolate.
- ▶ **1842:** Charles BARRY developed trading in London and a cocoa processing factory was established in Meulan in the early 20th century.
- ▶ **1847:** Sale of chocolate in bars.
- ▶ **1848:** Auguste POULAIN established a confectionary and chocolate unit in the periphery of Blois (France).
- ▶ **1862:** Establishment of the ROWNTREE chocolate factory in England.



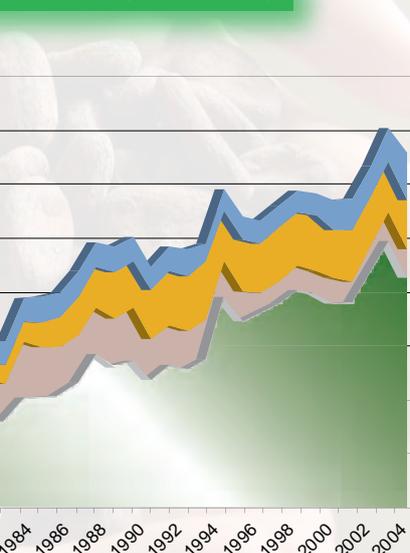
1. "Cocoa use" means the grinding and processing of the raw material - cocoa beans - into various by-products, mostly destined for the chocolate industry (see Box 2).

1.2 Trade and the International Market

While cocoa may be produced essentially in developing countries, its by-products are consumed mainly in industrialised countries, with the main purchasers being the chocolate processing and confectionary industry. Some producing countries also process part of their cocoa bean production themselves. The by-products obtained (cocoa mass, powder and butter - see Box 2) are exported or used domestically to supply the chocolate industry. Producing countries' share of processing is growing steadily. In Brazil and Malaysia, the local processing industry absorbs most of their production. In West Africa, the grinding entities - most of which are located in Côte d'Ivoire and Ghana - account for 14% of world volume.

Cocoa is mainly traded on London and New York's stock markets. Highly sensitive to rumours or anticipation of stock depletions, bad harvests and weather-related or political events, the market is extremely unstable and speculative. Price variations can be considerable (see Figure 2). However, market prices have shown a downward trend since the early 1980s, due to the dual impact of supply surplus and the substantial reserves

Price Trends (1960-2005)



Box 2. Cocoa Uses

The by-products of cocoa beans (liqueur, paste, butter, cake and powder) are the chocolate industry’s raw materials, and its best-known end product is chocolate. Other products are also prepared with the main intermediary by-products mentioned, notably butter and powder. Powder is used to flavour biscuits, ice creams, milk products, dairy drinks, etc. Cocoa butter is also used in tobacco, soap and cosmetic manufacturing. In traditional medicine, it is used to treat burns, chills, dry lips, fevers, malaria, rheumatism, snake bites and other wounds. (Source: UNCTAD)

Since 2000, a European directive authorises the use of up to a maximum of 5% of six fats from different plants to replace cocoa butter in chocolate production. These are: illipe, palm oil, sal, shea, kokum gurgi and mango kernels. While manufacturers have benefited from this situation due to the cost of these products and ease of manufacture, producers highlight the impact in terms of the reduction of world cocoa demand.

held by consuming countries. In the 1980s, consuming countries took advantage of falling prices to build up considerable reserves, which they use to regulate the market to their advantage. Producing countries are not in a position to build reserves² in their own interest³, which is why they remain subject to the world market.

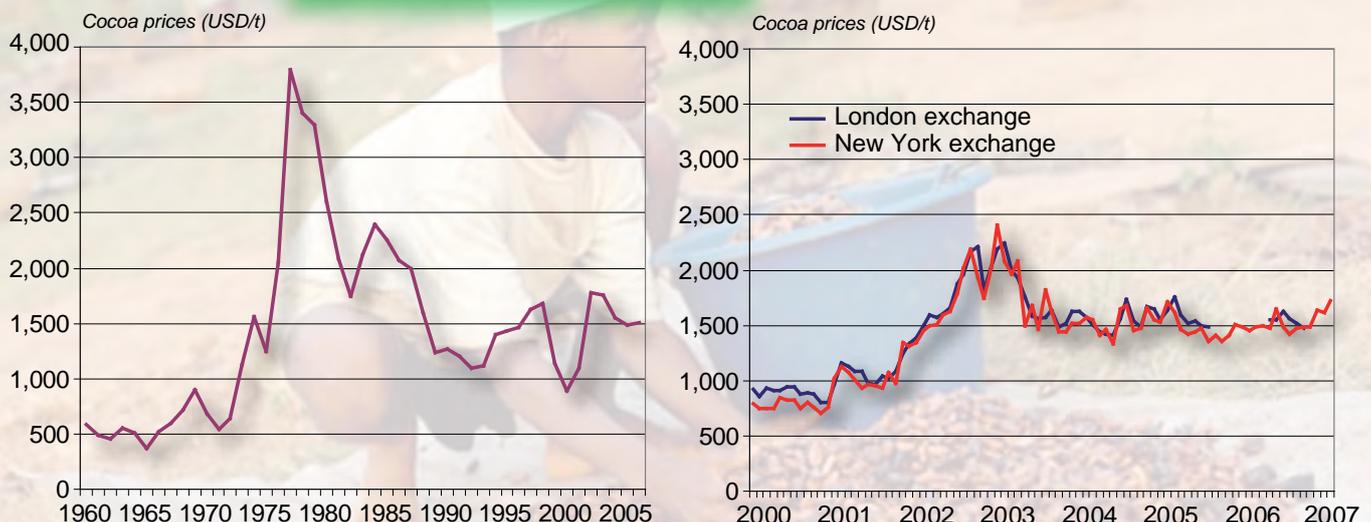
1.3 The Sector and its Actors

Cocoa is produced by small farmers, more-or-less structured cooperative-type organisations or major groups (large plantations).

