

The Cocoa Agri-Processing Opportunity in Africa



African Center *for* Economic Transformation

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1. Executive Summary

Cocoa represents the archetypal agro-processing challenge: African countries dominate cocoa bean production, representing 69% of total volumes in the 2009/10 season, but have a far lower share of basic intermediate processing (also known as ‘grinding’) and a negligible share of the manufacture of chocolate. As a result, African countries dominate a \$9bn a year commodity market, while forgoing a consumer goods production opportunity estimated to be worth \$87bn a year.

The cocoa value chain is characterized by a highly consolidated and vertically integrated group of players that spans multiple activities, from the initial grinding of beans to the industrial manufacture of chocolate (or ‘couverture’) and, in some cases, through to the final manufacture of retail chocolate. For African policy-makers, any substantive policy will need to take into account how to work with these players to influence the future growth and distribution of global processing and manufacturing.

OVERVIEW OF THE VALUE CHAIN AND AFRICA’S POSITIONING

We divide the cocoa value chain into four sectors, each with different economic and competitive dynamics:

- **Cocoa Bean Production:** this is the production of raw cocoa beans, which is estimated to be a \$9bn a year agri-commodity market. There are three main growing regions – Asia (in particular Indonesia), West Africa and Latin America. Beans from each region have a characteristic flavor profile and typically a mix is used in manufacturing chocolate to create the required taste. In this area, West Africa is a dominant player, accounting for 69% of production volumes in the 2008/09 growing season. Production is largely undertaken by smallholder farmers, typically with less than 5 hectares of land, and who are therefore ‘price takers’ and have little influence over the price that they can realize.
- **Intermediate Chocolate Manufacturing:** this is the grinding of cocoa beans to create several intermediate agri-commodities: cocoa butter, cocoa powder and liquor (a mixture of cocoa powder and butter), as well as husks and shells which have some limited value outside cocoa production. We estimate the value of this sector to be \$28bn in 2008. Players in this sector are termed ‘grinders’. This sector is characterized by two key divides. The first is geographical: there is a divide between ‘origin processors’ – grinders located in a country that produced cocoa beans – and other processors that are located typically in major chocolate consumption regions. The second is by ownership or level of vertical integration: there are several players such as Archers Daniels Midland and Cargill which trade multiple agro-commodities and undertake intermediate processing across a range of them, including cocoa, which account for 28% of volumes; there are also players that are largely involved in industrial chocolate manufacturing and retain some (24%), (12%); the remaining 36% of volumes is characterized by local producers and niche players. Within African countries, Cote d’Ivoire and Ghana are the only scale players in grinding, accounting for 16% of world grinding volumes.
- **Industrial Chocolate Manufacturing (‘Couverture’):** between grinding and making the final product, industrial chocolate manufacturers produce large batches of chocolate called couverture, according to very strictly defined recipes specified by their clients. Cocoa is only part of the overall product, which also requires the addition of sugar, milk solids, fats (which may be from cocoa butter or vegetable) and other additives. This is a highly capital intensive and high-precision process that involves substantial service level commitments, given that couverture is typically transported in liquid form and has a shelf life of typically only 6 days. As a result, couverture manufacturers tend to be located in the same regions as

chocolate manufacturers. Couverture production is, like grinding, characterized by several vertically integrated manufacturers, some of which are integrated with grinding and have little to no focus on chocolate manufacturing (such as Barry Callebaut) and others which are part of a chocolate manufacturer's operation and may sell limited quantities on the open market (such as Kraft/Cadbury's facilities). Beyond niche chocolate manufacturers such as Omahene and government run players such as the Cocoa Processing Company, both in Ghana, there is very limited production of couverture in Africa.

- **Retail Chocolate Manufacture and Distribution:** Couverture converted into final consumer products such as 'count line' chocolates (the single packaged bars available in convenience outlets) and other packaged products. Beyond the physical production processes involved in creating the final consumer product, retail manufacturers also undertake a substantial program of product development that includes basic research into consumer tastes and preferences and the consequent development of new products such as aerated chocolate (used in products such as Aero and Wispa). Chocolate production is an \$87bn a year industry, with a small number of major players such as Mars, Nestle, Kraft/Cadburys, Ferrero and Hershey which locate production facilities in consumption markets largely in North America and Europe and accounted for 67% of the market in 2007.

In some respects, cocoa is an example of success for African policy-makers that aim to foster growth in value addition: while it is difficult to influence chocolate manufacturers to locate production assets in Africa without a material consumer market for their product, countries such as Cote d'Ivoire and Ghana have recently become major grinders of cocoa beans in-country. This has enabled them to move from focusing on the production of cocoa beans, which constitutes a \$9bn industry, to capturing a greater share of the processed cocoa sector, a larger market worth up to \$28bn.

OPPORTUNITIES AND CHALLENGES FOR DEVELOPING THE AFRICAN COCOA SECTOR

However, much of the rest of the value chain remains largely unaddressed. Countries such as Cote d'Ivoire and Ghana have demonstrable expertise and success in influencing the industry through the use of incentives. However, the lack of local demand and aspects of path-dependency amongst the major current producers, who already have substantial chocolate production assets located in consumption markets, are important areas that need to be addressed in future policy-making in order to lay the foundation for sustainable and transformative growth into new sectors.

COCOA BEAN PRODUCTION

In the area of cocoa bean production, policy-makers and traders of African cocoa need to address the fact that their trading relationships are with the slowest growing segments of the global market – North America and Europe, where most of the value growth in chocolate consumption is from new product innovation rather than volume.

Achieving consistent growth in production volumes is also a challenge. The major producing countries of Ghana and Cote d'Ivoire have experienced contracting volumes, as a result of the ageing tree stock (which leads to declining yields), diminishing interest from younger farmers that perceive cocoa cultivation as an unattractive and risky lifestyle, and a shift in some agricultural assets away from cocoa and towards other crops seen as delivering more consistent returns such as rubber.

Over the long term, however, we are optimistic on the prospects for the African cocoa bean production sector. As such as dominant player in the global market, African production cannot decline without a significant price response which eventually must address some of the challenges of poor economic incentives at the farm-level if

they are reflected in higher farmgate prices. Countries such as Cameroon have demonstrated a capability for publicly-directed initiatives such as distributing high-productivity hybrids to farmers to positively impact production volumes. Several initiatives to certify cocoa production and encourage sustainable agriculture are underway, which amongst other objectives are aimed at supporting supply growth, but will face challenges in cost effectively certifying and monitoring the long-tail of small growers of cocoa. As a major player in this sector, therefore, African countries have an attractive opportunity to fill the growing supply gap and capture substantial additional value from a more supply constrained cocoa industry, which can also lay the underpinning for greater local value addition.

GRINDING

African players in grinding face greater competition in the grinding sector. As for cocoa bean production, the expected relative stagnation of Africa's traditional export markets in North America and Europe position it poorly versus other fast growing regions such as Malaysia, which is the dominant supplier of intermediate cocoa products to a faster-growing Asian couverture and chocolate market. Additionally, West African, Indonesian and Malaysian governments are targeting aggressively the growth of cocoa processing in their respective regions, causing processing capacity to outpace forecasted growth in consumption. This threatens the profitability and even economic viability of the sector.

The typical issues that drive higher input costs for prospective industrial development in Africa – such as energy costs, the cost and reliability of logistics, and the lack of depth in local talent pools – are not the key barriers for the development of grinding in the region. In fact, the cocoa sector is an example of the successful use of sector incentives and export processing zones in areas such as Tema and Abidjan to manage these challenges. Other barriers, such as tariff escalation for intermediate processed goods or the lack of access to competitive financing for local players can be neutralized through targeted incentives.

The more important constraints centre on the ability to compete with non-origin processors, located at key cocoa trading hubs, that are able to access the full spectrum of cocoa varieties at globally competitive prices: origin processors are typically tied to only local varieties, which constrains their ability to achieve the taste and color specifications of clients; are subject to more volatile supply; and are unable to take advantage of arbitrage opportunities that exist at hubs.

There is therefore a growing opportunity for the development of a West African hub for cocoa bean aggregation to collect volumes from multiple regions and serve the fast growing regional grinding sector. Such hubs enjoy substantial economies of scale and require sufficient critical mass to be viable, creating a potential role for the public sector to either subsidize as an anchor investor or directly create such a hub, before an eventual transition to private sector ownership.

COUVERTURE AND RETAIL CHOCOLATE MANUFACTURE

The Couverture and Retail Chocolate Manufacturing sectors are closely linked, and in some respects can be treated as a single overall challenge in terms of eliminating barriers to entry and fostering growth in local value addition. African countries currently lack a strong market rationale to encourage players to invest in regional production, and also lack the broader set of capabilities required for success.

Success in branded chocolate manufacturing relies more on excellence in new product development, capturing customer insight and branding, than in management of labour and raw material input costs. Proximity to a substantial consumer market and the availability of a highly skilled workforce are therefore critical. Although a fast-growing market, Africa as a region will not warrant an asset-based strategy for retail chocolate production to

service the region for the medium term, and there is only a weak case for a produce-to-export rationale for investment.

Couverture manufacturers experience substantial advantages from being located close to their clients in retail chocolate production. Cost advantages from bulk logistics may be significant¹, but the ability to avoid remelting for retail chocolate manufacturers can be just as important. Beyond input costs issues, the ability to integrate into branded chocolate manufacturers supply chains with just-in-time delivery is critical, as manufacturers tend to keep very lean stocks (given space requirements and the short life of liquid couverture); the ability to send back batches for reprocessing to meet requirements is also important for users' peace of mind. Therefore, couverture production assets tend to be based close to retail production.

Policy-interventions that address the demand issue for chocolate manufacturers are therefore a central part of a successful package of interventions. Given very low per capita consumption levels in the region, creating an aggregated addressable market for prospective players is therefore critical. African countries have started to make headway through the formation of COMESA and ECOWAS; driving forward the trade liberalisation agenda is therefore a critical precondition for successfully attracting sustainable higher value addition in cocoa.

IMPLICATIONS AND NEXT STEPS FOR POLICY MAKERS

In order to develop a robust cocoa value addition agenda, policy-makers need to develop country-level and regional understanding around the vertically integrated economics of production, identify in conjunction with the industry where the key pain points are and move beyond the discussion around incentives and towards a program of addressing the fundamental challenges, and identify key policy bottlenecks and trade-offs.

While it is beyond the scope of this report to provide a detailed policy agenda and roadmap for the sector, it is clear that there are some important sources of comparative advantage and expertise that policy-makers can leverage, and some key areas to focus on to drive a transformational change in the role of origin processors in the sector.

African countries have some important strengths and sources of comparative advantage in the cocoa sector. The strong position in global cocoa bean production is both a potential platform for further growth in itself given medium term prospects for price growth, and is partly protected given the core requirement to have West African cocoa flavors as a core part of most chocolate recipes. Policymakers in the region have demonstrable expertise in the use of incentives to attract investment at the country level.

Going forwards, coordination across the region is the greatest opportunity to support continued growth in value addition, with scope for intervention to support the initial development of a cocoa trading hub to allow origin processors to compete on an equal footing with players that have low cost access to bulk volumes of the global variety of beans. Regional trade liberalization to create regional-level addressable consumer markets is a precondition for the development of retail chocolate and couverture production.

This report intends to contribute to the extensive knowledge base on the cocoa sector by focusing on the structure of the whole cocoa value chain. This report provides perspective on the distribution of value across the different stages of production, the trends influencing the market, and how African policy-makers can respond to ensure increases in Africa's share of the global cocoa opportunity.

¹ It is not clear that the relative cost of logistics versus the relatively high cost of couverture is significant for all users. A UK Competition Commission investigation into the UK couverture market found a broad spectrum of views amongst users as to how sensitive their purchase decisions were to logistics costs, and therefore how captive they were to UK vs. Continental European producers.

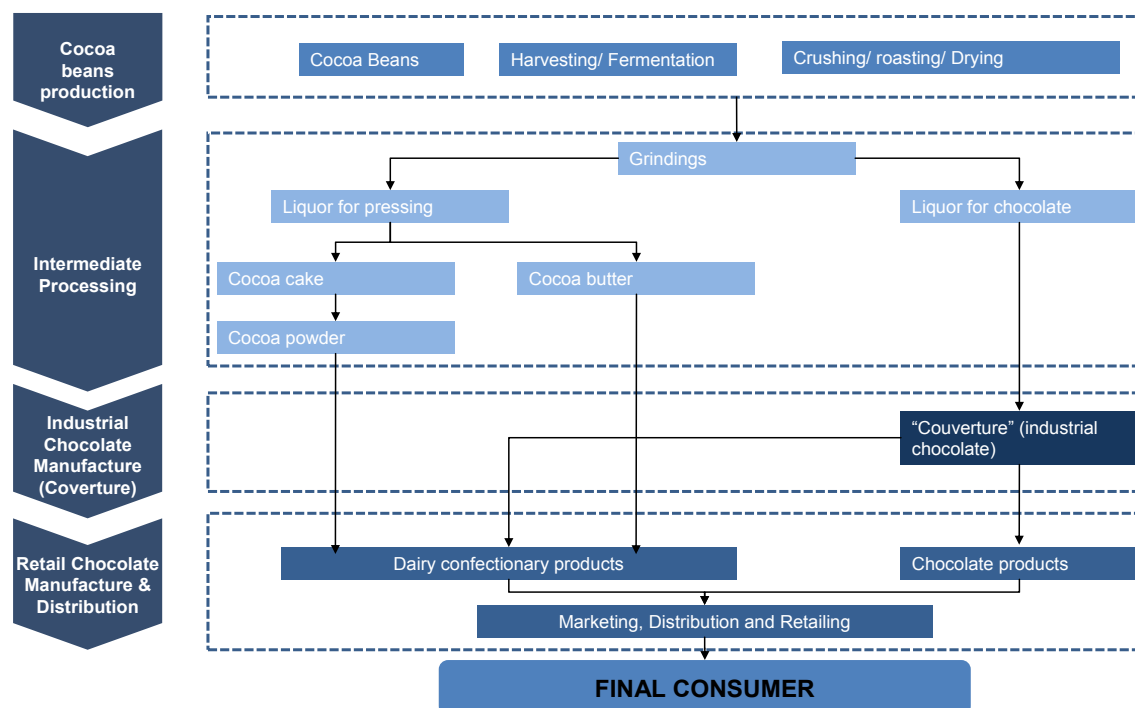
2. Overview of the Cocoa Value Chain

THE VALUE CHAIN – FROM COCOA BEAN TO THE FINAL CONSUMER PRODUCT

Cocoa is used largely for the production of chocolate, which takes place through four main stages:

- **Cocoa bean production:** Cocoa beans are produced as fruits of the cocoa tree in tropical, rainy climates in a narrow band within 20 degrees north or south of the equator. Fruit pods can be harvested throughout the year, although there tends to be a main crop and an intermediary or ‘mid crop’ season, which in Cote d’Ivoire are October to March and May to August respectively. Cocoa is harvested by cutting ripe pods from the trees, breaking them open and extracting the seeds. A pod typically contains 30-40 seeds. The seeds are then allowed to ferment for 2-8 days before being dried, bagged and shipped to cocoa processors.
- **Intermediate Processing:** Cocoa beans are converted into nibs, liquor, butter, cake and powder by ‘grinders’. This involves cleaning the beans, roasting them – which may happen either before or after the shell is removed – and winnowing them to reveal the inner cocoa bean, referred to as a ‘nib’. Nibs are ground into a paste of fats and solids called ‘cocoa liquor’. Some liquor is used directly in the production of chocolate, and it constitutes the first main saleable product produced by grinders. A portion of the liquor is separated further through hydraulic presses into cocoa butter and a residual ‘cake’. The cake is then ground into a fine powder. Cocoa powder is used in the confectionery and baking industries, while cocoa butter is used largely in the manufacture of chocolate, with some marginal applications in pharmaceuticals and cosmetics. The level of fat content largely determines the choice of end use of cocoa powder, while the type of technology used to extract cocoa butter determines product quality and thereby its end use, with highest quality cocoa butter used for food applications.
- **Industrial Chocolate Manufacture (‘Couverture’):** Cocoa butter and liquor are combined with other ingredients such as vanilla, sugar, milk powder and emulsifiers to create a smooth chocolate dough, which is then refined and put through a ‘conching’ machine to produce couverture. The couverture is then either used in-house by branded chocolate manufacturers that have vertically integrated industrial-to-retail production operations, or sold on the open market. Open market sales are made to a mix of players who may not have in-house couverture production capacity, or to integrated players that satisfy some of their retail manufacturing needs through purchases of couverture from other players. Couverture tends to be transported to users in liquid form in 20 ton tankers heated at 45°C, but occasional users typically intake couverture in solid form as chips, drops or blocks. While solid couverture can be stored with few restrictions, liquid couverture has a life of approximately 6 days before quality diminishes.
- **Retail chocolate manufacture:** Couverture is then reworked to make a broad variety of chocolate confectionery products. Typically, couverture is tempered (i.e. cooled under carefully controlled conditions) to create the desired texture of the chocolate. It is then converted into the finished product through a combination of molding, coating, layering and cutting. Finally, it is packaged and distributed for sale. Beyond the physical production processes involved in creating the final consumer product, retail manufacturers also undertake a substantial program of product development that includes basic research into consumer tastes and preferences and the consequent development of new products such as aerated chocolate (used in products such as Aero and Wispa).

