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Towards More Socially Responsible Cocoa Trade

by
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“If the state is perceived as no longer to be relied upon to insure the quality and safety of the food we eat, of the air we breathe, or other environmental issues, a growing number of people are beginning to bypass traditional political channels and express concerns and demands directly to the bodies that are believed to be able to address their concerns, the corporations.” Noreena Hertz, “Shop, Don’t Vote,” *The Silent Takeover: Global Capitalism and the Death of Democracy*, p. 112.

Towards More Socially Responsible Cocoa Trade

Cocoa is a classic Third World cash crop. It is produced mostly by small, poor farmers in Africa, while its products – chocolate and sun tan oil – are consumed by rich consumers in North America and Europe. A few West African economies are highly dependent on foreign exchange earned from cocoa sales. It has therefore been targeted by Oxfam’s Fair Trade initiative, and IITA’s Sustainable Tree Crops Program (STCP) is launching an effort funded by U.S., Canadian and European aid agencies to change the nature of cocoa marketing to become more aligned with consumer’s social preferences.

The most obvious dimension to addressing consumer demand for cocoa products is to insure provision of high quality products, which has become problematic since structural adjustment programs have dismantled the African parastatals governing cocoa production and exports. Cocoa production would also likely meet requirements for organic certification in many instances, but legitimately obtaining that certification would be costly. Cocoa also offers several dimensions through which consumers might, by their market choices, insure more socially responsible outcomes. Both the STCP and Fair Trade initiatives focus on the potential for poverty alleviation and on achieving sustainable development for poor African farmers. Those farmers are stewards of the rain forest, and their production decisions can determine whether cocoa remains a rain forest friendly crop, so global environmental impacts can also be influenced by cocoa markets. The most recent, most widely publicized, and most intractable issue to hit the cocoa market is the allegation that child labor may be used on those poor African cocoa farms.

The first objective of this paper will be to describe this situation, and the problems of cocoa markets, focusing on what has been happening in Africa. Particular attention will be paid to the problems of implementing structural adjustment reforms, and the increasing role played by multi-national processors as they backward integrate into the African marketing systems. Then the Fair Trade and STCP initiatives will be described. Finally, a conceptual examination of marketing systems between the African cocoa farm and the chocolate manufacturer, emphasizing institutional arrangements, is used to assess the likely success of these initiatives in achieving their social goals.

The chocolate market is organized as it now is, and quality is largely determined in processing through cleaning, sorting and blending, to cope with the fact that government parastatals had kept chocolate manufacturers out of Africa. Since quality issues were resolved by processors, it is those multinationals who are the ones now in contact with African markets. The Fair Trade solution of partnerships between manufacturers and farmer cooperatives is likely to reach only a

niche of this market. Large scale efforts to pay farmers premiums would likely generate surpluses and so raise the policy dilemmas plaguing other agricultural markets. The STCP competitive market solution lacks expression of demand for social and quality attributes by consumers and chocolate manufacturers. Market power, which is alleged to exist at several points along the cocoa supply chain, limits the expression of this demand to farmers, who must by their practices determine most of these new quality characteristics. Economies of scale in marketing, distribution, and processing also dictate premiums to bulk sales, not quality, but offer opportunities for reducing the wide margins between the farm gate and chocolate factory.

Dimensions to Consumer Demand Driving Trade

If consumer demand is to drive trade in cocoa beans, that demand must be expressed in terms of the attributes of cocoa beans which consumers may desire. Cocoa bean attributes need to be classified into two distinct categories for this purpose: product attributes and process attributes. Product attributes are typically observable in the cocoa beans themselves, while process attributes concern methods of production (and possibly distribution).

Historically, cocoa beans have been traded as a commodity rather than as a differentiated product. While a small share of world cocoa bean trade may be in fine-flavored, organic or fair-traded beans, most trade serves a mass-market, and provides relatively homogeneous products in large quantities, and more importantly cocoa butter and power used in recipes for processed food products. Hence, differentiation, and premiums associated with that differentiation, are small, and accrue to nations, not smaller geographic units. While a debate exists over the future market for differentiated cocoa beans, the large chocolate manufacturers insist that overall quality of the large quantities of cocoa beans traded is of greatest concern. No chocolate manufacturer admits to selling any “low quality” products now. Thus, product attributes are now (and likely in the future) of only secondary importance, and are driven by minimum standards.

The best example of a process attribute is probably organic certified production. Organic certification involves utilization of specific methods by farmers, while excluding certain methods such as the use of chemical fertilizers, fungicides, and pesticides. Certification of this process attribute may mean consumers, and so manufacturers, are willing to pay a premium. While much of cocoa production may now meet standards required for organic certification, when disease or pest pressures arise chemical methods are the most prevalent solution now practiced. And certification requires observing the remote African cocoa farmers, which is likely to be costly.

The new initiatives addressing socially responsible trade in cocoa are more concerned with social attributes of African farmers, rather than characteristics of the products they sell or production methods they use. These are another set of process attributes. Overriding objectives of the Fair Trade initiative as well as the STCP pilot projects are poverty alleviation and fostering sustainable development in Africa. As noted above, it is also the case that methods of cocoa bean production may be associated with rain forest preservation. The most prominent issue receiving attention in the media now is the concern that child labor, under unsafe conditions and possibly as slaves, maybe used on cocoa plantations. The new marketing initiatives are concerned with all three of these dimensions related to conditions on African farms, and that consumers may wish to influence through their purchasing decisions.