Merchantable cocoa⁴, produced by local producers or artisans, enters the market via channels in which the number of actors has increased substantially since the sector’s liberalisation. The largest number of actors, patent-holders, accredited by local monitoring organisations,

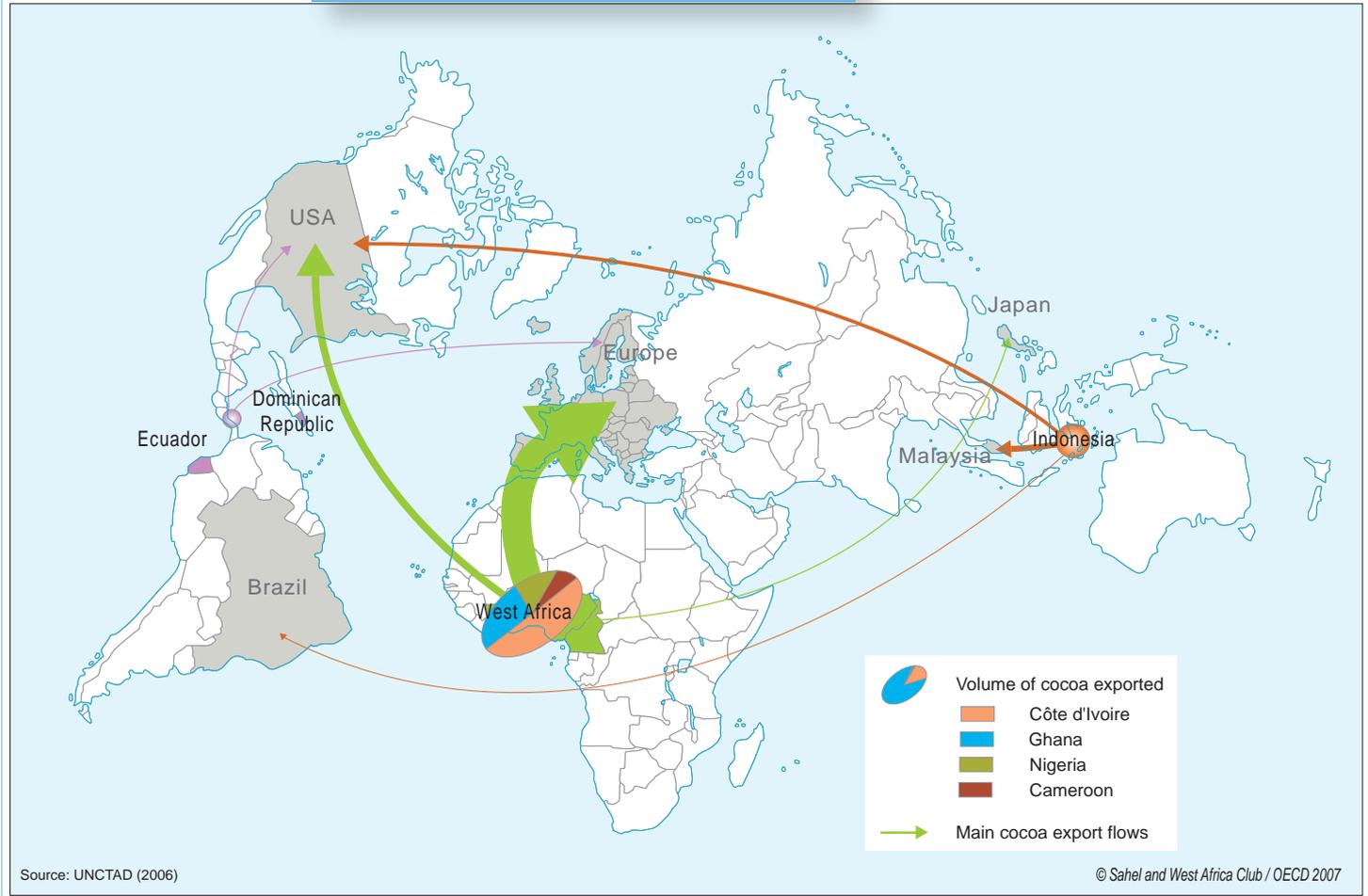
2. In tropical countries, storage is difficult due to the hot and humid climate which promotes insect and mould development, making storage highly costly.
3. In 1998, Côte d'Ivoire's President Houphouët-Boigny launched "the cocoa wars" in an attempt to drain European markets by building reserves, but failed in the effort.
4. After harvesting the cocoa pods, they are broken open manually to extract the beans. These are left to ferment for 5-6 days, after which they are dried. This product can then be stored and is called "merchantable cocoa".

Figure 2. Cocoa Market Price Trends



Sources: ICCO and Nybot

Map 2. Main World Cocoa Export Flows

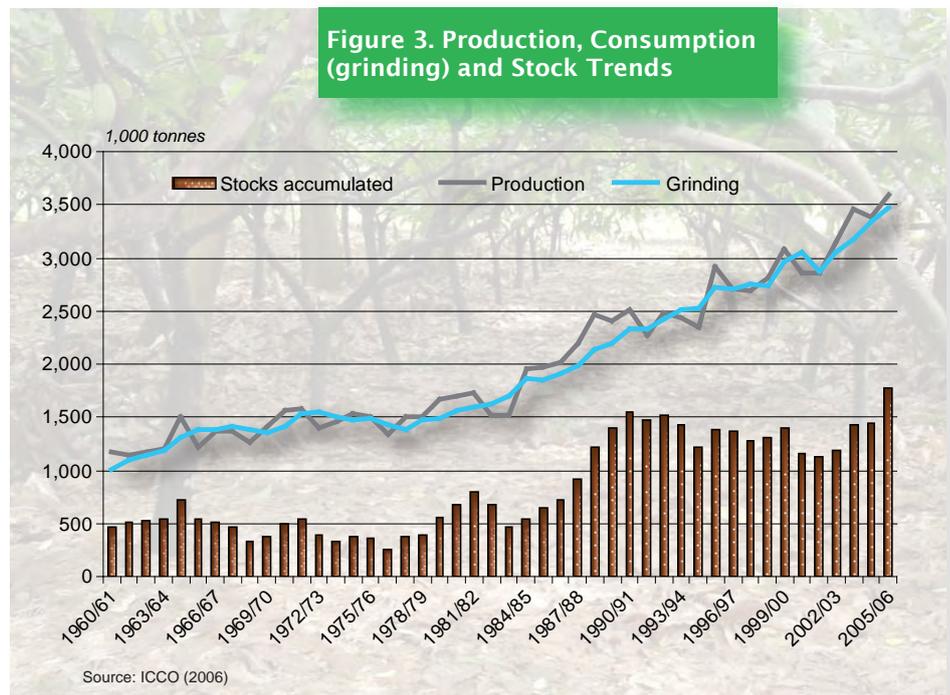


Source: UNCTAD (2006)