FIGURE 1: THE COCOA VALUE CHAIN



African participation in the cocoa value chain is chiefly focused on production of cocoa beans, and the continent is the dominant producer with 69% share in volume terms. However, cocoa bean production accounts for a relatively low share of the overall value of chocolate, constituting an industry of \$9bn versus a global chocolate industry of \$87bn.

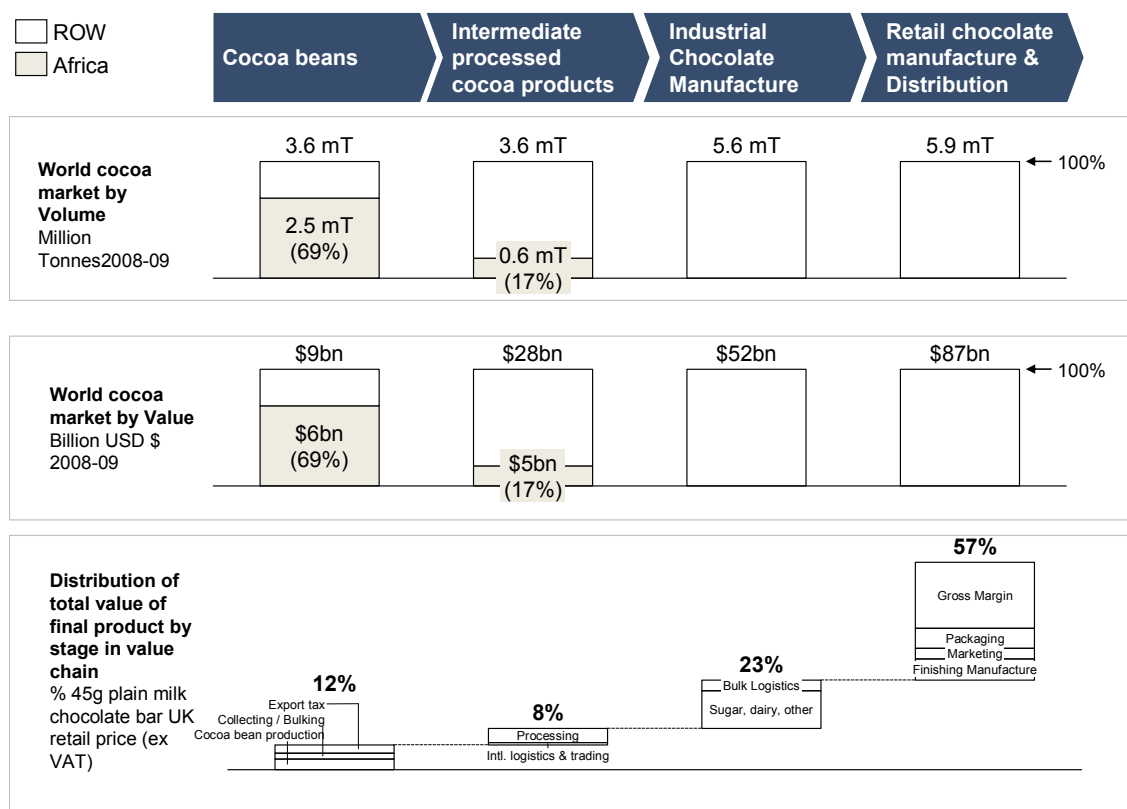
Participation in intermediate processing is substantially lower; of the 2.5 million tons of cocoa beans produced, only 0.6 million tons are processed in Africa. At this stage of the value chain, however, there is a substantial uplift in value, with the total global industry worth \$28bn. While Africa has a 69% share of the cocoa bean production market, yielding revenues of \$6bn a year, it has only a 17% share of the cocoa grinding sector, resulting in revenues of \$5bn a year (at prevailing 2008-9 market prices).

Beyond intermediate processing, Africa's contribution to industrial and branded chocolate manufacture is marginal, with the majority of activity traditionally occurring in key consumer markets in the US and Europe, which account for 23% and 49% of global chocolate consumption respectively². More recently, Malaysia's role in this stage has grown in order to service the expanding Asian market.

Tariffs play a significant role in keeping African countries focused on exporting raw beans. For example, the EU levies no duties on the import of raw cocoa beans, but levies a 7.7% and 15% ad valorem duty on cocoa powder and cocoa cake (i.e. cocoa crumb containing butter).

² Based on 'cocoa bean equivalents' which converts dark, milk and white chocolate into the equivalent volume of cocoa beans required to make them.

FIGURE 2: VALUE CAPTURED AT EACH STAGE OF THE INTERNATIONAL VALUE CHAIN



SOURCE(S): World Cocoa Foundation; "World Cocoa Economy," ICCO 2010; Agri-Canada; Industry interviews; Dalberg analysis

THE STRUCTURE OF THE COCOA INDUSTRY

The cocoa industry is characterized by fragmented production of cocoa beans, with the most volume produced by smallholder farmers, and a highly consolidated supply and processing chain, with the majority of scale players active across multiple stages of the value chain.

The majority of exported cocoa beans are handled by a small number of trading houses that include pure traders (e.g. Armajaro, based in London) and integrated traders and processors such as Archers Daniels Midland and Cargill, which are involved in agro-processing across a broad range of agricultural commodities.

Intermediate processing tends to be carried out by traders; the integration of trading and processing allows traders to optimize and arbitrage differences in relative import/export tariffs and relative logistics costs. As a standalone business, intermediate processing also constitutes a substantial opportunity to increase the value of the basic agro-commodity: The blended price of processed cocoa products³ tend to trade at three times the value of cocoa beans, and as a commodity processing business can generate relatively attractive margins of up to 10-12% EBITDA⁴.

³ Based on the International Cocoa Organization's (ICCO) estimate of the blended price of cocoa butter and cocoa powder versus the price of cocoa beans

⁴ Based on Olam's forecasted revenues and EBITDA margin for its new 60,000 ton capacity plant in Cote d'Ivoire, due to start operating in Q1 2012, with forecast utilization of 80%, revenues of \$175m.

Industrial chocolate – or couverture – manufacture is performed by a range of players, including many of the abovementioned vertically integrated trader-processors that have moved downstream into industrial chocolate, branded confectionery manufacturers such as Nestle and Cadbury's, and companies primarily focused only on this activity such as Petra Foods. This area of the cocoa value chain has seen substantial changes in configuration: In the 1990s, branded manufacturers expanded into this activity in order to secure a cost competitive platform for production that could also be used to service other players; more recently this trend has reversed, as players have divested these assets to other industrial chocolate players as a different set of capabilities – one focused on new product development, branding and marketing – became more important to success.

Branded chocolate manufacture is a more consolidated business, with the top 5 global players accounting for more than 50% of the market by value in 2007. Key players include Mars, Cadbury/Kraft, Nestle, Hershey and Ferrero.

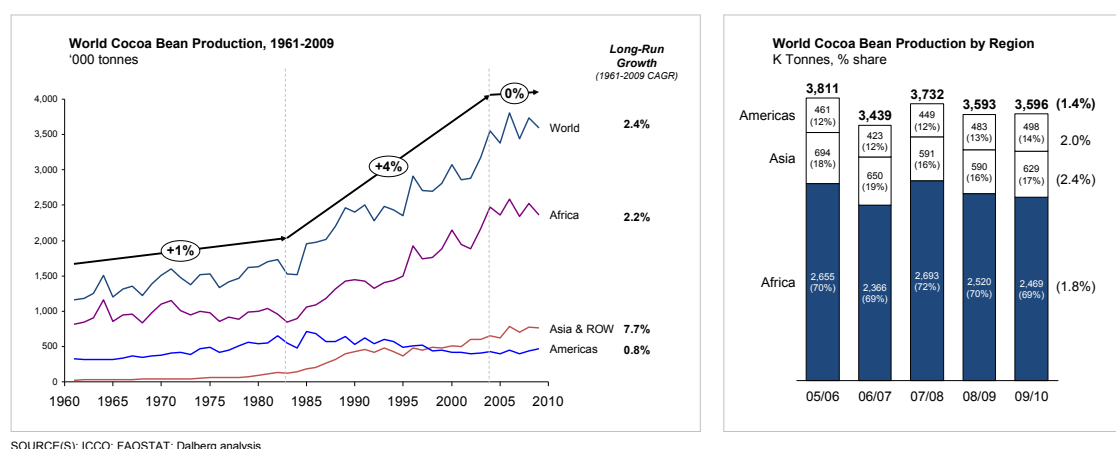
3. The International Cocoa Market

RAW COCOA BEANS

Africa has been the key region for cocoa bean production over the last 50 years and today accounts for 69% of global production. Latin America and Asia are the other main producing regions, with 14% and 17% of global output respectively. Globally, production has grown by 2.4% per annum over the 50 year period, characterized by three main phases:

- **1961-1983:** West Africa dominated world production at about a 70% share, with a gradually declining volume of production due to gradually declining yields. Over this period, global growth was driven by increases in yields in Latin American countries, especially Brazil and Ecuador.
- **1983-2004:** Global growth in production accelerated to 4% per year as West Africa started to increase production, largely through increases in yields, while Malaysia and Indonesia made a concerted entry into the market through government mandated agricultural plans supported by incentives for planting cocoa. Over this period Latin American yields started to decline due to the incidence of Witches' Broom disease, which affects woody plants and trees.
- **2004-present:** World output growth returned to 1% per year, with stagnation from the 05/06 season caused by a combination of stagnating yield – driven by rational neglect by farmers in response to low farmgate prices – and relatively higher returns from planting rubber and palm oil. The growing prevalence of diseases and pests also materially impacted yields, with a particularly severe impact on Asian producers. Most recently, the introduction of an export tariff on cocoa beans in Indonesia, to encourage a shift in the industry towards processing, has had a short-term impact on reducing farmgate prices. African production has started to decline, partly due to a shift in allocation of arable land toward other crops (such as rubber) as farmers respond to crops that are higher priced, are less labor and input intensive or have lower price volatility.

FIGURE 3: GLOBAL COCOA BEAN PRODUCTION

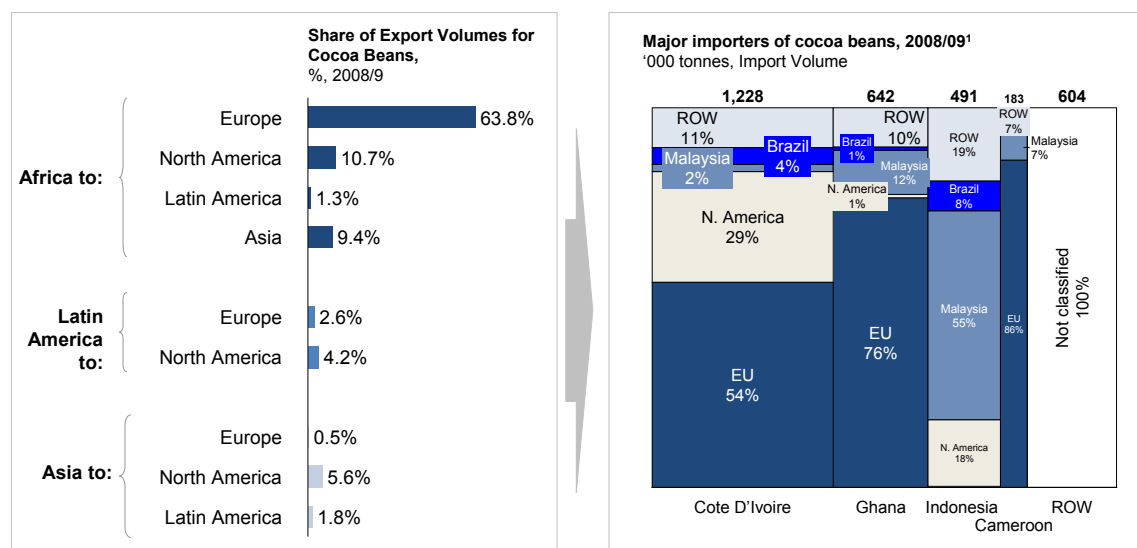


Trade in cocoa beans flows between production sources and the location of grinding facilities. As a result, cocoa is largely an export crop in West Africa, with an 85.2% share of inter-regional trade volumes in cocoa versus a 70% share of production volumes in the 2008/09 season; the majority of Latin American and Asian production remains

in-region. West Africa to Europe trade dominates world flows of cocoa beans, accounting for 64% of trade volumes in the 2008/09 season.

At the individual country level, export volumes are largely generated from Cote d'Ivoire (39.0% of globally traded cocoa bean volumes over the 2004/05-2008/09 seasons), Ghana (20.4%) and Indonesia (15.6%), due to the relatively low level of local grinding options. Each country is characterized by substantial differences in the orientation of its exports of cocoa beans. As shown in Figure 4, total West African production is largely delivered to the EU market, while approximately 55% of Indonesian production is traded with Malaysia.

FIGURE 4: PATTERNS OF EXPORTS AND IMPORTS OF COCOA BEANS

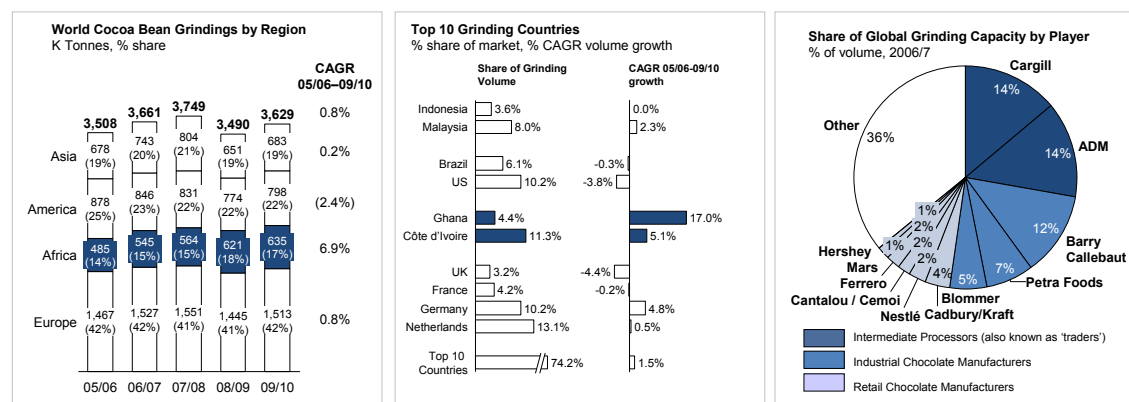


Unlike many other markets for Africa's high value agricultural exports, major emerging market economies such as China and India are not significant growth areas, with China accounting for less than 2% of global imports by volume, and India less than 0.5%. In the 2006/07 season, Brazil shifted from a net exporter of cocoa beans to a net importer, as its growing grinding industry has led to demand outpacing growth in domestic production.

INTERMEDIATE PROCESSING

The first 'industrial' stage of production in the cocoa value chain involves the grinding of cocoa beans to produce intermediate cocoa products (cocoa liquor/paste, cocoa butter, cocoa powder and cake). Over the long run, grinding has tended broadly to track production, with any year-to-year differentials being offset by changes in world stocks.

FIGURE 5: OVERVIEW OF COCOA GRINDING ACTIVITY BY COUNTRY AND BY COMPANY



Grinding has traditionally been conducted close to the final consumption market for cocoa products (predominantly chocolate); while this continues to be the case today, the market is undergoing a structural shift toward processing in cocoa bean producing countries (known as 'origin processing'). Over the last 5 years, Europe and the Americas – the main cocoa consumer markets – have experienced a decline in share of cocoa processing, with the US and UK actually declining in processing volumes and only Germany exhibiting material increases in production over the period.

Changes in the logistics and patterns of vertical integration have also had an important influence on the location of grinding. Branded chocolate manufacturers such as Mars, Hershey, Cadbury/Kraft and Ferrero have divested since the Nineties much of their cocoa processing and industrial chocolate manufacturing capacity in order to focus financial and management resources on new product development, marketing and promotion. Much of this capacity has been acquired since by processors and traders such as ADM, Cargill and Barry Callebaut, the three largest players by production volume and which now account for approximately 40% of global grinding volumes. Players with a particular emphasis on industrial chocolate manufacturing, such as Blommer and Petra Foods, also hold substantial global grinding volumes (at 5% and 7% of volume respectively), while the major branded chocolate manufacturers retain a small share of owned and operated capacity, accounting as a group for 12% of global capacity. Approximately 36% of global grinding is accounted for by smaller, often local players. The trend toward vertical integration of trading and cocoa processing has led to an increased focus on expansion of cocoa processing capacity at ports that represent key logistics hubs.