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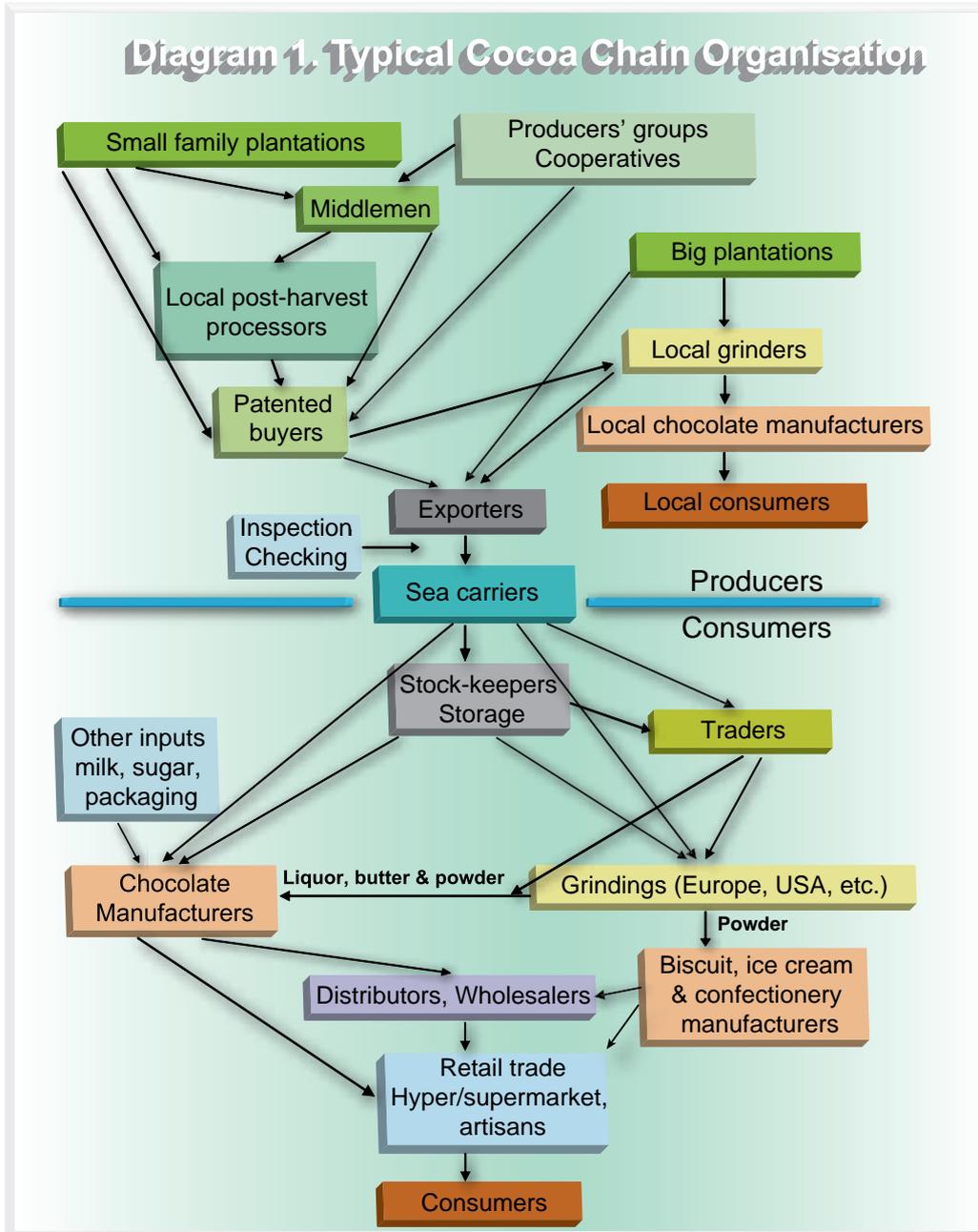
act as intermediaries for supplying exporters. Today, large exporters are investing in purchase systems that are closer to the producers, much to the detriment of smaller actors. The new system also affects

Figure 3. Production, Consumption (grinding) and Stock Trends



Source: ICCO (2006)

Diagram 1. Typical Cocoa Chain Organisation



local patented exporters - initially very large in number - the weakest of whom are seeing their market shares shrink or disappear. Thus, the major exporters are playing an increasing role in producing countries, in processing merchantable cocoa into manufactured products. It is they who are supplying the industry in consuming countries with raw material, liquor, butter and powder, or putting chocolate-based products on local or regional markets. Three big multinational groups dominate the market: ADM Cocoa, Cargill and Barry Callebaut. They are present in West Africa's producing countries along with other players whose size varies according to the country concerned.

Most of the cocoa produced is sent to the main consuming countries⁵ in the form of merchantable cocoa or semi-manufactured products. After being unloaded in the ports, the cocoa - which can be stored as

5. Six multinationals control 80% of chocolate mass distribution: Cadbury-Schweppes, Ferrero, Hershey Mars, Nestlé and Phillip Morris.

6. The production statistics have been taken from the ICCO and may differ from those of the FAO's, especially in the case of Nigeria (412,000 tonnes according to the FAO as against 175,000 tonnes for the ICCO).
7. In 2004, the FAO's production estimates were 22,000 tonnes in Togo, 11,000 tonnes in Sierra Leone and 2,500 tonnes in Liberia.

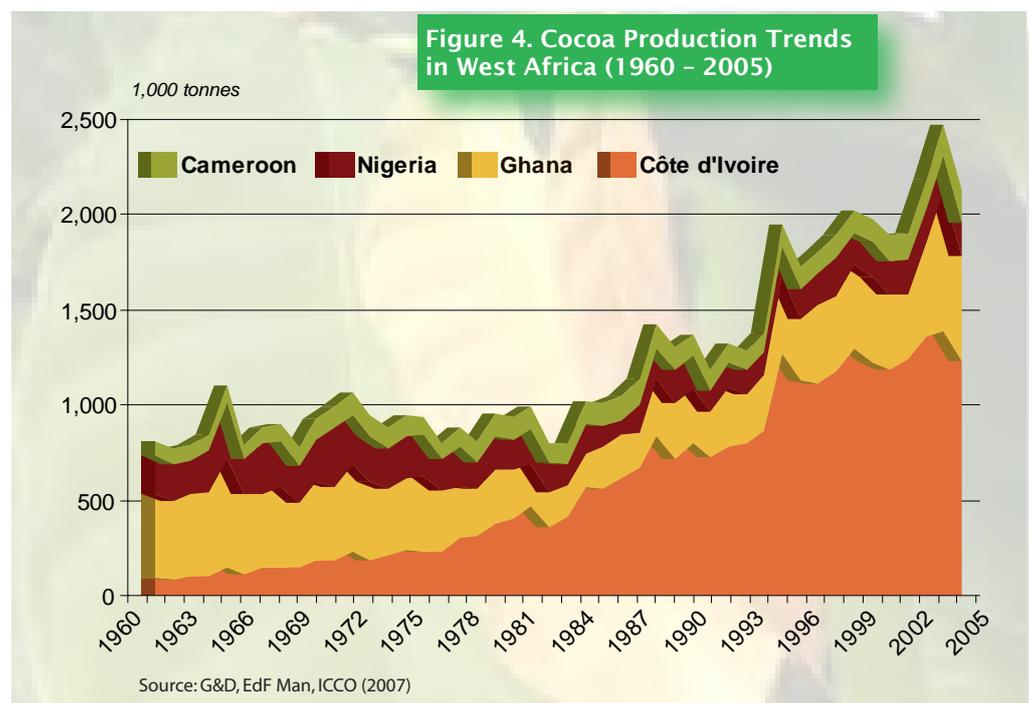
cocoa beans for 3 years or more – is redirected towards industrialists and manufacturers who themselves make the end products or intermediary products for chocolate and biscuit industries as well as artisans that have not invested in the direct processing of cocoa beans.

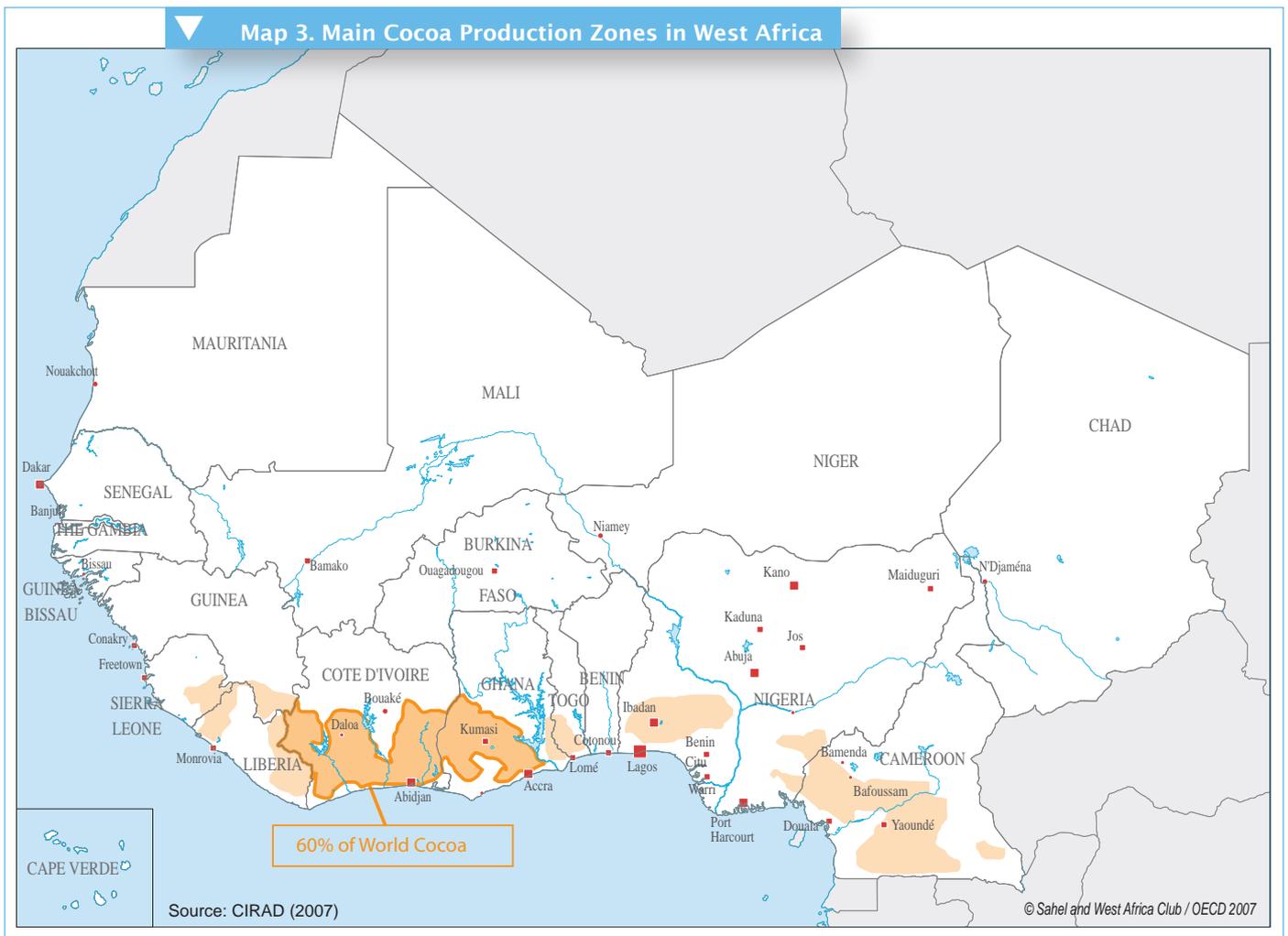
II. West African Cocoa

2.1 Regional Overview

West Africa, the world leader, produces over 99% of African cocoa. The continent's other producing countries - Uganda, Tanzania, Madagascar, Equatorial Guinea and Sao Tome & Principe – are highly renowned in the industry and among chocolate manufacturers for their cocoa's aromatic properties. But their national production stands at less than 7,000 tonnes/year.

West African production (see Figure 4) is dominated by Côte d'Ivoire (1.3 million tonnes in 2005) and Ghana (600,000 tonnes), which produce almost 60% of the world's cocoa. Nigeria (175,000 tonnes⁶) and Cameroon (166,000 tonnes) share a production basin. These four countries are among the world's five primary producers. Togo, Sierra Leone and Liberia's production is much lower⁷. The prospects of an increase in cocoa cultivation in these countries are slim (availability of land and labour, competition from other economic agricultural activities). Apart from a few new pioneer farming areas that could be brought under cocoa cultivation in Nigeria and Cameroon – and maybe Liberia and Sierra Leone – all the favourable cocoa cultivation areas are already being exploited in West Africa.





2.2 Comparison of Paths Taken by Ghana and Côte d'Ivoire

Development of New Pioneer Farming Areas (late 19th century to 1940)

Cocoa cultivation emerged in the Gold Coast (currently Ghana) in 1871. Exports to Great Britain started in 1881. At that time, the production centre was located in Accra's highly populated hinterland, now the country's Eastern Region. The planted area spread rapidly. Cocoa plantation was encouraged by the missionaries and promoted by their botanical gardens, quite naturally following in the wake of the road and rail infrastructure gradually being developed.

In around 1890, cocoa could be seen in Western Côte d'Ivoire, bordering Liberia, where it was grown alongside coffee. But the colonial authorities paid it little attention from the economic viewpoint. The first real plantations, combined with coffee trees, were developed by European planters in 1895. A few years later, cocoa cultivation developed around Tiassale, but these plantations, badly maintained and in areas with poor soil or tidal flats, soon died out. In 1904, Côte d'Ivoire produced approximately 2 tonnes.