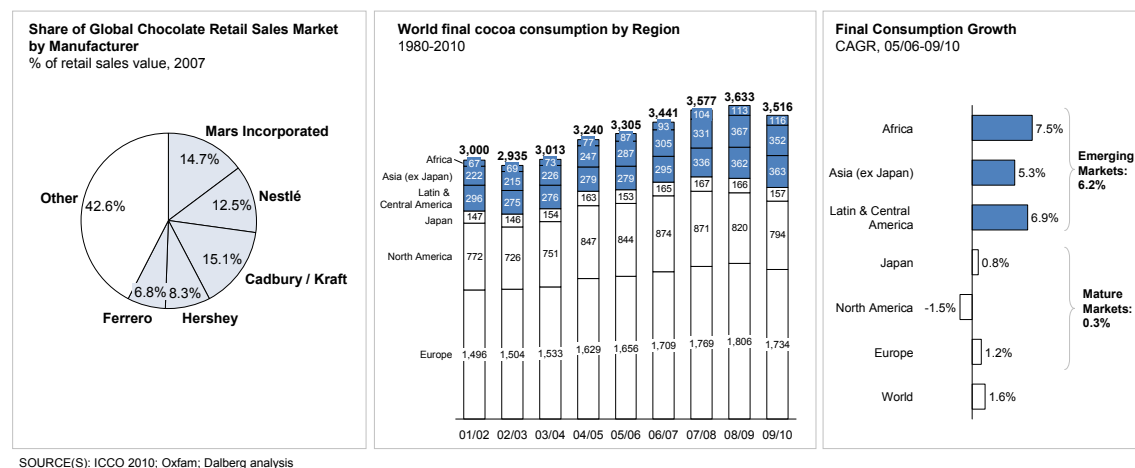
Such hubs exist both in importing countries – such as the Netherlands and Germany – as well as origin countries. Government policies aimed at reweighting the balance of cocoa exports to semi-finished products in cocoa producing countries have encouraged multinational players to invest in origin grinding capacity, most markedly in Cote d'Ivoire, Ghana and Malaysia. A combination of relatively high export taxes levied on raw cocoa bean exports versus processed products in countries such as Cote d'Ivoire, and tax allowances and exemptions in countries such as Malaysia, have created sufficient economic incentives for major processors to locate production facilities in origin countries. As a result, grinding in Ghana and Cote d'Ivoire has grown by 17% and 5% per annum respectively, with Cote d'Ivoire now the second-largest processing country in the world after the Netherlands.

CHOCOLATE MANUFACTURE AND FINAL CONSUMPTION

Chocolate manufacture is divided into two main types of activity: the industrial manufacture of couverture, and the final manufacture of branded chocolate. These are very different businesses, with distinct capabilities and

assets required for success. Couverture can be considered essentially an industrial commodity product, characterized by low margins, where management of input costs and production efficiency are critical. Retail chocolate manufacture is a consumer-goods business that involves frequent cycles of new product development and substantial spending on brand development and marketing to secure and maintain market share. Both couverture and retail chocolate manufacture are highly consolidated markets, with Mars, Nestle and Cadbury/Kraft all having a more than 10% share of the global chocolate market by retail sales value in 2007.

FIGURE 6: OVERVIEW OF RETAIL CHOCOLATE PRODUCTION AND CONSUMPTION TRENDS



The consumption of chocolate is dominated by Europe, which accounted for 1.7 million tons of estimated cocoa bean equivalent consumption⁵ in the 2009/10 season, constituting 49% of world consumption by volume. Key Western European countries of France, Germany and the UK are heavy consumers of chocolate, with the equivalent of more than 3.5 kilograms of cocoa consumed per capita versus a world average of 0.6 kilograms.

Geographical patterns of cocoa consumption are changing. Consumption in the mature markets of Japan, US and Europe have averaged 0.3% growth per year since the 2005/06 season, while emerging markets in Africa, Asia and Latin America have averaged 6.2% growth per year over the same period. Major growth countries include India, Saudi Arabia and Indonesia, which have grown at a respective annual rate of 12%, 13% and 7% per year from 2001 to 2009. Growing per capita incomes have opened up a burgeoning market for consumption of chocolate as an affordable luxury in emerging markets, while chocolate consumption in mature markets has continued to correlate broadly with economic growth. Average per capita consumption of cocoa of 0.03 and 0.02 kilograms in China and India respectively indicates that there remains substantial scope for further growth as per capita consumption continues to catch up to the world average of 0.59 kilograms.

Nevertheless, the major markets of the US and EU will continue to remain important in the medium term. Of the 516,000 tons of increased cocoa consumption over the period in Figure 6, 238,000 took place in the EU. In these markets, a shift in consumer tastes toward premium and high cocoa content dark chocolate has supported cocoa bean consumption growth that has outpaced the overall growth in chocolate volumes. Premium brands that

⁵ Apparent cocoa bean equivalent consumption is the volume of cocoa beans consumed in the form of confectionery, food, beverage and cosmetics. This is calculated by the ICCO as total grindings plus net imports of cocoa and chocolate and chocolate products, in bean equivalent terms. Intermediate processed cocoa products (liquor, butter and powder) are converted into cocoa bean equivalents using standard conversion factors, while chocolate is converted into bean equivalents based on assumptions on the cocoa content of various types of chocolate products.

emphasize their single-origin cocoa content have led the market in terms of growth at more than 20% per year, while organic and dark chocolate have grown at 20% and 15% per year respectively.

PRICES

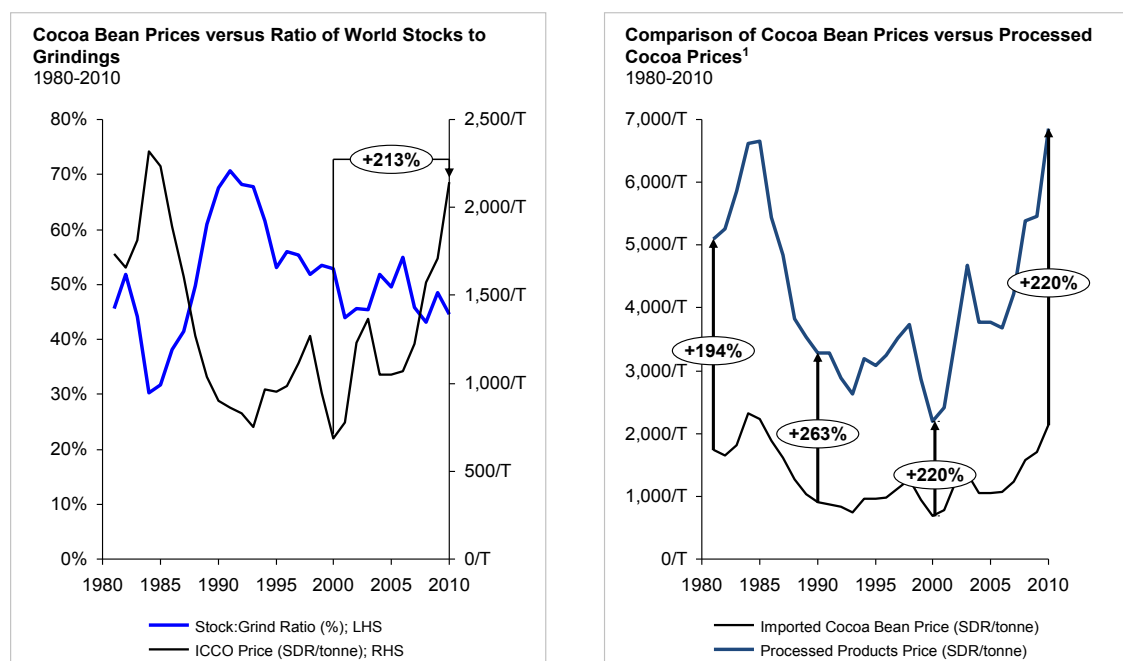
Cocoa prices are volatile. Since the 1980/81 growing season, prices for cocoa beans, measured by the ICCO international index price, have varied from a peak of 2320 SDR / ton⁶ in 1984 to a low of 685 SDR / ton in 2000.

Over the medium term, the prevailing spot price for cocoa beans is determined by the stocks of cocoa beans relative to the volume of grinding. This “stock-to-grind ratio” is typically used as a measure for the tightness of the cocoa market, and is closely associated with movements in the traded cocoa bean price – a 10% increase in the stock-to-grind ratio is typically associated with a 9% decrease in the ICCO index cocoa bean price. Recently prices have risen far above the levels justified by this ratio, based on a combination of short-term concerns about the security of supply from Cote d’Ivoire, and longer-term concerns over the capability of the cocoa production industry to increase volumes fast enough to meet expected long-term rises in demand of 2-3% per annum. These concerns are driven by rising incidence of disease in all major producing regions, and competition for land used for cocoa as opposed to other agro commodities such as palm oil and rubber.

The prices of intermediate products such as cocoa butter, liquor, cake and powder track the underlying spot price of cocoa beans. On a weighted average price basis, intermediate processed outputs earn a relatively stable premium of approximately 200 – 220% over raw cocoa beans. Within this, however, there are substantial differences in prices for individual intermediates, with cocoa butter earning the highest premium, and cocoa powder tending to be less than the value of cocoa beans on a per ton basis, as the demand for cocoa powder is lower than for butter or liquor. Since 2008, chocolate manufacturers have attempted to reduce the costs and retail prices of their products in response to lower consumer demand for confectionery, leading to some divergences from the long-run trend: Cocoa butter declined from 287% of the cocoa bean price in the 2007/08 season to 204% in the period October ’08 to March ’09; cocoa powder increased from 55% to 116% of the cocoa bean price over the same period.

⁶ Prices are measured in dollars and Special Drawing Rights; the latter is used here to eliminate the impact of variation in the value of the US dollar on the nominal price of cocoa over the period

FIGURE 7: PRICING OF PROCESSED COCOA VERSUS COCOA BEANS



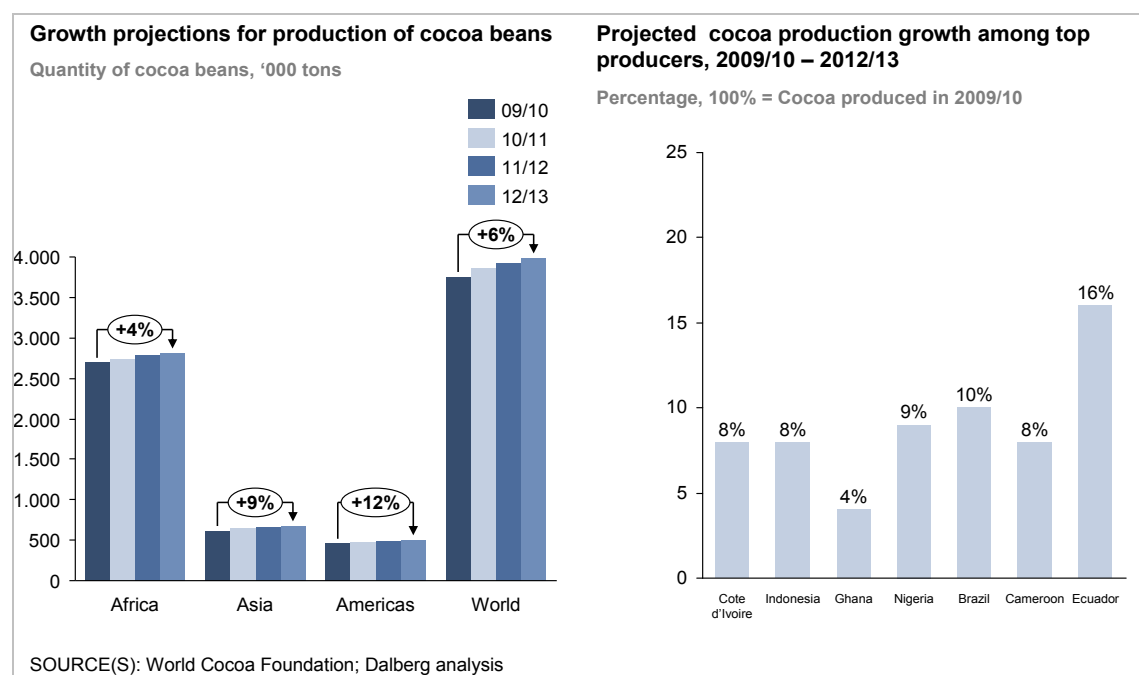
1. "Processed Cocoa" price is based on the weighted average price of cocoa butter and cocoa powder, as calculated by the ICCO
 SOURCE(S): "World Cocoa Economy," ICCO 2010; Dalberg analysis

OUTLOOK FOR THE COCOA MARKET

Cocoa appears to be poised for a period of increasing scarcity, as demand continues to grow, while production growth in key markets appears to be stagnating. In particular, the major producing countries of Cote d'Ivoire and Ghana have seen yields impacted by a combination of factors, including low use of fertilizers, depleted soil fertility, and a high disease and pest burden through black pod and swollen shoot virus.

The outlook for production growth in these countries in the medium term is challenging. The stock of cocoa trees in West Africa is relatively old, with a recent study in Cote d'Ivoire finding that 46% of trees were more than 20 years old and 19% were more than 30 years old, with yields typically declining from 20 years onward. Land is becoming increasingly restricted, with projections of arable land potentially available for cocoa cultivation expected to reach a limit by 2025 in Ghana, while the land currently used for cocoa is shifted to other uses that offer farmers either a higher or less risky return.

FIGURE 8: WORLD COCOA BEAN PRODUCTION FORECASTS



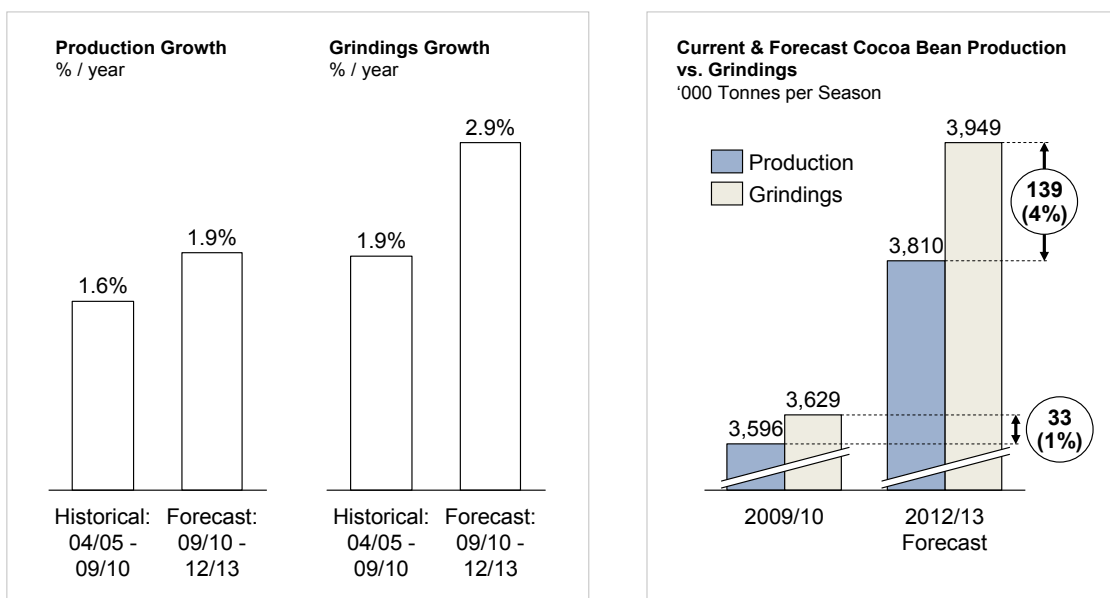
In the short term, the political unrest in Cote d'Ivoire in 2011 has combined with longer-term concerns over increasing supply/demand imbalances to create an extraordinary spike in cocoa bean prices, reaching more than \$3700 per ton⁷. The experience of 2002, when similar unrest caused a similar peak in the cocoa price up to \$2436 per ton in October, was accompanied by increases in farmgate prices, with a resultant improvement in cocoa cultivation that contributed to subsequent increases in yields; the current high prices are expected to result in similar impacts on cocoa production over the short to medium term.

Combining the long-term challenges to production growth with the expected response to high price realization in 2011, cocoa production is expected to grow by 6% between the 2009/10 to 2012/13 seasons, representing an increase in the annualized growth rate of production from 1.6% over the prior 5 years to 1.9%. Africa is expected to contribute substantially in absolute terms to total global growth over this period, with total African production expected to grow by 4%, led by Cameroon, Cote d'Ivoire and Nigeria. Asia and Latin America are expected to grow most rapidly, with countries such as Vietnam targeting cocoa as a substantial area for growth⁸ and traditional producers such as Malaysia looking to revive production in order to offset their growing dependence on cocoa bean imports.

⁷ Based on the ICCO daily spot price of cocoa beans in USD\$ per ton of \$3730.25 on 3rd March 2011

⁸ The government of Vietnam has targeted cocoa bean production of 100,000 tons by 2020

FIGURE 9: OUTLOOK FOR GROWTH IN COCOA BEAN PRODUCTION VERSUS GRINDINGS

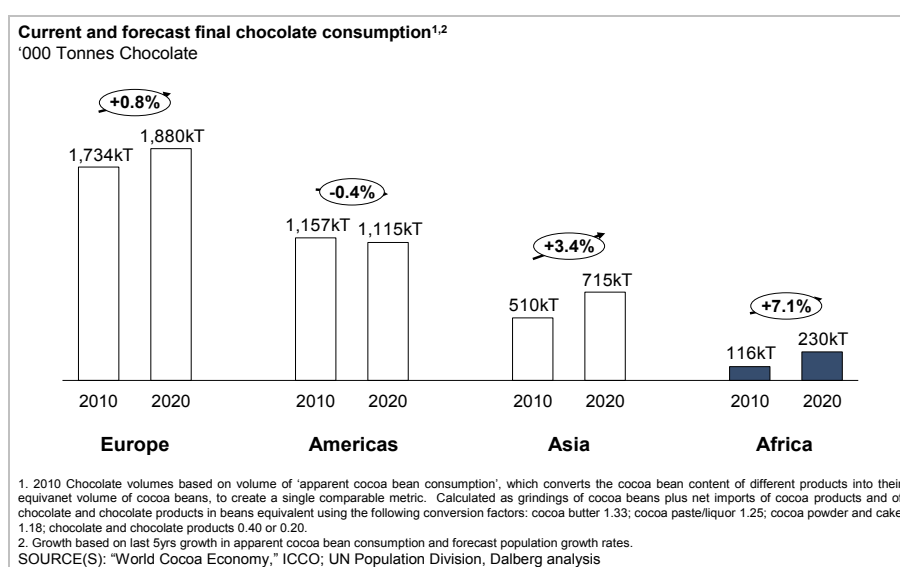


SOURCE(S): ICCO 2010; World Cocoa Foundation; Dalberg analysis

However, growth in demand is expected to outstrip growth in supply; growth in cocoa grindings (demand) is forecast to grow at 2.9% per annum until 2013, in face of a growth in cocoa bean production (supply) of 1.9%. This is expected to open up a growing supply deficit from 33,000 tons in the 2010 season to 139,000 tons by 2013.

The global pattern of chocolate consumption is expected to remain broadly comparable over the medium term, despite the relatively fast rate of growth in emerging markets. Although Europe is likely to grow at less than 1% per year in volume terms in the next 10 years, it will remain the largest consumption market. Conversely, the relatively fast rate of Africa as a chocolate market will still result in this region remaining by far the smallest market opportunity.

FIGURE 10: CURRENT AND FORECAST CHOCOLATE CONSUMPTION



4. The African Market

OVERVIEW OF THE STRUCTURE OF THE AFRICAN MARKET

Africa is largely a cocoa bean production market, with a growing grinding sector.

Cocoa bean production is characterized by smallholder farming, with more than 90% of farms under 5ha and frequently involved in multi-crop cultivation. The majority of production is concentrated in Cote d'Ivoire and Ghana. However, Nigeria, Cameroon and Togo, each with smaller but growing output, are increasingly making a more important contribution to overall African cocoa production.

The majority of grinding activity occurs in Cote d'Ivoire and Ghana, which yielded 410,000 tons and 160,000 tons of grindings respectively in 2009/10. There are substantial legacy assets in Nigeria, although utilization rates are very low. Limited processing activity takes place in Cameroon. The majority of production capacity in Cote d'Ivoire is owned by major multinationals, with investments stimulated by market liberalization. A significant proportion of production capacity is based in Ghana, as well, and is publicly controlled through the state Cocoa Processing Company (CPC)

There is minimal chocolate manufacturing in Africa. CPC operates a branded chocolate production facility in Ghana (making various brands, including Portem Gold, Kingsbite and Oranco), which underwent 'rehabilitation' (i.e. capex upgrade and civil works) in 2010, and Cadbury has recently shut down production in Kenya and moved production to South Africa. Ghana is home to some smaller artisanal players, such as Omahene. Some retail chocolate production also exists in Egypt, with an emphasis on contract or toll manufacturing. As a result, the majority of chocolate products consumed in Sub-Saharan Africa are imported.

FIGURE 11: OVERVIEW OF COCOA BEAN PRODUCTION AND PROCESSING COUNTRIES IN THE AFRICA TRANSFORMATION REPORT⁹ AND OTHER MAJOR PLAYERS IN SUB-SAHARAN AFRICA

'000 mT	Cocoa Bean Production						Processing (Grindings)					
	05/06	06/07	07/08	08/09	09/10	CAGR	05/06	06/07	07/08	08/09	09/10	CAGR
ACET Focus Countries	1,134.0	1,021.1	1,157.3	1,154.2	1,131.2	-0.1%	138.3	173.7	176.1	191.2	214.1	11.5%
Botswana	-	-	-	-	-	-	na	na	na	na	na	-
Burkina Faso	-	-	-	-	-	-	na	na	na	na	na	-
Cameroon	171.1	169.1	184.8	226.6	205.0	4.6%	23.7	20.9	22.8	24.0	22.0	(1.8%)
Ethiopia	-	-	-	-	-	-	na	na	na	na	na	-
Ghana	740.5	614.5	729.0	662.4	645.0	(3.4%)	85.4	120.7	123.2	133.1	160.0	17.0%
Kenya	-	-	-	-	-	-	na	na	na	na	na	-
Mozambique	-	-	-	-	-	-	na	na	na	na	na	-
Mauritius	-	-	-	-	-	-	na	na	na	na	na	-
Nigeria	210.0	220.0	230.0	250.0	260.0	5.5%	28.0	32.0	30.0	34.0	32.0	3.4%
Rwanda	-	-	-	-	-	-	na	na	na	na	na	-
Senegal	-	-	-	-	-	-	na	na	na	na	na	-
South Africa	-	-	-	-	-	-	1.2	0.1	0.1	0.1	0.1	(46.3%)
Tanzania	5.0	6.9	4.5	3.2	6.2	5.5%	na	na	na	na	na	-
Uganda	7.4	10.6	9.0	12.0	15.0	19.3%	na	na	na	na	na	-
Zambia	-	-	-	-	-	-	na	na	na	na	na	-
Other	1521.3	1345.3	1535.4	1365.9	1337.8	-3.2%	336.8	361.6	375.4	420.0	411.4	5.1%
Côte d'Ivoire	1407.8	1229.3	1382.4	1223.2	1190.0	-4.1%	335.8	360.0	373.9	418.6	410.0	5.1%
Togo	73.0	78.0	111.0	105.0	110.0	10.8%	na	na	na	na	na	-

⁹ "ACET Focus Countries" are the 15 countries that the African Centre for Economic Transformation (ACET) focuses on in the Africa Transformation Report

Other Africa	40.5	38.0	42.0	37.7	37.8	-1.7%	1.0	1.6	1.5	1.4	1.4	8.8%
TOTAL	2655	2366	2693	2520	2469	-1.8%	475	535	552	611	626	7.1%

Source: ICCO; FAOStat; Dalberg analysis

FIGURE 12: COCOA IMPORTS AND EXPORTS FOR ACET FOCUS COUNTRIES¹⁰ AND OTHER MAJOR PLAYERS IN SUB-SAHARAN AFRICA

	Import Quantity ('000 mT)						Estimated Import Value (\$m)						Export Quantity ('000 mT)						Estimated Export Value (\$m)					
	05/06	06/07	07/08	08/09	09/10	CAGR	05/06	06/07	07/08	08/09	09/10	CAGR	05/06	06/07	07/08	08/09	09/10	CAGR	05/06	06/07	07/08	08/09	09/10	CAGR
Cocoa Beans																								
ACET Focus Countries	18	18	21	20	19	1.9%	28	33	52	53	65	23.5%	1,005	1,034	1,082	1,094	1,111	2.5%	1,565	1,917	2,722	2,843	3,730	24.2%
Botswana	0	0	0	0	0	(71.2%)	0	0	0	0	0	(65.1%)	-	-	-	-	-	-	-	-	-	-	-	-
Burkina Faso	1	1	1	1	1	-	2	2	3	3	4	21.2%	0	0	0	0	0	-	1	1	1	1	2	21.2%
Cameroon	-	-	-	-	-	-	-	-	-	-	-	-	188	169	163	179	221	4.2%	292	314	410	465	744	26.3%
Ethiopia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ghana	-	0	-	-	-	-	-	0	-	-	-	-	614	649	703	673	603	(0.4%)	955	1,203	1,768	1,750	2,026	20.7%
Kenya	1	1	1	2	1	8.1%	2	2	3	5	5	31.0%	-	0	-	0	0	-	-	0	-	0	0	-
Mozambique	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mauritius	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nigeria	-	-	-	0	0	-	-	-	-	0	0	-	201	207	207	233	274	8.1%	312	384	521	605	922	31.1%
Rwanda	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-
Senegal	0	0	1	1	1	35.4%	0	0	0	2	2	3	64.0%	-	-	-	-	-	-	-	-	-	-	-
South Africa	15	15	17	16	16	0.7%	24	27	44	42	52	22.1%	0	-	-	0	0	18.9%	0	-	-	0	0	44.1%
Tanzania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uganda	-	-	0	0	0	-	-	-	0	0	0	-	3	8	9	8	11	42.3%	4	15	22	22	37	72.4%
Zambia	0	-	-	0	0	18.9%	0	-	-	0	0	44.1%	-	-	-	-	-	-	-	-	-	-	-	-
Other Countries	1	1	0	0	0	(75.6%)	1	2	0	0	0	(70.4%)	1,394	1,462	1,320	1,347	1,308	(1.6%)	2,170	2,711	3,321	3,501	4,393	19.3%
Côte d'Ivoire	-	-	-	-	-	-	-	-	-	-	-	-	1,300	1,350	1,200	1,191	1,165	(2.7%)	2,023	2,502	3,020	3,096	3,913	17.9%
Togo	1	1	0	0	0	(75.6%)	1	2	0	0	0	(70.4%)	53	73	78	111	105	18.9%	82	135	196	288	352	44.0%
Other Africa	-	-	-	-	-	-	-	-	-	-	-	-	41	39	42	45	38	(2.2%)	65	73	106	116	128	18.5%
TOTAL	19	18	21	20	19	0.8%	29	34	52	53	65	22.1%	2,399	2,496	2,402	2,441	2,419	0.2%	3,735	4,628	6,043	6,344	8,123	21.4%
Intermediate Cocoa Products - Total																								
ACET Focus Countries	13	15	17	17	-	10.6%	34	35	45	57	-	19.5%	94	117	109	60	-	(14.2%)	202	253	241	173	-	(4.9%)
Botswana	0	0	0	0	-	(32%)	0	0	0	0	-	(32%)	0	0	0	0	-	-	0	0	0	0	-	-
Burkina Faso	-	-	-	-	-	-	0	-	-	-	-	(100%)	-	-	-	-	-	-	-	-	-	-	-	-
Cameroon	0	0	0	0	-	(37%)	0	0	0	0	-	(46%)	17	19	18	15	-	(5%)	36	39	40	48	-	11%
Ethiopia	1	0	0	0	-	(70%)	1	1	0	0	-	(59%)	-	1	-	-	-	-	-	0	-	-	-	-
Ghana	0	1	0	0	-	127%	0	1	0	1	-	96%	63	81	71	26	-	(25%)	122	164	153	66	-	(19%)
Kenya	1	1	1	1	-	16%	2	2	2	2	-	10%	0	0	0	0	-	9%	0	0	0	0	-	95%
Mozambique	0	0	0	0	-	66%	0	0	0	0	-	25%	-	-	-	-	-	-	-	-	-	-	-	-
Mauritius	0	0	0	0	-	(2%)	0	0	0	0	-	(1%)	-	-	-	-	-	-	-	0	0	-	-	-
Nigeria	0	0	0	0	-	23%	0	0	0	1	-	13%	14	16	17	17	-	7%	42	49	46	57	-	10%
Rwanda	-	0	0	0	-	-	-	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Senegal	0	0	1	1	-	39%	0	0	1	1	-	55%	-	0	0	0	-	-	-	0	0	0	-	-
South Africa	10	12	14	13	-	10%	29	30	42	51	-	20%	0	0	0	0	-	27%	1	1	1	1	-	14%
Tanzania	0	0	0	0	-	191%	0	0	0	1	-	464%	-	0	3	-	-	-	-	0	2	-	-	-
Uganda	0	0	0	0	-	(43%)	0	0	0	0	-	(7%)	-	-	0	0	-	-	-	-	0	1	-	-
Zambia	0	0	0	0	-	48%	0	0	0	0	-	36%	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL Other Countries	2	0	0	0	-	(89.1%)	5	0	0	0	-	(89.7%)	269	252	276	286	-	2.0%	512	526	692	897	-	20.6%
Côte d'Ivoire	-	0	0	0	-	-	-	0	0	0	-	-	269	252	276	286	-	2%	512	526	692	897	-	21%
Togo	0	0	0	0	-	(11%)	0	0	0	0	-	(23%)	1	1	0	0	-	(58%)	0	1	0	0	-	(59%)
Other Africa	3	4	7	3	-	(1%)	7	9	18	4	-	(16%)	0	0	0	0	-	(6%)	0	0	0	0	-	(7%)
TOTAL	16	20	23	20	-	8.5%	41	44	63	62	-	14.6%	364	370	385	345	-	(1.8%)	714	781	933	1,071	-	14.5%
Chocolate & Cocoa-Based Confectionery																								
ACET Focus Countries	16.7	20.6	25.0	29.1	-	20.3%	60.4	77.5	82.6	105.0	-	20.3%	13.5	12.0	13.9	12.8	-	(1.7%)	37.5	34.2	33.1	37.3	-	(0.2%)
Botswana	0.1	0.1	1.3	1.4	-	198%	0.2	0.1	5.1	5.7	-	209%	-	-	-	0.0	0.0	-	-	0.0	0.0	-	-	-
Burkina Faso	0.1	0.1	0.5	0.6	-	18%	0.4	0.5	0.6	0.6	-	19%	0.0	0.0	-	-	-	(100%)	0.0	0.0	-	-	-	(100%)
Cameroon	0.6	0.5	0.6	0.9	-	13%	1.1	1.0	1.5	2.0	-	21%	0.8	0.9	0.0	0.0	-	(78%)	2.0	2.5	0.1	0.1	-	(62%)
Ethiopia	0.4	0.4	0.5	0.4	-	0%	0.9	1.1	1.1	1.3	-	12%	-	-	-	-	-	-	-	-	-	-	-	-
Ghana	0.9	1.0	2.6	2.4	-	37%	1.4	2.3	2.6	3.6	-	39%	0.6	0.1	1.3	1.8	-	49%	1.4	0.2	4.2	2.3	-	17%
Kenya	0.8	1.4	1.4	1.6	-	23%	2.3	3.8	4.7	6.2	-	38%	1.3	1.0	0.8	0.8	-	(14%)	3.7	2.3	3.0	3.8	-	0%
Mozambique	1.4	1.0	1.3	2.5	-	20%	4.2	3.4	4.5	5.5	-	9%	-	-	-	-	-	-	0.0	0.0	0.0	0.0	-	26%
Mauritius	1.5	1.6	1.7	1.8	-	7%	7.0	7.6	9.7	12.2	-	20%	0.0	0.0	0.0	0.0	-	71%	0.1	0.1	0.1	0.4	-	68%
Nigeria	0.7	0.5	0.6	1.6	-	30%	3.0	1.9	2.3	5.2	-	20%	0.6	0.0	0.8	0.1	-	(51%)	0.3	0.0	0.3	0.2	-	(9%)
Rwanda	0.0	0.1	0.0	0.1	-	26%	0.1	0.2	0.3	0.4	-	67%	-	-	0.0	-	-	-	-	-	0.0	-	-	-
Senegal	1.1	1.6	2.2	2.3	-	27%	1.7	2.5	2.8	3.5	-	28%	0.3	1.0	1.2	1.1	-	52%	0.6	1.8	1.7	2.0	-	52%
South Africa	7.7	10.5	10.6	11.7	-	15%	34.4	48.8	42.7	50.8	-	14%	10.0	8.7	9.5	8.6	-	(5%)	29.2	26.9	23.0	27.6	-	(2%)
Tanzania	0.4	0.5	0.6	0.8	-	24%	0.6	0.8	1.0	2.2	-	55%	0.0	-	0.0	0.0	-	26%	0.0	-	0.3	0.2	-	52%
Uganda	0.5	0.6	0.6	0.5	-	3%	1.5	1.7	1.9	2.2	-	12%	-	-	0.0	0.0	-	-	-	-	0.1	0.2	-	-
Zambia	0.4	0.6	0.7	1.0	-	41%	1.5	1.8	1.9	3.6	-	35%	0.0	0.3	0.3	0.2	-	115%	0.2	0.4	0.4	0.5	-	36%
Other Countries	15.5	16.5	16.2	18.0	-	5.1%	37.3	42.6	36.9	50.7	-	10.8%	47.4	52.5	38.7	62.8	-	9.9%	82.9	92.4	82.2	165.5	-	25.9%
Côte d'Ivoire	0.7	0.9	1.1	1.0	-	12%	1.9	2.5	3.1	3.4	-	23%	45.8	49.1	31.5	55.6	-	7%	76.1	84.3	73.4	164.5	-	29%
Togo	0.7	0.7	1.8	1.0	-	13%	0.3	1.3	0.6	1.7	-	75%	0.0	0.0	0.0	0.0	-	42%	0.0	0.0	0.0	0.0	-	112%
Other Africa	14.1	15.0	13.3	16.0	-	4%	35.1	38.9	33.1	45.6	-	9%	1.6	3.4	7.1	7.2	-	65%	6.8	8.1	8.7	1.0	-	(47%)
TOTAL	32	37	41	47	-	13.5%	97.6	120.1	119.5	156	-	16.8%	61	65	53	76	-	7.5%	120	127	115	203	-	19.0%