Box 3. Cocoa's Long Journey from the Americas

The cocoa tree, *Theobroma cacao*, originally grew spontaneously in Central or South American forests, from where this species originates. In about 4,000 B.C. the first cocoa "crops" appeared simultaneously in Central America and the tropical forests of the Yucatan and Guatemala. The Criollo (cocoa variety with aromatic beans containing 50% fat) cultivated today is a result of this first wave of domestication. Their big white beans, containing few polyphenols (basic colorant molecules), can be used for human consumption with barely any processing required other than drying.

No vestiges of plantation have been found among South America's Andean population before the Spanish conquest. The climate's greater humidity, which makes drying extremely difficult, could be the reason why these beans were not used in this region. The limitation of cocoa cultivation area in the north of the Andes during the initial cocoa cultivation phase is perfectly in line with the almost total absence of the Criollo variety in the Amazon basin. The only Criollo harvested this side of the Andean mountains were in Venezuela, which seem to have been introduced later by Capuchin monks.

Two other major waves of domestication then took place, with the cocoa plants coming directly from the Amazon basin. First came the development of Nacional cocoa in Ecuador, with its geographic spread being limited to that country. Then, much more recently, probably toward the end of the 18th century, the Amelonado varieties were created in Brazil and then dispersed almost all over the world, and will quickly become the main source for cocoa production.

The main stages in cocoa's world conquest were:

1560	Introduction of the cocoa tree by the Dutch in Celebes and Java
1614	Introduction to the Philippines by the Spaniards
1822	Introduction of cocoa trees in the Sao Tome, Principe and Fernando Po islands by the Portuguese
1834-1880	Introduction to Ceylon, India and then Madagascar and the Fiji islands by the British
1871	Introduction of the first cocoa trees on the African continent in Ghana (Eastern Region)
1890	Introduction of the first cocoa trees West of Côte d'Ivoire
1920	Introduction of cocoa trees in Cameroon by the Germans.

At around the same time, in Ghana, cocoa had spread to Kumasi. In 1908, production stood at 20,000 tonnes. Three years later, the country became the biggest world producer. Given the enterprise's success, in 1912, the French imposed intensified cropping in the Indenie area in the country's eastern region. Whereas the British promoted indigenous plantations, the French promoted colonisers. Individual plantations only emerged a few years later, with the advent of migrants from the country's central region, escaping forced crops, and from the West. In 1919, Côte d'Ivoire's eastern region produced 10,000 tonnes as compared to Ghana's 147,000 tonnes (1/3 of world production). Over the following decade, the plantations spread to the West, towards what would later be called the cocoa belt, as well as to the South.

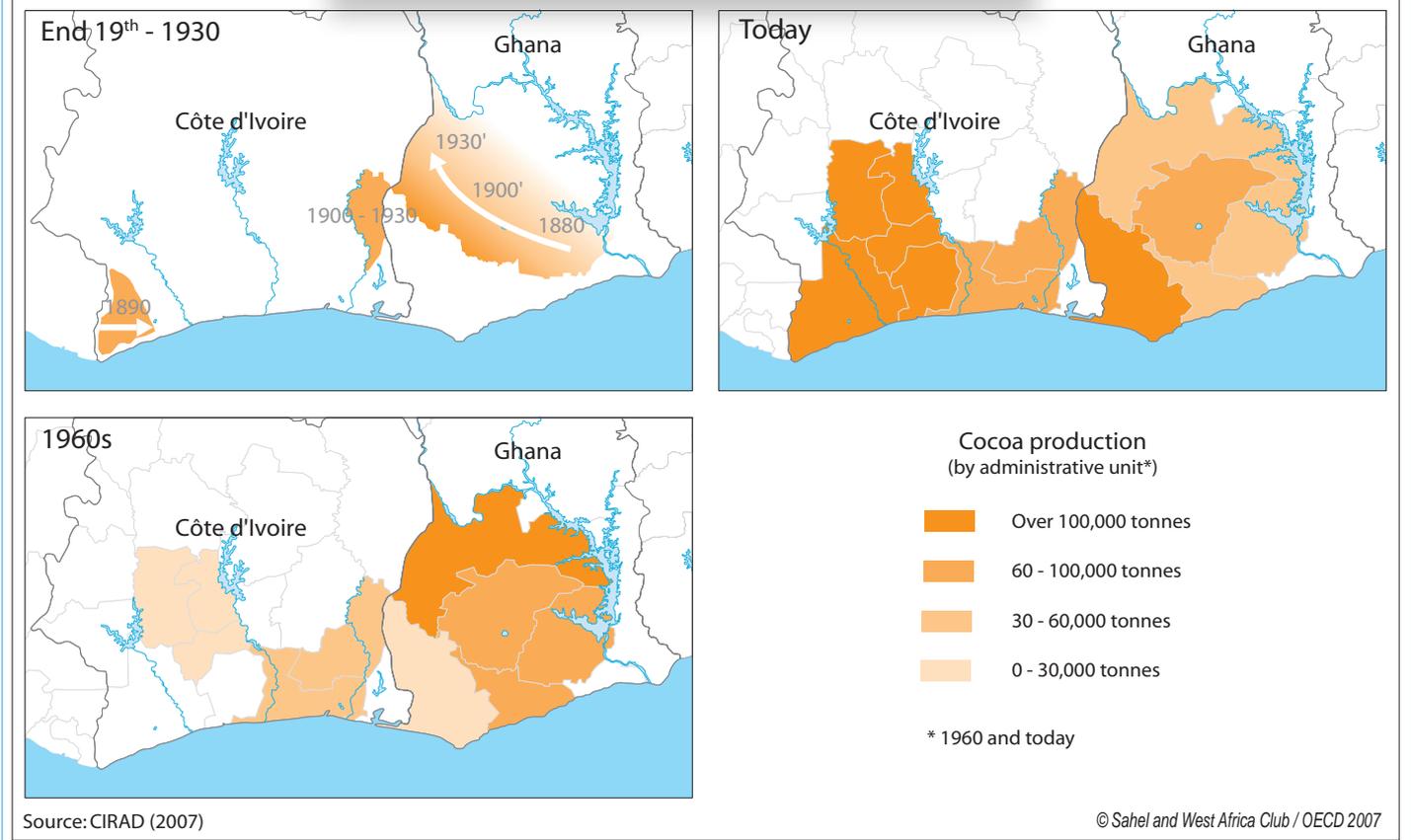
In Ghana, favourable prices and a continuous improvement in transport infrastructure led to the clearing of vast areas in the Brong-Ahafo region, even further towards the west. The forest area was extensively affected. By 1932, production had risen to 260,000 tonnes. Producers had started organising themselves into cooperatives and pressuring the buyers. The Côte d'Ivoire's 32,000 tonnes came almost exclusively from the East. In order to deal with the labour shortage, France attached

six Upper Volta provinces to Côte d'Ivoire assisting in the emergence of a category of well-off native planters, but trading remained in the colonisers' hands or those of the Lebanese-Syrians.