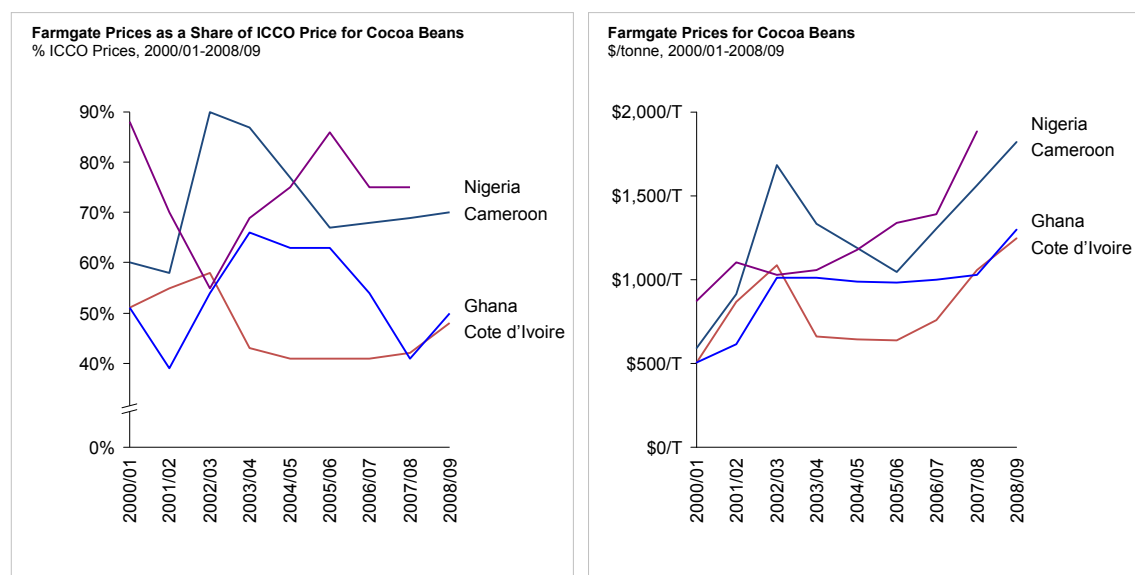
Source: ICCO; FAOstat; Dalberg analysis

¹⁰ Ibid.

COCOA BEAN PRODUCTION

Cocoa bean production has been in decline in Cote d'Ivoire and Ghana over the last 5 years, due to a combination of declining yields and, to a lesser extent, a reallocation of land to other crops. This decline in yields is partly due to structural agronomic factors (especially the relatively old age of cocoa trees) and rational neglect from farmers who view cocoa as a high-risk crop, due to volatility in prices received at the farmgate.

FIGURE 13: COMPARISON OF FARMGATE PRICES FOR COCOA IN SELECTED AFRICAN PRODUCING COUNTRIES

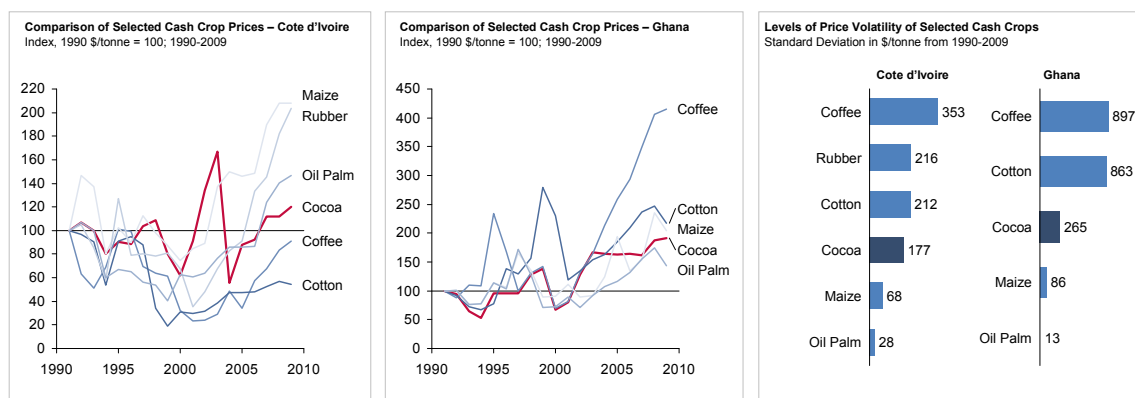


Source: ICCO; Dalberg analysis

As can be seen in Figure 13 there are substantial differences between countries in terms of the farmgate price as a share of the international 'ICCO' traded price for cocoa, and there is also substantial difference across years even within the same country. Overall, farmers in Cote d'Ivoire have tended since 2002/03 to receive the lowest farmgate prices, partly due to lower perceived average quality of Ivorian cocoa (which has suffered from generally old trees, diseases such as Black Pod disease and Swollen Shoot Virus, a low use of fungicides and fertilizers and relatively high rates of taxation the burden of which largely falls on farmers).

While cocoa is frequently termed a price volatile crop, analysis of producer prices for a variety of major cash crops (see Figure 14) demonstrates that, while cocoa prices are more volatile than staples such as maize, it is typically less volatile than other cash crops such as coffee, cotton and rubber.

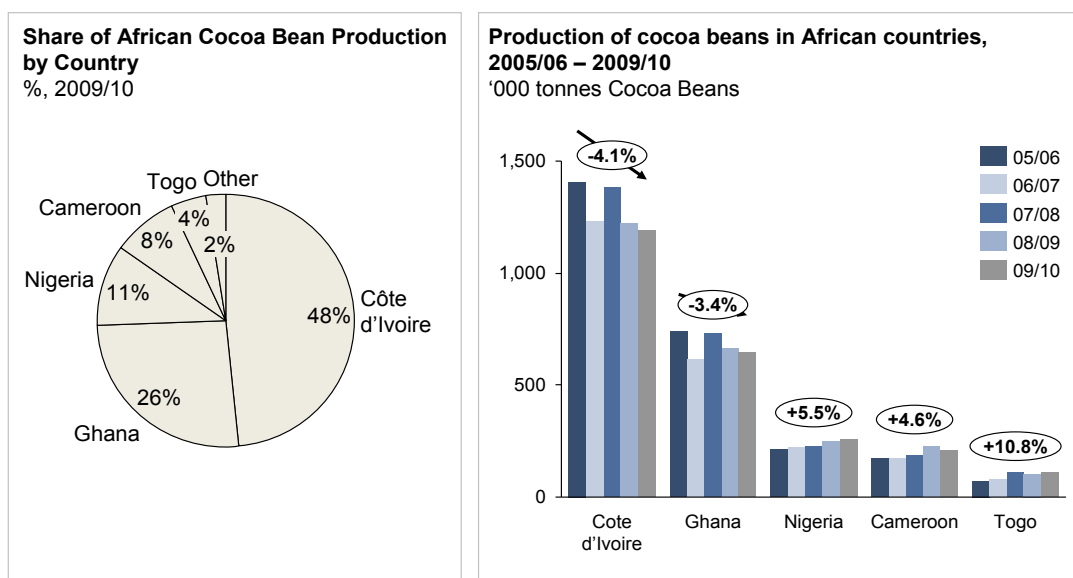
FIGURE 14: COMPARISON OF PRICE VOLATILITY OF COCOA VERSUS OTHER CASH CROPS IN GHANA AND COTE D'IVOIRE



Source: FAOstat; Dalberg analysis

Although production in major producers has declined, smaller producer countries such as Nigeria, Cameroon and especially [1] Togo have grown. This has offset the relatively rapid contraction in Cote d'Ivoire and Ghana so that overall production in Africa has only contracted at an average rate of 1.8% over the period 2004/05 to 2009/10.

FIGURE 15: RECENT PRODUCTION GROWTH IN KEY AFRICAN COUNTRIES



SOURCE(S): "World Cocoa Economy," ICCO 2010; Dalberg analysis

GHANA

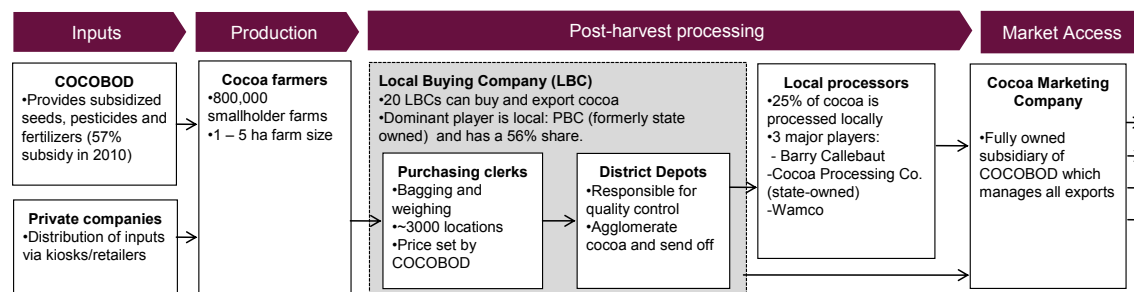
Cocoa is a significant crop for the Ghanaian economy, accounting for about 10% of GDP, generating about 25% of total export earnings, and generating employment for about 800,000 smallholder farms. With relatively low yields per hectare — only 54% of the level in Indonesia — due to lower use of inputs, lower soil fertility and poorer irrigation, Ghana has a material opportunity to increase the value of the total cocoa bean crop by increasing the volume of production; the Ghanaian parastatal body focused on the cocoa industry — COCOBOD — has set a goal to increase production up to 1 million tons, from 645,000 tons in the 2009/10 season

The cocoa sector in Ghana is heavily regulated. COCOBOD plays a key role across the Ghanaian supply chain, providing subsidized inputs and guaranteeing purchase prices to farmers, and directly managing all exports

through its wholly owned subsidiary, the Cocoa Marketing Company. As a result, Ghanaian farmers have far more price stability than in free-market oriented regimes such as Cote d'Ivoire, although recent producer prices as a share of the world spot price appear comparable¹¹.

Cocoa production has recently declined, due to structural agronomic factors, such as old tree stocks and depleted soil fertility, low pest and disease management. Smuggling between Cote d'Ivoire and Ghana is also considered to be material (in the region of 15% of total production) as farmers and traders attempt to take advantage of arbitrage opportunities between free-market prices in Cote d'Ivoire versus regulated prices in Ghana.

FIGURE 16: OVERVIEW OF THE COCOA SUPPLY CHAIN IN GHANA

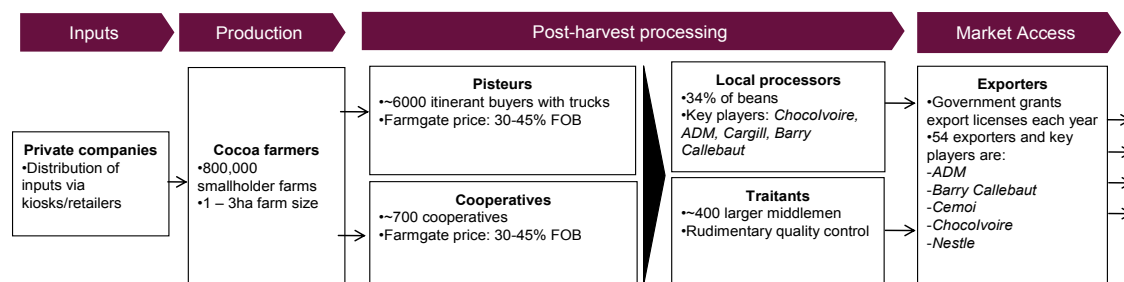


Source: ICCO, ODI UK, ABN AMRO, COCOBOD, Bloomberg, Dalberg analysis

CÔTE D'IVOIRE

Cote d'Ivoire is the world's leading producer of cocoa beans. The industry has recently been liberalised: Private companies now are responsible for the provision of inputs to the approximately 800,000 smallholder farms engaged in cocoa cultivation, and bean purchases are made by *pisteurs* (independent traders) and cooperatives, who then sell the beans to local processors and *traitants* (larger traders that sell into the international export market). Exports from Cote d'Ivoire are controlled by the government through a series of export licenses that are granted each year. There is a broad base of such licensed exporters in Cote d'Ivoire, but the majority of volume is dominated by the key global agricultural commodities traders such as ADM and Cargill, as well as vertically integrated manufacturers such as Cemoi, Barry Callebaut and Nestle.

FIGURE 17: OVERVIEW OF THE COCOA SUPPLY CHAIN IN COTE D'IVOIRE



Sources: Nestle; ICCO; ODI

In early 2011, political unrest created a substantial atmosphere of uncertainty around the Cote d'Ivoirian market, with the supply of cocoa beans temporarily withheld from the export market and economic sanctions levied on the

¹¹ In the 2008/09 season producers in Cote d'Ivoire received 48% of the ICCO cocoa bean price, while producers in Ghana received 50%

Gbagbo government restricting the scope for cocoa and coffee exports. As a result, the outlook for production of cocoa beans is uncertain, and comes at a time of ongoing supply contraction (with volume dropping by 15% over the period between the 2005/06 and 2009/10 seasons. Production has been severely impacted by pests and diseases, as well as by ageing trees that are on average more than 20 years old. Of material concern is the lack of inter-generational transfer of cocoa farming in the country – the majority of cocoa farmers are past 40 years old, with younger farmers switching either to other crops or moving to urban areas. Fundamentally, cocoa farmers in the country receive the lowest share of FOB prices at the farmgate of any major producing nation (partly due to relatively high taxation the burden of which is borne by farmers, and also the lack of price support for farmers versus other countries such as Ghana with a more managed supply chain), creating poor incentives for good crop management, expansion or replanting.

CAMEROON

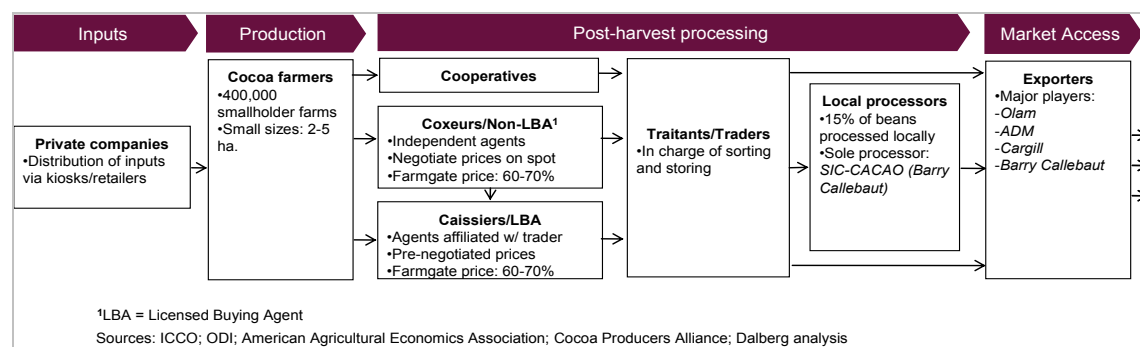
As with much of West African production, cocoa farming in Cameroon is characterised by smallholder farming, with farms typically ranging from 2-5 hectares in size. Cocoa beans are then sold either to *caisseurs*, licensed buying agents that are affiliated with a cocoa trader, independent *coxeurs*, or through co-operatives.

These three groups then sell cocoa to *traitants*, which focus on trading beans both into the domestic processing industry and the international supply chain through major exporters such as ADM, Cargill, Olam and Barry Callebaut, which account for more than 90% of all cocoa produced in the country.

In Cameroon, cocoa farming is a significant and growing activity: Approximately 400,000 cocoa farms cover 570,000 hectares, and production has grown by 18% over the five years up to 2009 due to a combination of rising yields (through the introduction of high yielding varieties, as well as improved husbandry) and increased land dedicated to cocoa cultivation. The 2009/10 season, though, actually saw production volumes fall by 10%. The reason for this contraction is not entirely clear; various factors, such as the resting of trees, undeclared stocks and smuggling of cocoa to other countries, have been suggested as potential causative factors. However, the overall outlook for Cameroon is for continued growth, a result of the maturation of high-yielding seedlings and use of subsidized fertiliser.

Approximately 11% of cocoa beans produced in the 2009/10 season were processed locally by Cameroon's sole processor, SIC-CACAO, a joint venture between the government of Cameroon and Barry Callebaut. CHOCOCAM, operated by Tiger Foods and formerly a Barry Callebaut production facility, produces cocoa-based consumer products, and was estimated to generate sales of approximately €28m in 2008.

FIGURE 18: OVERVIEW OF THE COCOA SUPPLY CHAIN IN CAMEROON



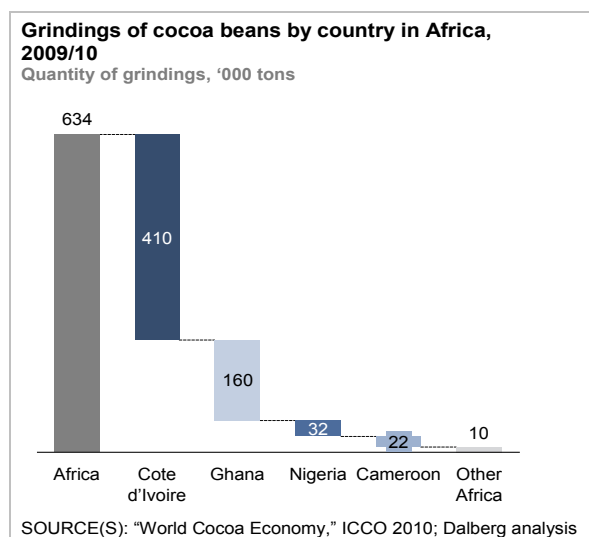
In terms of the production of cocoa beans, Cameroon shares a number of challenges with other West African production markets, including an ageing cocoa tree population and farming workforce, a lack of farmer extension

services, and a lack of access to affordable credit. Recent impressive production growth from the widespread adoption of high yielding cocoa seedlings and subsidised inputs appear to be more than offsetting these issues. However, these long-term challenges remain and are likely to limit prospects for long-term production growth.

INTERMEDIATE PROCESSING

Grinding volumes are largely concentrated in Cote d'Ivoire and Ghana, which process 34% and 25% of their production respectively. Cameroon and Nigerian processing is substantially lower – in both absolute terms and as a share of local bean production – and has grown relatively slowly.

FIGURE 19: BREAKDOWN OF AFRICAN PROCESSING VOLUMES BY COUNTRY



GHANA

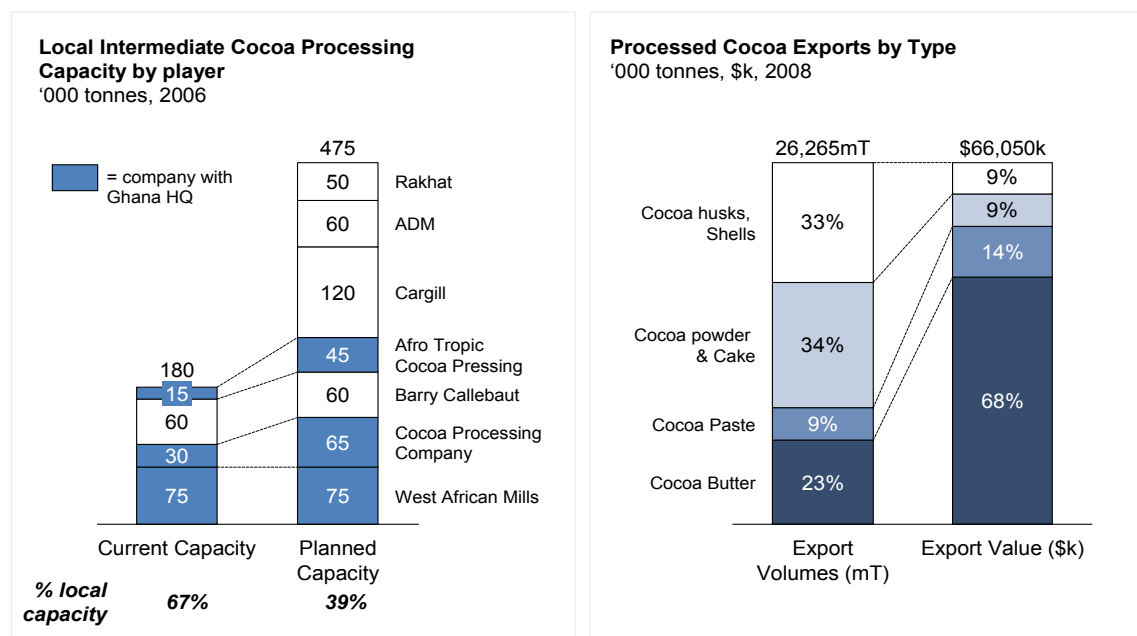
Ghana is an active and growing player across the cocoa value chain; almost 25% of cocoa beans were processed locally in the 2009/10 season by a combination of state-owned and private sector players, and Ghana also produces chocolate bars through the Cocoa Processing Company factory at Portem. The Ghanaian government has targeted an increase in origin grinding to 40% by 2012, with an eventual target of 60%.

Production capacity has increased substantially, due to opening up to multinational players, especially Cargill and ADM.

Exports of intermediate products appear to be skewed towards low-value items such as cocoa husks and shells, which account for 33% of export volumes, compared with only 18% in Cote d'Ivoire. This is, however, partly a result of the incentive regime in Ghana that provides small cocoa beans to local processors at a discount, resulting in a relatively high mix of shells and husks in the output of local processors than would otherwise be the case.

Local chocolate production beyond intermediate processing is minimal in comparison with grinding. While exact figures are unavailable, market participants state that volumes produced by the Cocoa Processing Company under brands such as Kingsbite and Portem Gold, but in small quantities, while other artisanal players that produce locally with an export orientation such as Omahene also exist.

FIGURE 20: OVERVIEW OF GHANA COCOA PROCESSING

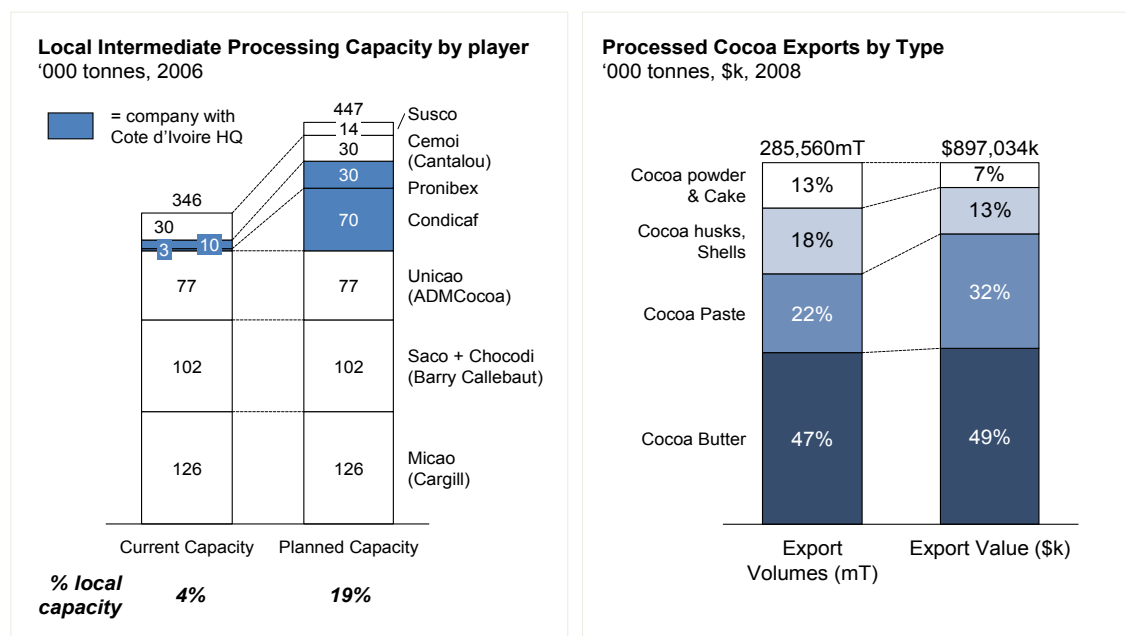


Sources: Oxfam, FAOSTAT, Dalberg analysis

COTE D'IVOIRE

At the same time, Côte d'Ivoire is fast becoming the largest cocoa grinder in the world. In October 2010, the largest cocoa processing facility in the world was opened there, and capacity growth continues to be led by the private sector, with ADM, Cargill and Barry Callebaut accounting for grinding capacity of more than 300,000 tons per annum. Unlike Ghana, the mix of exports also appears to be closer to the more 'desirable' high-value mix of Malaysia, with cocoa butter accounting for 47% of exports by volume and 49% by value, generating export revenues of \$0.9bn in 2008.

FIGURE 21: OVERVIEW OF COTE D'IVOIRIAN COCOA PROCESSING



Sources: Oxfam, FAOSTAT, Dalberg analysis

The Cote d'Ivoire government has targeted processing of 50% of beans in country, and in 2009/10 reached 34%. Prior to the recent unrest, further growth in grinding capacity was of interest both to established players, through expansion of their current facilities, and potential entrants; such plans now may be delayed or terminated. Conversely, challenges in maintaining levels of supply may lead to an increase in the ratio of beans that are processed in the country, but this should not be interpreted as a successful shift in the balance of the cocoa industry toward agro-processing, as much as a faster rate of contraction of bean production than processing.

CAMEROON

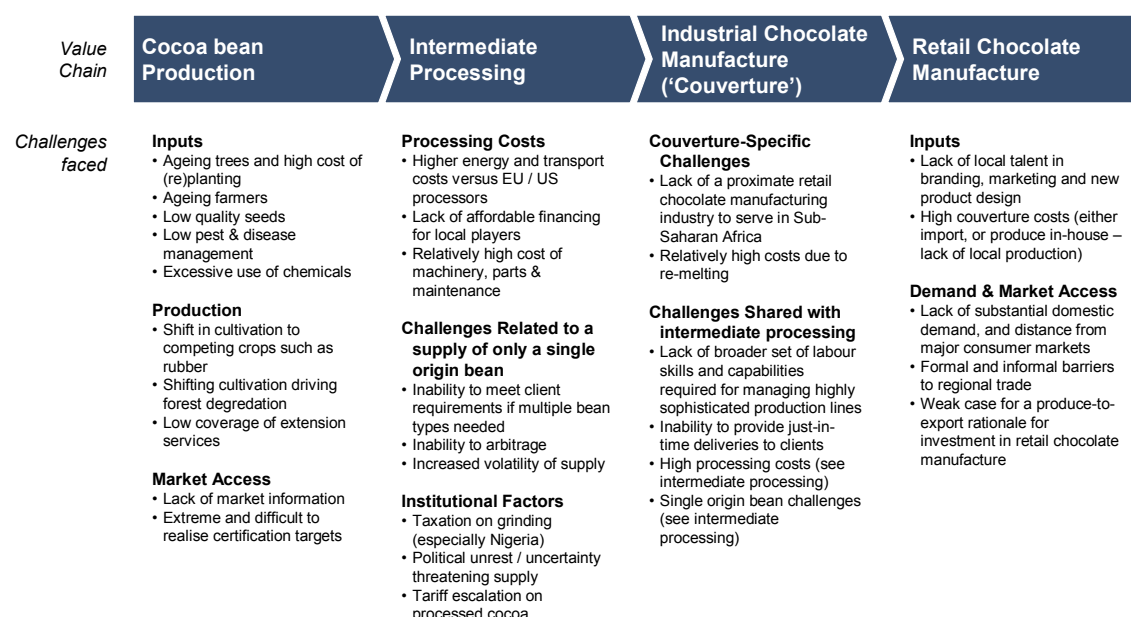
In terms of processing and industrial manufacturing, Cameroon's production appears to be in decline. Policy-makers indicate that the returns to cocoa processing versus trading raw cocoa beans are not uniformly higher: Tariff escalation, combined with the costs of energy and high logistics in Cameroon create a substantial burden that has led to a redistribution of the export mix toward raw cocoa and away from butter, powder and liquor. A lack of affordable finance creates substantial challenges for any local or regional players that want to develop origin processing facilities.

5. The Value Capture Opportunity

CHALLENGES AND BARRIERS

Today's policy-makers face a broad set of challenges when trying to realise these opportunities for value capture. The policy environment must take into account issues that impact cocoa bean production, international trade tariffs and barriers, and elements of path-dependency in the current global structure of the cocoa value chain that create substantial inertia when attempting to promote a geographical reconfiguration of production assets. Key challenges that exist across the cocoa value chain are outlined below.

FIGURE 22: OVERVIEW OF CHALLENGES FACED BY SUB-SAHARAN AFRICAN COUNTRIES ACROSS THE COCOA VALUE CHAIN IN AFRICA



Source: Industry Interviews; Dalberg analysis

THE CHALLENGE OF INCREASING THE VALUE OF COCOA BEAN PRODUCTION

The opportunity cost of planting cocoa is rising (notwithstanding the current spike in cocoa prices that is partly driven by the political instability in Cote d'Ivoire) as hitherto cocoa-producing land is reallocated to competing crops, such as rubber, in several countries. The high average age of trees in several key markets is necessitating decisions from farmers either to make a substantial commitment to sink investments in replanting cocoa trees if yields are to increase, or to switch to an alternative crop. More broadly, the average age of cocoa farmers is high, with younger farmers less likely to participate or be interested in cultivating cocoa.

Coordination of sales across countries could pose a substantial opportunity, especially as Africa accounts for a sufficient share in global supply as to have a decisive role in price formation. However, either direct or tacit coordination requires substantial investment in the capability to co-ordinate across countries, the credibility of key actors to police quotas or informal agreements, and risks promotion of the growth of competing supplies from countries such as Indonesia, Brazil and new players such as Vietnam.

In order for countries to fully capture the opportunities in addressing fair-trade and organic niches, certification costs need to be managed; for many smallholders, certification costs are either too large to be able to afford, or

are perceived to offer a poor return compared to alternative investments in areas such as agricultural inputs. When cocoa prices are high, such as in 2011, the difference in margin on fair-trade cocoa versus uncertified cocoa is small in percentage terms. Compounding this is the complexity of multiple certification protocols and regimes for each major market, which are not mutually recognised. For example, certification of organic cocoa beans for the Chinese market is not recognised in the EU. Fundamentally, it is not clear that these constitute material consumption markets at present; for example, Euromonitor estimates that the organic chocolate market was worth \$305m in retail sales in 2005, versus a global chocolate market valued at \$72bn and constituting an approximate 0.4% share of the market by value.

THE CHALLENGE OF INCREASING THE PROPORTION OF ORIGIN PROCESSING

Cote d'Ivoire was already the second largest producer of intermediate processed cocoa products in the 2009/10 season in the world, with Ghana rapidly gaining ground; with a combination of demonstrable growth, and ambitious targets of 50% of cocoa beans in Cote d'Ivoire to be processed in country by 2012 and 60% in Ghana, it would appear that this is an example of successful expansion into value-added processing. In this regard, policy-makers experience in the use of incentives to encourage origin processing could be viewed as an area of best practice that could be leveraged in other areas.

This success has been achieved in the face of a broad set of substantial challenges associated with the origin processing model, which are likely to act as eventual caps to the total level of origin processing possible in the long-term. Intermediate processors located in West African countries tend to have higher processing costs per ton than European factories: their distance from suppliers leads to higher costs for capital investments, higher investment and maintenance costs and more capital tied up in inventory for spare parts; import and export bureaucracy can create additional cost and uncertainty in the supply chain, too. Distance from clients also necessitates solidification of cocoa liquor and butter, which raises input costs for clients that have to remelt the products before use; it also makes just-in-time deliveries much harder to achieve and can exclude origin processors from being able to make close proximity and very forward sales.

While the ability to source cocoa beans locally does create some opportunities for input cost advantage, these are offset by four challenges.