In 1936, despite an excellent harvest (305,000 t), the swollen shoot disease struck Ghana's main production centre. The Administration established the Tafo cocoa station (1938), the second in the history of cocoa plantations following the one in Trinidad, in order to improve cultural control and the variety selection. This station became the WACRI⁸ in 1944, with a branch in Nigeria, only to give way to two national structures following the two countries' independence: the Cocoa Research Institute of Ghana (CRIG) and the Cocoa Research Institute of Nigeria (CRIN). French research emerged much later in Côte d'Ivoire, in the form of the "Centre de recherche agronomique de Bingerville".

8. West African Cocoa Research Institute.

Map 4. Growth of New Cocoa Areas in West Africa

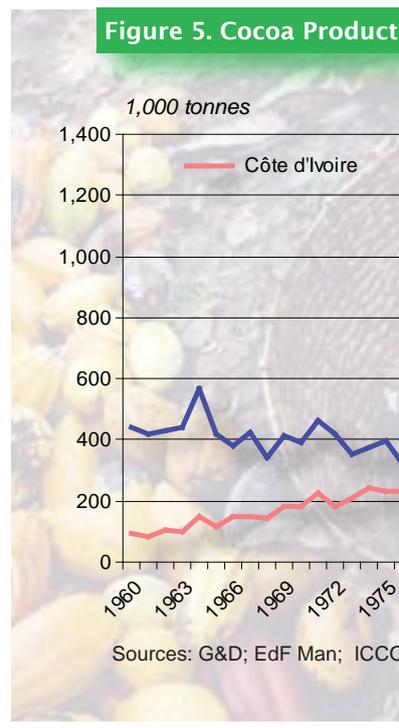


On the eve of the Second World War, cocoa production amounted to 300,000 tonnes in Ghana and 55,000 tonnes in Côte d'Ivoire. During the war, a discriminatory cocoa purchase pricing policy discouraged planters in Côte d'Ivoire. Consequently, an increasing number of plantations were abandoned.

Structuring of the Sector and Establishment of Stabilisation Funds and Control and Monitoring Organisations (1950–1970)

In Ghana, the colonial State guaranteed the purchase of total production. In 1947, the «Cocoa Marketing Board», more commonly known as «Cocobod», was established. It strictly supervised the entire chain: from the supply of seedlings and seeds, sanitary control, access to phytosanitary products, purchase and disposal of the produce, to quality control for exports. In fact, the Cocobod turned into a State within a State. However, swollen shoot disease continued to wreak havoc in old areas while westward expansion accelerated. In 1946, when production fell to 192,000 tonnes, a major uprooting campaign was initiated. Stopped in 1962, it was resumed in the 1980s and 1990s.

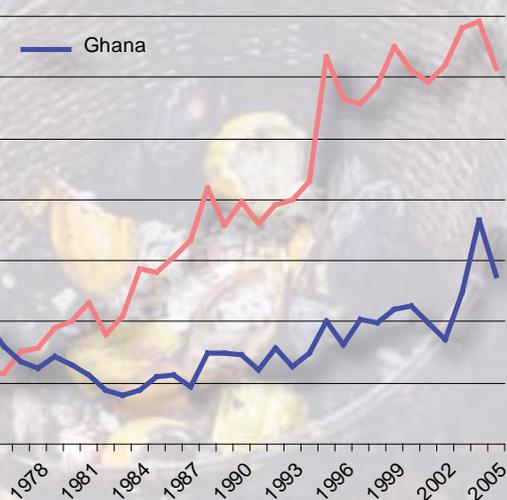
In Côte d'Ivoire, the colonial authorities had to deal with the “Syndicat agricole africain” (SAA, the African agricultural union), established in 1944 and led by the future President of the Republic, Félix Houphouët-Boigny. Forced labour, price discrimination and mandatory deliveries



9. The State technical assistance corporation for farm modernisation in Côte d'Ivoire.
10. However, the Caistab plays a role that is essentially limited to establishing price lists.
11. It is estimated that 50% of foreigners left the country. See the chapter on "Migration" in the Atlas on Regional Integration in West Africa.
12. Ghana and Côte d'Ivoire established a new regulatory and control system to defend their producers, but it aroused the Bretton Woods institutions' suspicions.



Production Trends in Ghana and Côte d'Ivoire



were abolished. Stimulated by high world prices, the economy of native plantations rapidly expanded. The cocoa producing area stretched towards the West. In 1955, France set up a Stabilisation Fund.

Until the early 1960s, high world prices stimulated the increase of the area under cocoa in both countries. When Ghana gained its independence in 1957, private cocoa buyers disappeared in favour of State-controlled cooperatives. In 1960, in Côte d'Ivoire, the *President-Planter* Houphouët-Boigny said, "la terre appartient à celui qui la cultive" (the land belongs to those that cultivate it). The land-rush that ensued was triggered as much by farmers as by agro-processing industrialists (palm, rubber, fruit cultivation, etc.) The "Société d'État d'assistance technique pour la modernisation de l'agriculture en Côte d'Ivoire"⁹ (SATMACI) was then set up to provide training to extension workers and to promote producers' groups in order to facilitate access to equipment and inputs. In 1961, the two countries accounted for 43% of world production with respectively 81,000 and 417,000 tonnes. Indeed, the State maintained strong control over production through the Cocobod in Ghana and the CAISTAB in Côte d'Ivoire¹⁰.

The drop in world prices in the 1960s provoked a real crisis in both countries. In Ghana, despite a peak in production with 500,000 tonnes in 1964, the crisis led to a general decline and prompted the Cocobod to re-introduce a dose of liberalism with the return of private buyers.

The Era of Reforms and Liberalisation (1970 to date)

In 1969, the mass expulsion of foreigners (Aliens Compliance Act¹¹) reduced the availability of manpower and management skills in Ghana. In the 1970s, the deterioration of plantations and the road network, along with fraudulent exports, led to a further drop in production despite a significant hike in world prices. The State tried to deal with the situation, in vain, by funding the inputs and labour necessary to set up plantations. On the other hand, Côte d'Ivoire took in many of the workers expelled from Ghana and continued its unstoppable growth, drafting an aggressive cocoa policy (free supply of improved seedlings, loans and subsidies). From 1977 onwards, it became the world's biggest producer (see Figure 5).

The 1980s saw the emergence of two new significant producers at world level - Indonesia and Malaysia (see Figure 6) - while world prices continued their downward trend until the mid-1990s. Regulatory and support mechanisms for producers rapidly ran out of steam: budget restrictions, layoffs in production, outreach and research support structures, followed by competition between the Cocobod and private enterprises (1993) and the CAISTAB's bankruptcy in 1999 (see Box 4).

Thereafter, multinationals began to dictate conditions to the entire sector, leaving planters with no choice but to accept the price offered¹². Eager to better control the quantity and quality of their supplies from

Box 4. The Liberalisation of the Cocoa Sector in Côte d'Ivoire and its Consequences

Until the late 1970s, cocoa was at the heart of the “Ivorian miracle”. High world market prices enabled the State to garner considerable profits. The Stabilisation Fund (CAISTAB) set the purchase prices for planters, collected taxes and compensated for any decreases in the prices paid to exporters while continuing to pay a guaranteed price to planters. The income from cocoa was redistributed according to tacit rules of a political, category-wise, regional and ethnic balance and funded the infrastructure.

In the 1980s, the country was hit hard by the deregulation of international commodity markets, the establishment of global private groups and the advent of new Asian competitors (Indonesia and Malaysia). Prices fell drastically in 1985. In 1989, after having vainly attempted to raise prices by stock-piling, the country was forced to initiate a liberalisation process within which the high point was the dissolution of the CAISTAB in 1999. Thereafter, major international groups (Cargill, Archer Daniels Midland and Barry Callebaut) began to dictate terms to the entire sector. In the end, the plantation price was halved and planters found it increasingly difficult to access credit. Local exporters gradually disappeared from the scene.

A new control mechanism that could meet the donors' requirements was set up. It included a series of bodies: the “Autorité de régulation du café et du cacao” (ARCC – Coffee and cocoa regulatory authority), the “Bourse du café et du cacao” (BCC – Coffee and cocoa stock exchange), the “Fonds de régulation et de contrôle” (FRC – Regulatory and control fund), the “Fonds de développement et de promotion des producteurs de café et cacao” (FDPCC – “Coffee and cocoa producers' development and promotion fund), the “Fonds de garantie des coopératives café-cacao” (FGCCC – Coffee-cocoa cooperative guarantee fund) and the “Association nationale des producteurs de café-cacao de Côte d'Ivoire” (ANAPROCI – National Côte d'Ivoire coffee-cocoa producers' association). Today, farmers, who are trying to organise themselves in order to protect their income, criticise the complexity and operating costs of this mechanism. Recent cases of clandestine flows of Côte d'Ivoire cocoa to neighbouring countries illustrate this problem very well.

planters, they found ways to get closer to them (credit, pre-financing of harvests). They also set up processing and semi-manufactured product units. With limited means, local competitors found themselves unable to fight them, thereby leading to a decrease in the number of actors in the sector. Finally, despite a theoretical purchase price fixed at the start of the agricultural season, small producers experienced a drop in income, especially in Côte d'Ivoire.

III. Prospects

The sensory¹³ and physical properties of West African cocoa make it a much sought-after product¹⁴, although overall production quality seems to be declining. Combined with production and quality control strategies, they make it possible to obtain higher prices, as is the case with Ghana's cocoa, considered the regional benchmark. However, a number of problems weigh heavily on the sector's future.

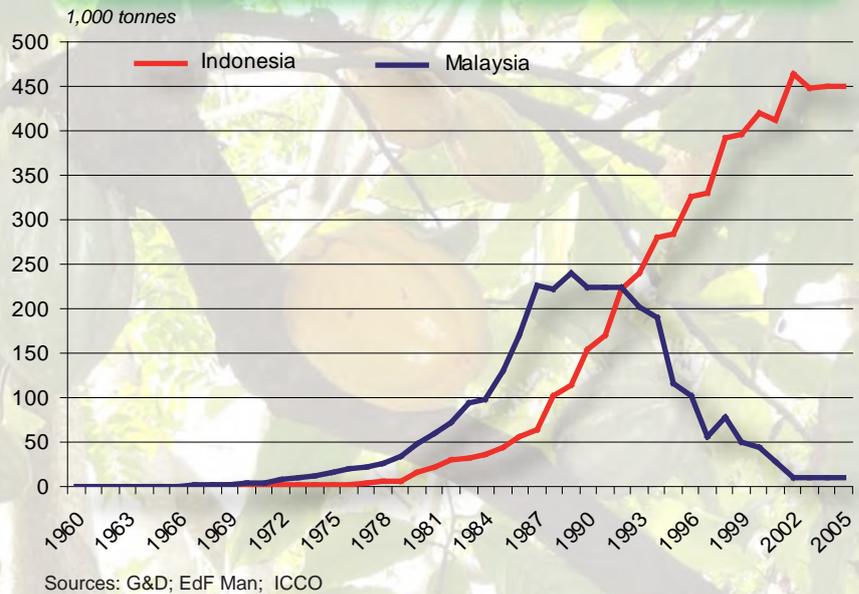
First and foremost is the issue of pests and diseases. Mirids, which are small insects, attack the fruit and branches. Once planted, relocating



13. Characteristics of a product perceived by the sensory organs: taste, smell, appearance and consistency.
14. Cocoa from Ghana and Côte d'Ivoire is known for its strong aroma, Cameroon's cocoa is reputed for the natural red component it contributes to the preparation of blends.



Figure 6. Cocoa Production Trends in Indonesia and Malaysia

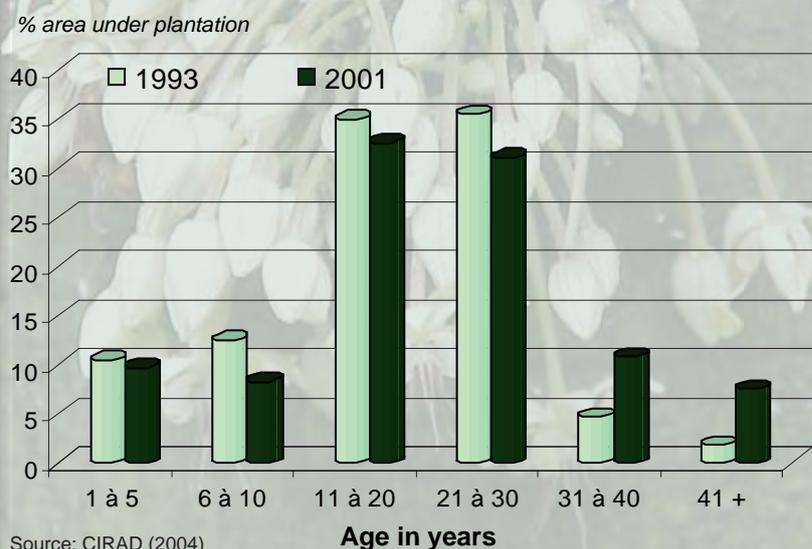


or replanting plantations becomes very difficult. Black pod¹⁵ is also widespread. In these two cases, chemical pest control methods are available, but their use is dependent on purchase prices and the producers' technical skills. Further, swollen shot has entered eastern Côte d'Ivoire after wreaking havoc in Ghana and the only known means of control is uprooting and burning infested trees.