- **Lack of breadth of flavours:** Without access to multiple origins, it is difficult to achieve taste and colour specifications for customers. Such specifications are usually met by mixing bean origins, which can lead to relatively low prices for the intermediate processed products that are produced at origin.
- **Inability to arbitrage:** Single origin production also obviates the possibility of sourcing beans at global best prices, as origin processors are captive to the local market.
- **Increased volatility of supply:** The supply of beans from a single country is less constant than for factories in major cocoa processing hubs in the EU and US, which tend to require maintaining high intra-crop stocks.
- **Increased processing costs:** The use of "substandard" local beans (such as beans that would typically be considered too small) can add time and cost to the process. Processors in Ghana are able to access such beans, typically at a discount, which partially offsets the increase in grinding costs associated with their processing.

This 'single origin challenge' can only be partly addressed by centralising the breadth of West African cocoa; to fully address this, the full range of major bean types (including those that are used for their flavour or 'fine' cocoa which is largely sourced from Latin America) needs to be made available in West Africa. This is likely to, at least

initially, require importing cocoa from other regions; longer term, it might be feasible to find viable substitutes for at least some ex-Africa varieties from within the region, or cultivate locally adapted versions.

Finally, origin processors face a series of traditional challenges that impact industrialization in general in the region, such as high energy costs, relatively high interest rates and a general lack of affordable finance for local players, customs duties on machinery and parts, and generally higher costs for packaging, maintenance and services.

There is substantial inertia in the market, given current sunk investments in processing facilities located in consumption markets. African policy-makers will need to take into account the onerous labour regulations in key markets like the EU, which can create very high exit costs from processing in the region. This suggests that investment in processing in Africa is likely to be in capacity that adds total global capacity, rather than to substitute for currently installed capacity in other regions. While on a player-by-player basis such incremental expansion decisions may be rational, a co-ordinated push to encourage investment in facilities in Africa risks promoting the creation of excess capacity, with an overhang in 'legacy' consumption markets. Recent planned builds, such as the 60,000-ton Olam facility in Cote d'Ivoire, and the 60,000-ton facility in Indonesia by Malaysian grinders suggest that capacity growth appears to be faster than expected growth in grinding volumes over the medium term.

The view of many established players in the sector is that these challenges can be overcome, but typically only through the support of substantial incentives in order to create a viable business case for investments in origin countries. Potential smaller entrants, however, face the challenge of attempting to gain market access given the high concentration of volume flows between major players across the value chain, making entry a potentially high-risk endeavour.

THE CHALLENGE OF ENTERING INDUSTRIAL AND BRANDED CHOCOLATE MANUFACTURING AT SCALE

At more advanced stages in the value chain, African countries currently lack a strong market rationale to encourage players to invest in regional production, and also lack the broader set of capabilities required for success.

Success in branded chocolate manufacturing relies more on excellence in new product development, capturing customer insight and branding, than in management of labour and raw material input costs. Proximity to a substantial consumer market and the availability of a highly skilled workforce are therefore critical. Although a fast-growing market, Africa as a region will not warrant an asset-based strategy for retail chocolate production to service the region for the medium term, and there is only a weak case for a produce-to-export rationale for investment.

Couverture manufacturers experience substantial advantages from being located close to their clients in retail chocolate production. Cost advantages from bulk logistics may be significant¹², but the ability to avoid remelting for retail chocolate manufacturers can be just as important. Beyond input costs issues, the ability to integrate into branded chocolate manufacturers supply chains with just-in-time delivery is critical, as manufacturers tend to keep very lean stocks (given space requirements and the short life of liquid couverture); the ability to send back batches for reprocessing to meet requirements is also important for users' peace of mind. Therefore, couverture production assets tend to be based close to retail production.

¹² It is not clear that the relative cost of logistics versus the relatively high cost of couverture is significant for all users. A UK Competition Commission investigation into the UK couverture market found a broad spectrum of views amongst users as to how sensitive their purchase decisions were to logistics costs, and therefore how captive they were to UK vs. Continental European producers.

THE CHALLENGE FOR NEW ENTRANTS INTO THE COCOA INDUSTRY

The cocoa industry currently is characterised by a relatively small set of vertically integrated grinder-couverture manufacturers, and retail chocolate manufacturers. This structure presents a series of challenges for prospective entrants.

- **At the level of intermediate processing and couverture manufacture**, vertically integrated players are able to leverage substantial internal financial resources and preferential access to capital versus local players. They can also manage costs and capacity utilisation across a broad production estate. As a result of both of these advantages, they are able to finance and operate production facilities typically at a lower cost than players that are not vertically integrated. The long lead-time involved in perfecting couverture recipes – which can take up to 12 months – and the high dependence on couverture suppliers due to the short storage life of the product leads to very high stickiness of current relationships.
- **At the level of retail chocolate manufacture**, strong relationships with major retailers and well-established brands supported by high levels of ongoing marketing create high barriers to entry for new players aiming to produce for the mass-consumer market.

Specialty market opportunities do exist for potential new African entrants across the supply chain. Local players such as Omahene in Ghana already exist to address these niches, while public sector players such as CPC in Ghana produce brands such as Kingsbite, predominantly for the local market. However, given the relative scale of niche opportunities versus the overall market size, it is highly challenging for countries to leverage specialty markets for transformative change in the cocoa sector. As a result, the focus on key opportunities is likely to involve engaging major multinational players.

KEY OPPORTUNITIES TO CAPTURE VALUE FOR AFRICAN COUNTRIES

Given the above challenges, cocoa can be understood as a challenging crop from which it is possible to capture greater value through agro-processing, since it is characterised by a highly consolidated and integrated global value chain with substantial legacy assets for dominant players already located within the key consumption markets in the US and EU; however, several material opportunities do exist, some of which already are being successfully produced in Africa's leading cocoa-producing countries:

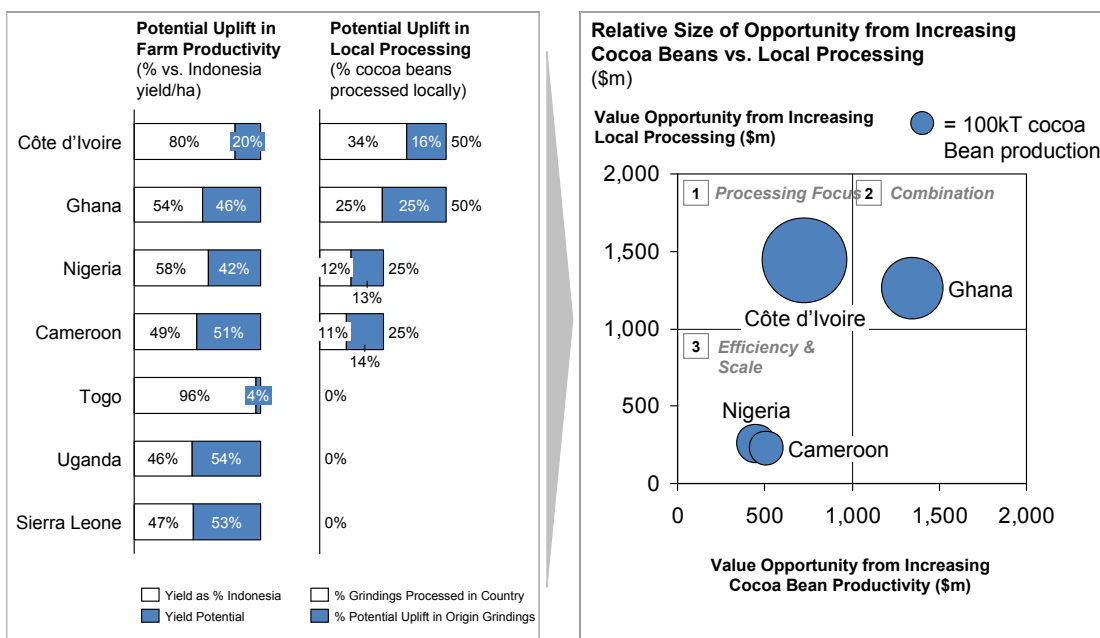
- 1) **Create a West African hub for cocoa bean aggregation** to collect volumes from multiple regions, to support the attractiveness of locating intermediate processing and chocolate manufacture in West Africa.
- 2) **Increase the value of raw cocoa bean production**, which can be achieved through:
 - A) Increasing volume – primarily through an increase in yields via increased use of fertilizer, pesticides, fungicides, planting of hybrid trees and improved husbandry (in combination, could increase yields from 400kg/ha to 980kg/ha).
 - B) Coordinating sales – between key West African suppliers by creating a quota system of sales either to smooth market prices or maximise revenues.
 - C) Addressing high value niches – niche markets, which although small are able to pay high prices, exist for cocoa that is certified as organic or fair-trade. A substantial level of activity is underway in the industry to certify the majority of African cocoa production as fair trade, in response to publicised targets from major chocolate producers. As a result, the relative fair-trade mark-up would disappear, as all beans would be fair trade. However, given that it is challenging to fully certify an agricultural

sector that is largely characterised by smallholder farming, a fair trade premium is likely to exist for some time

- 3) **Raise the proportion of origin grinding** through a combination of export tariff structures that favour semi-processed product exports (this is already being done to an extent today, but can benefit from alignment between countries) and incentives for investments in local production capacity.

African countries can be segmented into the available value capture opportunity either through their focus on cocoa bean production or through increases in local processing, as shown in Figure 23.

FIGURE 23: OVERVIEW OF AFRICAN COUNTRIES BY NATURE OF VALUE CAPTURE OPPORTUNITY¹³



SOURCE(S): "World Cocoa Economy," ICCO 2010; Dalberg analysis

The above analysis is intended to be indicative of the scale of the value capture opportunity and the relative balance available from focussing on cocoa bean production versus driving increases in processing. Based on this high-level analysis, Ghana appears to enjoy substantial opportunities for increased value capture in both cocoa bean production and processing; for Cote d'Ivoire, continuing to drive increases in processing would deliver significant value; while for Nigeria and Cameroon, opportunities exist in both cocoa bean production and in processing, although at a lower scale in absolute terms compared to Ghana and Cote d'Ivoire.

¹³ This analysis approximates the scale of the value capture opportunity from cocoa bean production by estimating the uplift in volume that would be achieved by matching Indonesia's yields, multiplied by the 2009/10 estimated ICCO price for cocoa beans. It holds the amount of land allocated to cocoa bean production constant. The scale of the value capture opportunity from cocoa bean processing is estimated based on assuming an uplift in the share of domestic production that is locally processed to 50% for Cote d'Ivoire and Ghana and 25% for Nigeria and Cameroon, based on discussions with industry players on what levels could be considered feasible for these countries in the long term.

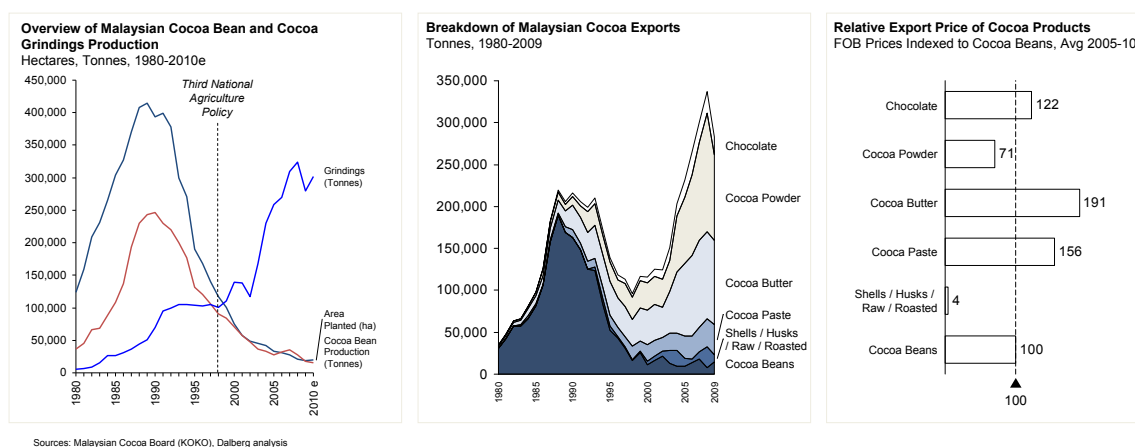
6. Malaysia: a Case Study of the Key Success Factors for Value Capture in the Cocoa Industry

BACKGROUND: MOVING FROM COCOA PRODUCTION TO HIGH-VALUE PROCESSING

Malaysia's economy in the mid-twentieth century was dependent on tin and rubber, which in combination accounted for more than 50% of its GDP. However, the introduction of synthetic rubber led to the collapse of rubber prices, exposing to the Malaysian government the risk of having such a narrow base for economic growth. In reaction, a **concerted and planned effort was made to diversify the agricultural base, including the introduction of cocoa and palm oil**, as well as the expansion of non-resource based industry in export processing zones.

Cocoa bean production rose rapidly to reach a peak of 247,000 tons in 1990, largely through the **expansion of land allocated to the crop**. Malaysian cocoa **volumes began to decline rapidly**, however, as a result of a shift in cultivation patterns toward palm oil in response **to the relatively low prices realized at the farmgate for cocoa, and the increasing burden of the cocoa pod borer** on yields and quality.

FIGURE 242: OVERVIEW OF MALAYSIAN COCOA INDUSTRY EVOLUTIONS, 1980-2010



From 1980, Malaysia's **intermediate processing sector also began to grow**, rising from a negligible level to an initial plateau of approximately 100,000 tons per annum in 1990. Malaysia's favorable **position as a market from which to serve emerging East Asian markets and the Middle East stemmed from the properties of its cocoa**, which generates a cocoa butter with a relatively high melting point, particularly suited to hot climates.

From 1998 onwards, the balance of the Malaysian market changed, with a rapid decline in cocoa bean production (due to the continuing burden of crop disease) that was matched by an **even faster increase in grinding volumes**. **This was a result of the Malaysian government's Third National Agriculture Policy (1998-2010)**, which had the stated aim to: promote the adoption of modern agricultural methods, including biotechnology through investments in R&D; develop Malaysia as a general agro-processing hub that combines processing, packing and marketing across a whole portfolio of agricultural products (including cocoa/chocolate, processed fruits and vegetables, essential oils, aquaculture feed); and develop key niches where Malaysia had potential comparative advantage, especially in Halal certification.

At the start of this policy in 1998, the Malaysian government put in place a substantial system of incentives to promote investments in processing, including:

- **“Pioneer status”** – a 5-year, partial income tax exemption, rising to 100% tax exemption for companies operating in the Sabah and Sarawak region
- **Investment Tax Allowance** – a 5-year investment tax allowance of 60% of qualifying capital expenditure, including clearing and preparation of land, planting of crops and creation of key infrastructure such as access roads and bridges. This particularly broad definition of allowable capital expenditure promoted the development of complementary assets with positive spillovers to the broader economy, fostering broader industrial development.
- A package of **further tax incentives for ‘Halal’ food production**
- **Eligibility of locally-owned manufacturing** companies with Malaysian equity of at least 60% and reinvesting in key sectors – including cocoa processing – **for another round of “Pioneer Status”** or investment tax incentives

The industry responded positively in response to these incentives. Processing has more than tripled since the introduction of the policy, leading Malaysia to become the fourth largest intermediate processing country in 2009/10, a shift in Malaysian exports away from cocoa beans to higher value cocoa paste and cocoa butter, and a growing (although still relatively small) export market in chocolate.

IMPLICATIONS: KEY SUCCESS FACTORS FOR VALUE CAPTURE

The Malaysian experience demonstrates many of the most important success factors required for countries to capture value at more advanced stages in the cocoa value chain. While substantial financial incentives have had an important role in promoting the development of the industry, Malaysia’s excellent logistics, the availability of reliable power and skilled management, and a close proximity to the growing Asian market have also been important contributing factors to the successful growth of the Malaysian cocoa processing industry.

In general, the most critical factors required to successfully capture more value in the cocoa value chain include:

- **A strong and well-tailored package of incentives to encourage investment:** Early movers into the cocoa processing sector need to overcome the lack of a broad-based cocoa processing industry and supporting activities in addition to the increased perceived risk; incentives that provide clearly defined terms for tax exemptions, with a clear skew toward capital investments, can offset initial costs for early movers. Malaysia’s particularly broad definition of allowable capital expenditures was also successful in encouraging the development of public goods (e.g. local transport infrastructure) by allowing early movers to capture a share of the positive spillovers they created.
- **Proximity to key (growth) markets:** Major players in chocolate manufacture require a locally addressable market of sufficient scale to justify making investments in local production; couverture manufacturers are generally forced by physical constraints to locate close to retail chocolate manufacture, while intermediate cocoa processors that are located close to couverture manufacturers enjoy significant advantages compared to players that need to ship processed cocoa over long distances. As a result, either a large market or fast-growing opportunity needs to be within the local reach of industrial players in order to be a feasible base for scale investments in the development of an entire agro-processing sector. In the case of Malaysia, its position close to South and East Asian growth markets made it attractive for international players seeking to make strategic investments to capitalize on the potential of the region.