Ageing plantations are another problem (see Figure 7), combined with decreasing soil fertility¹⁶. Moreover, this problem goes hand-in-hand with the ageing of the producers' population: land pressure makes land inheritance and know-how difficult while other (food and cash) crops are more financially profitable. Finally, limited resources

15. Because of causal fungus, whose aggressiveness may vary from one region to another, it could lead to production losses that may even exceed 90% in extreme cases.
16. Because elements inherited from forests that no longer exist have been consumed and crop rotation is not practiced.

Figure 7. Plantation Ageing Trends in Côte d'Ivoire



for producers' training curtail the dissemination of best practices and superior quality cocoa production.

In the years to come, West African production could decline. Other regions, particularly Asia, may be able to benefit from the favourable growth prospects of world demand. However, there is still some room for manoeuvre.

3.1 Intensification – But to What Extent?

West African cocoa's erstwhile growth was essentially due to the occupation of accessible forest areas favourable to its cultivation (see Table 1). Without speaking of sedentation as such, farmers' migration to regions where forest resources are still available are now quite limited. In the future, improving production merely by increasing the cultivation area will be harder to accomplish.

Table 1. Cocoa Acreage Trends in West Africa from 1960 to 2004

Country	Hectares in 1961	Hectares in 2004
Cameroon	300,000	460,000
Côte d'Ivoire	250,000	4,000,000
Ghana	1,668,000	1,800,000
Liberia	2,500	9,000
Nigeria	700,000	800,000
Sierra Leone	10,000	32,000
Togo	30,000	60,000
TOTAL	2,960,500	7,161,000

Sources: FAOStat, ICCO and survey-based CIRAD estimations (2003-2005)

In traditional cocoa growing regions, the consumption of forest rent¹⁷ coupled with using land for cultivation over many years (sometimes for over 40 years) has led to a gradual decline in soil fertility. There are still a few potential areas where forest land could be cleared and cultivated, especially in Nigeria and Cameroon. However, any strategy aimed at opening up new pioneer farming areas will come up against environmental conservation and biodiversity issues to which decision-makers are increasingly sensitive, keeping in mind the social and economic aspects associated with handing down land.

If West Africa wishes to retain its position as the world's biggest cocoa producing region, intensification is the only way out. It would call for considerable efforts at conserving, if not at improving soil fertility and applying high-performance farming processes. Such modifications will require the acquisition of new agro-forest management skills – fundamental for cocoa cultivation – and knowledge about the measured use of pesticides and fertilizers. The socio-economic and environmental contexts should, however, dictate how these measures are applied.



17. When land and tropical forest are accessible at low cost, investment costs in perennial crops are reduced because forests often provide rapid growth guarantees for such low-cost crops (low initial parasite pressure, organic matter availability, protection against wind and vagaries of the weather, etc.). Yields are often high during initial cycles and so are incomes. That is what is known as "forest rent" (la rente forêt) (F. Ruf).



18. Defined by the number of grains per 100 g, the granulometry of cocoa beans is considered acceptable if it stands at a minimum of 100 grains/100 g. At lower values, it is favoured by industrialists who prefer bigger beans as the wastage (shell) ratio is lower. At values higher than 120 beans/100 g, cocoa is considered to be below standard or off-grade.
19. In particular, products labelled "fair trade certified" still suffer from quality variations.
20. <http://europa.eu/scadplus/leg/fr/lvb/l66044.htm>



Another both agronomic and technical alternative is also possible. A wide range of insect- and fungus-resistant as well as productive varieties are now available. With these more resistant varieties, significant productivity gains are possible provided that the soil fertility issue is adequately addressed.

3.2 Quality or Quantity?

The sector's liberalisation and strong demand have stimulated production. All which is produced is purchased and it is by increasing purchased volumes that buyers are able to augment most of their profit margins. However, this has caused a decline in the West African cocoa quality that no incentive- and remuneration-based policy has attempted to counter.

The main quality criteria are based on physical parameters – granulometry¹⁸ and percentage of defects – such as mouldy, non-fermented or broken beans. In fact, cocoa beans are not very well fermented and dried and do not keep as well. To reduce risks and losses or, to put it more simply, avoid having to transport poor quality cocoa or by-products not used in the chocolate industry (pods, defective beans, etc.), the major international groups have set up procurement systems closer to the planters and invested in cocoa bean processing within the producing countries.

At the same time, specialised high value-added markets have been developing. In most cases, access to niche markets is based on more direct contracts between buyers and producers on the basis of specifications, introducing the notion of negotiations in transactions. This does not necessarily translate into quality improvement¹⁹ but does nonetheless make it possible to highlight differences between products. The recent emergence of geographical indications and designations of origin in this regard is encouraging. Some initiatives have been set up in Ghana, Cameroon, and Togo and are also emerging in Côte d'Ivoire, essentially related to fair trade and organic cocoa²⁰ for which demand is growing significantly. The resulting increase in value owing to these quality attributes can be quite lucrative for producers. However, the distribution and utilisation rules for such value added differ, from a total repayment of the bonus to producers to the constitution of a fund solely for shared use.

In this context of market diversification, flexibility in cocoa management coupled with adaptable and accessible technical requirements contribute to West Africa's competitive edge over other regions with a higher break-even point and greater constraints. But to preserve its dominant position, the region must adopt policies to make the cultivated area more profitable, encourage the conservation of resources and improve labour productivity.



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Statistical Data Sources

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<http://www.copal-cpa.org/>
- ED&F Man** <http://www.edfman.com/Cocoa.php>
- FAO** <http://faostat.fao.org/site/526/default.aspx>
- Federation of Cocoa Commerce (FCC)**
<http://www.cocoafederation.com/about/index.jsp>
- International Cocoa Organization (ICCO)**
<http://www.icco.org/>
- UNCTAD** <http://r0.unctad.org/infocomm/anglais/cocoa/market.htm#cot>

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