- **Great logistics:** As a complementary factor to proximity, good quality road and port logistics, as well as fast turnover times at ports and borders are critical in the agro-processing sector in general, and certainly for the cocoa sector. The high quality and efficiency of Malaysian infrastructure favored the country above other potential processing locations in the Asian region.
- **Reliable power:** In order to avoid high spoilage costs associated with losing large batches of work-in-progress, reliable power is critical for cocoa processors. A reliable power infrastructure can substantially reduce costs by mitigating the need to invest in (or materially use) high-cost backup power supplies.
- **Effective knowledge transfer:** For countries intending to develop new sectors, it is critical that certain areas of knowledge and support skills are transferred to the domestic sector. This is not to capture and extract value from the intellectual property from international firms, but to ensure critical business continuity through the availability of local capability, and that the sector can fully leverage any advantages associated with relative labor costs rather than being dependent on international labor for key areas. It also fosters a local talent pool that can support growth. While not mandated, local ownership of more than 60% conferred sufficiently strong incentives for cocoa processors to be attractive.
- **Local ownership:** While encouraging local ownership is one mechanism for supporting knowledge transfer, it is also an important means for the development for a long-term sustainable sector. Local entrepreneurs are less footloose than major international players; as a result, countries with sectors that enjoy significant local ownership are able to reduce their exposure to any international competition for international investment through an ‘incentives beauty contest’ and take a longer-term view on promotion of the sector.
- **A pool of management skilled in industrial processing, especially agro-processing:** Malaysia’s sustained focus on agro-processing as a strategically important sector, combined with the availability of appropriate tertiary training, created a local talent pool able to support the entry and growth of players across the value chain, including in high-sophistication areas such as couverture and retail chocolate manufacture.
- **A differentiator:** In the case of Malaysia, the use of general Halal certification and associated incentives provides Malaysian players with significant advantages in tapping markets in the Middle East, which includes key growth markets such as Saudi Arabia. The use of beans with a high melting point – though in principle replicable by players located in other countries – creates a complementary point of differentiation in addressing both the Middle East and more proximate markets in South Asia. More generally, a point of differentiation can insulate countries from pure commodity-price competition, which can be critical in allowing early-stage of infant industries to generate sufficient margin to fund their growth to scale and maturity.

Just as important as the main success factors are areas that certainly are not important for capturing greater value in the cocoa value chain. As Malaysia’s experience demonstrates, significant production of cocoa beans is not important for the development of the sector; the ‘press margin’ earned by intermediate cocoa processors can typically justify shipping cocoa beans over long distances despite the additional costs incurred in shipping the beans’ water content and husks. For sectors that move into couverture manufacture and beyond, the price of cocoa beans is a relatively small share of the overall cost of chocolate production once sugar, dairy, stabilizers and processing costs are added.

7. Positioning of African Countries for Successful Value Capture

Major cocoa bean producers in West Africa typically enjoy substantial opportunities to capture more value in the cocoa value chain, either through driving increased value from cocoa bean production, from increased processing, or a combination of the two.

However, the feasibility of capturing greater value, especially through driving increases in local processing, is not entirely straightforward. Below Ghana's potential for successful value capture is reviewed, based on the success factors identified in the previous chapter.

FIGURE 253: OVERVIEW OF GHANA'S POSITIONING AGAINST KEY SUCCESS FACTORS FOR GREATER VALUE CAPTURE IN THE COCOA VALUE CHAIN

Success Factor	Positioning of Ghana	Comments & Observations
A strong and well-tailored package of incentives to encourage investment	Strong	<p>Ghana's system of incentives are primarily based on discounted access to local Ghanaian beans that are typically considered too small (and therefore more costly) to be attractive to sell on the international market.</p> <p>Companies located in Export Processing Zones (EPZ), such as the Tema EPZ, are able to enjoy a wide range of tax exemptions, including a 10 year exemption of all forms of income tax</p> <p>The combination of discounted access to local Ghanaian beans, especially in the current environment of growing cocoa scarcity, plus the highly attractive set of incentives for processors located in EPZ makes Ghana strong proposition for inward investment</p>
Proximity to key (growth) markets	Weak	<p>Ghana itself and West Africa in general do not constitute attractive markets for major retail chocolate manufacturers, as average chocolate consumption per capita is low, and the ability to export from Ghana to neighbouring countries is mitigated in reality by delays in crossing borders and tariffs.¹⁴</p>
Great logistics	Moderate	<p>Port logistics in Tema benefit from relatively strong local infrastructure and minimal customs formalities.</p> <p>However, distances and resulting travel time to key markets such as Amsterdam result in the need to solidify and then remelt key exports such as cocoa butter, leading to increased costs for clients, unless these are shouldered by the intermediate processor.</p>
Reliable power	Moderate / Challenging	<p>Export Processing Zones such as Tema have a dedicated power grid, although electricity supply in Ghana in general suffers from erratic supply due to aged and obsolete equipment, delayed</p>

¹⁴ Based on a universal consensus from interviews with players across the cocoa value chain

		expansion, inadequate transmission capacity and low voltages. As a result, even processors located in areas such as Tema require their own dedicated backup generation.
Local ownership	Challenging	Several local players exist – in particular the state-owned Cocoa Processing Company, Afro-Tropic Cocoa Processing and West African Mills. However, major recent investments by major multinational players are exempt from any requirements for local ownership, and now dominate Ghanaian processing volumes.
Pool of management skilled in industrial processing, especially agro processing	Weak	Ghana is considered a challenging environment to attract highly skilled labour for agro-processing, especially given competition from other sectors such as oil and gas.
Effective knowledge transfer	Challenging	Given the combination of intense competition for local managerial talent and the lack of local ownership or stakes in multinational investments, the newest facilities do not appear to successfully transfer knowledge to the local industry.
A differentiator	Moderate	Ghanaian beans are considered relatively high quality versus other growers of the same variety, especially in comparison with Core d'Ivoirian beans, due to generally superior post-harvest processing techniques. These techniques are in principle replicable, although Ghanaian beans successfully command a position in the industry as an 'essential filler ingredient in most chocolate recipes' ¹⁵

Ghana's rapid growth in processing volumes can be said to be largely a result of the attractiveness of its incentives package, which is able to leverage the importance of access to cocoa beans against a background of growing scarcity in cocoa. These incentives packages are attractive enough to effectively outweigh the current challenges in electricity supply, sourcing local talent and the relatively higher logistics costs involved in transporting intermediate processed outputs from Ghana, versus processors located close to consumption markets.

However, the lack of a proximate market for chocolate increases the challenge of developing a scale local chocolate manufacturing sector, suggesting that in the medium term, Ghana's processing opportunities are focused in developing local grinding. In this area, a lack of local ownership and a lack of knowledge transfer from the most modern parts of the sector present Ghana with a challenge to ensure that the development of its cocoa processing sector is not primarily incentive driven and externally led.

¹⁵ Quoted from a discussion with a leading multinational manufacturer of retail chocolate. This view is also supported by players at the intermediate processing and couverture manufacture stages of cocoa processing

8. Considerations and Steps Required to Develop Policy

The preceding chapters provide an overview of the key trends in the cocoa sector, the primary opportunities in value capture for African countries, and the key success factors required to capture a greater share of the cocoa value chain. However, at the country level, policy-makers need to consider a range of areas in order to develop a country-specific plan to catalyse and drive transformative growth in the cocoa processing sector. Below, we outline some of the key areas and considerations to be included in country-specific policy development.

A – IDENTIFY AND PRIORITIZE OPPORTUNITIES FOR VALUE CAPTURE

Although at a generic level three main opportunities have been identified for Sub-Saharan African countries in the cocoa sector to increase value capture (creating a hub for cocoa aggregation, driving increased value from cocoa bean production, raising the proportion of origin grinding), the prioritization of these opportunities will need to take into account several country-specific factors, including:

- **Baselining the current economics of the sector:** Policy-makers need to develop a robust understanding of the vertically integrated economics of the cocoa sector. This should include current efficiency level of cocoa production, and the scope and feasibility of increasing production, either through increased land allocation, increased yields, or both. This needs to take into account the increasing challenges in shifting cultivation patterns and in maintaining yields. An equivalent analysis for the cocoa processing sector also needs to be undertaken, with a review of the sector's current levels of operating capacity and efficiency, followed by an assessment of the sensitivity of costs to drive increases in production. This overall model should deliver a decomposition of cost in the value chain versus other international competitors, in order to identify both areas of advantage and key areas where the domestic industry needs to close a gap to ensure international competitiveness.
- **Forecasting the key variables that have the most impact on the economic viability of the sector:** This should at least include expectations of cocoa prices, at the FOB and farmgate level, and the likely reactions of traders and farmers to prices moving forward.
- **Sizing the opportunity:** Based on the above economic models and forecasts, scenarios need to be evaluated for the potential scale of the overall economic opportunity for scaling up production and processing.
- **Assessing opportunity costs for market participants in the sector:** This should include the opportunity cost of cultivating cocoa, and the relative opportunity cost of supporting cocoa versus other crops or other sectors, given limited financial and human resources.
- **Identifying areas of comparative advantage / disadvantage:** Some of the most important analysis in this area will include analysis of the relative costs of processing and couverture / chocolate production locally versus in competing markets, and an identification of the key sources of the current lack of competitiveness and areas for potential comparative advantage.
- **Outlining what policies would be required in order to take advantage of opportunities, and paring this back to what is possible:** For example, in the case of driving increased domestic cocoa processing, policy-makers need to take a view on the willingness and ability of government to provide sufficient incentives to attract inward investment. The ability to tolerate extended periods of limited fiscal returns from the sector – necessary to foster an entrenched set of long-term investments from major multinational players – also needs to be evaluated.

- **Prioritise opportunities:** From the above, a ranking of opportunities for value capture needs to be made, based on an overall assessment of the net gains, feasibility and risks.

B – IDENTIFY CURRENT POLICY BOTTLENECKS

Having identified priority areas for value capture, relevant policy bottlenecks need to be identified. At a generic level, some policy-created challenges include:

- **Materially different price setting and cocoa management regimes across countries:** The highly managed cocoa industry in Ghana includes the annual setting of farmgate prices for farmers, while deregulated industries in Cote d'Ivoire and Nigeria allow market participants to determine prices freely. As a result, differences in farmgate prices often exist for farmers who may be in close proximity, promoting smuggling across borders; it is estimated that 15% of Cote d'Ivoire and Ghana volumes are smuggled between the countries per year, with the level and direction of flows determined by the differential between prevailing farmgate prices in the two countries.
- **Challenging business environment for processors:** A lack of business and enterprise support and a lack of access to finance inhibit prospects for locally based and locally owned processors to emerge, especially given the comparative cost of capital for major vertically integrated multinationals. Local players also face the burden of obtaining licenses, delays in importing equipment and machinery through customs and high import charges of inputs.

C – DEVELOP KEY ENABLING INTERVENTIONS

Based on the opportunities for value capture and associated policy bottlenecks that have been identified, a policy-agenda to support a cocoa growth strategy can be developed. The policy-agenda for each country must necessarily be adapted to the needs and resources of each country, although some general themes may be shared. Beyond general measures that aim to improve the environment for agro-processing in general, such as improving the reliability and cost effectiveness of energy, improving road and port infrastructure, and providing investment incentives for industry, there are a few measures that potentially may be directed at the cocoa industry in multiple countries:

- **Aggregation of multiple origin beans for the processing sector:** For cocoa processors, being tied to a single origin of cocoa can create challenges in optimising input costs and in matching client requirements for specific taste profiles that may require Latin American and Asian beans. While African countries lack the financial infrastructure to be a natural commodity trading hub, the presence of a substantial quantity of West African cocoa, considered by the industry to be the critical 'base filler' for any recipe, combined with access to local supplies of beans from other key origins could eliminate a key comparative advantage for processors located near hubs such as Amsterdam. Industry participants state that, for a private sector player, importing beans from alternative origins into West Africa in order to process locally is currently not viable, but they note that a publicly backed scheme sourcing beans internationally and aiming to achieve substantial cost recovery from the private sector could be highly attractive.
- **Promotion of domestic demand:** The lack of a local or regional consumption market mitigates the underlying viability of investing in chocolate production, given the challenges of exporting final chocolate products, especially in cocoa growing countries with hot climates. Some leading chocolate manufacturers state that, regardless of local challenges of logistics, energy and scarcity of talent, a sufficiently large base of chocolate consumers would warrant their entry into the sector. But since any individual private sector player cannot fully capture the full benefits of demand promotion for the sector, efforts to stimulate

demand either will be absent or under-provided without public sector assistance. Mechanisms such as marketing subsidies for domestically-owned and operated chocolate manufacturers may be invaluable in stimulating initial local investment and expansion of existing, typically artisanal, players.

- **Targeted incentives and investment support, in conjunction with longer-term measures to reduce processing costs:** The case of Malaysia demonstrates that targeted and well-designed policies that support investments in the grinding sector can promote the expansion of cocoa processing. The combination of tax and investment incentives, which included infrastructure improvements and significant local ownership promotion, has to an extent supported Malaysia in overcoming historical challenges of poor infrastructure in rural areas, while ensuring some degree of knowledge-transfer from foreign players to the local industry.

The efforts of countries such as Ghana and Cote d'Ivoire to provide investment incentives should be recognised: International players say tax relief in Cote d'Ivoire and discounted access to local supply in Ghana have been effective in promoting new investments in the region, while the difficulties in receiving payment from investment promotion programs in Nigeria have been critical in contributing to the contraction of the processing sector there.

However, a roadmap for the sustainability of the sector, independent of subsidies, needs to be included in any plan to encourage entrants. Incentives therefore need to be pursued in parallel with measures to bring 'origin' cocoa processing costs to at least parity with processors in consumption markets. Industry participants note that although raw material and labour costs can be relatively lower in origin countries, this is offset by higher energy and logistics costs, and higher costs for importing and maintaining equipment. Measures aimed at improving the general conditions for industry and agro-processing therefore are critical if African countries are to shift the sector to a sustainable basis independent of support.

- **Export promotion:** Although some natural, comparative advantages of Malaysia – proximity to key growth markets in the Middle East and Asia, and the high melting point of Malaysian cocoa butter – are difficult for African countries to replicate, this can be partly compensated through support for exports, using models like the Brazilian support for the soybean sector, which provides grants of up to 50% of the costs for trade promotion activities undertaken by the private sector.
- **Promotion of African origin or niche cocoa products:** Although likely to be a small sector, there is scope for the development of a niche couverture sector that can export solidified products to chocolate manufacturers seeking single-origin or explicitly African-origin cocoa. Measures to promote the sector can enable domestic players to develop a produce-to-export industry of specialty, or single-origin chocolate from West Africa, that can support the development of market linkages in key consumption markets.

D – ADDRESS POTENTIAL POLICY TRADE-OFFS

Policy-makers typically need to take into account the reality that any sector-specific strategy must compete with many other, overlapping, and potentially conflicting, priorities. However, there are several additional policy trade-offs specific to the cocoa sector that need to be addressed when determining an overall approach to defining a cocoa strategy for any country, including:

- **Substantial intervention, versus a laissez faire regime:** Highly managed cocoa sectors such as Ghana are able to achieve greater price stability for cocoa farmers and achieve higher quality in output. However, market participants note that such systems create a large number of 'gatekeepers' and powerful interest

groups that often seek to extract rents. Laissez faire approaches to the market may remove such opportunities, but often lead to high volatility for farmers. In markets characterised by high levels of information asymmetry, such regimes typically lead to a lower share of value capture for those that have the least information, e.g. farmers in markets such as Cote d'Ivoire often capture a lower share of the FOB price of cocoa than in Ghana and Cameroon, as shown in Figure 13. An exercise to compare the regimes and decompose the drivers that impact farmgate prices would be a critical exercise in order to effectively understand the likely impact of different policy options.

- **Risks of retaliation:** Industry participants have noted that competition could emerge between cocoa consumption countries and cocoa production countries over the location of processing. The aggregated implication of countries' ambitious targets to process a large proportion of their cocoa bean volumes in-country is to encourage a contraction in activity in consumption countries, as forecasted volumes of bean processing will not rise fast enough to accommodate their expansion plans solely through the addition of new industry capacity. In this context, countries with existing processing capacity may take measures to protect the existing employment and spillover economic activity created by the cocoa processing sector.
- **Working through international players, versus developing domestic processing capability:** Major international players in cocoa processing with know-how and market linkages, such as ADM, Cargill and Barry Callebaut, can best position themselves to exploit any new cocoa processing opportunities in a way new entrants cannot. However, the ability to ensure knowledge transfer from international players to the local workforce often can be limited. Development of local capability can be slower and higher risk, and may require much greater financial support, given domestic players' difficulties in accessing finance.