A basic premise of each of the new initiatives directed toward cocoa marketing institutions is that costs along the cocoa supply chain are excessively large, and may be reduced by interventions, leading to higher prices paid to farmers as well as premiums reflecting process attributes consumers wish African farmers to provide. Whether foreign aid donations or private market solutions are better able to accomplish this is an issue closely related to intervention design. Both Fair Trade and STCP seek to use market solutions (price interventions), but under current institutional relationships processors, chocolate manufacturers or traders may capture the consumers willingness to pay for social attributes of farmers.

In the case of rain forest preservation, traditional methods may be rain forest friendly and so may be an appropriate means to sequester carbon. But new input intensive methods which promise higher yields may bring greater destruction of the rain forest. Thus, saving the rain forest may require that we keep poor farmers using traditional, low yield (and so low profit) methods. If Western consumers desire the benefits from rain forest preservation, will African farmers be compensated for this loss of income, and if so how?

The concern with child labor to some extent reflects a misunderstanding of the African context. Neighboring countries to Cote d'Ivoire, where the child labor problem is alleged to be the most severe, are much poorer. Labor opportunities on cocoa farms offer better economic prospects for people in Mali, Burkina Faso and Togo. And age standards for children (whether an 18-year-old is a child or an adult) are debated. Limiting the migration of such "children" to cocoa plantations may well make those migrants and their families back home worse off. Moreover, most of the children working on cocoa plantations are members of the families owning those plantations, and African plantations for cocoa are typically small farms (less than 10 hectares). But conditions of economic desperation may well lead to abuse and exploitation of labor, and so provide opportunities for the cases which have been the basis for media attention to this issue. The challenge is to prevent abuse, and allow children to escape from exploitive conditions, without eliminating the economic opportunities.

Much of the debate concerning cocoa quality confuses these issues, and the roles of the various process attributes that cocoa products sold to consumers may possess, by mixing issues and concerns of product quality with the issues around social/process attributes of African farmers. Whether cocoa is substandard, and so inadequate to use even in mass-market production, and if attributes may be identified with products that are related to process, needs to be sorted out in evaluating both recent market history -- the consequences of market evolution following structural adjustment reforms -- and the likely impacts of new initiatives. In doing so it will be useful to work with three categories of quality standards:

- Process solvable
- Premiums generating
- Absolute minimums

Process solvable standards are concerned with product attributes which would identify substandard cocoa -- cocoa that is wet, dirty or poorly fermented. Fair trade initiatives and STCP pilot projects want to establish standards where premiums are generated -- by differentiating cocoa products according to flavor-related characteristics, by certifying that products are organic,

and by associated premiums with carbon sequestered due to rain forest friendly production methods. Some see that labor standards relating to child labor in production and designing new market structures that increase prices paid to farmers for poverty alleviation might also fit in this category. But the industry sees child labor in the same category as cocoa with unacceptably high pesticide residues. That is, cocoa produced without the most abusive forms of child labor is a minimum standard nations must achieve, not a characteristic used to differentiate some cocoa beans from others in international trade.

Following structural adjustment reforms, new private institutions have been evolving in West Africa which may be providing increasing quantities of substandard cocoa produced under conditions some consumers may find unacceptable. That evolution has been quite different in each of the four principal cocoa exporting countries in West Africa. New initiatives and interventions in marketing institutions and organization are seeking to change that situation, but must operate within the context of those reformed, sometimes private markets. At issue here is whether markets can be reorganized to address these concerns, and how might those changes in market structure be brought about?

Background on World and African Cocoa markets

A basic understanding of the cocoa supply chain is necessary in order to assess role of international trade in cocoa beans and their products, and especially the role of processors and chocolate manufacturers. Figure 1 presents a simplified diagram of cocoa markets from the farm gate to the consumer. Farmers who produce cocoa beans sell their products to one of two marketing chains - either traditional local buyers and larger traders (who assemble purchases of those local buyers) or via cooperatives (producer organizations). There are many small, remote cocoa farmers (500,000 in Cote d'Ivoire and 200,000 in Ghana). Producer organizations hold a small and declining share of cocoa markets. Both sets of domestic marketing agents sell to exporters, who are associated with importers and processors in Europe and North America, or who trade on the London or New York commodity exchanges. A few exporters operate out of one or two ports in each country. Processors grind cocoa into butter, powder and liquor, which they sell to chocolate manufacturers and other food processors, who ultimately sell their products to consumers. Both processors and chocolate manufactures are somewhat concentrated multi-national firms.

Tables 1 and 2 provide background information on production and international trade in cocoa to verify some of the assumptions and perspectives taken earlier in this paper. Table 1 shows that 100 percent of cocoa bean production comes from developing countries, and 68 percent is from four West African countries: Cote d'Ivoire, Ghana, Nigeria, and Cameroon. Cote d'Ivoire is clearly the most important of the four, providing over 40 percent of world cocoa production. On the other hand, that table shows that 90 percent of net cocoa imports are by industrialized countries, with the European Union accounting for 38.7 percent of imports and U.S. for 36.9 percent of imports.

The four West African cocoa producing countries are highly dependent on cocoa production and exports, especially Cote d'Ivoire and Ghana. In Cote d'Ivoire, cocoa exports constitute 29.5 percent of total exports and 12 percent of GDP. In Ghana, cocoa exports are 44.1 percent of total exports and 11.4 percent of GDP. Most of those exports are in the form of unprocessed cocoa

beans rather than processed cocoa products. Cote d'Ivoire is the exception, with processed product exports in 2000 equaling a little bit less than a third of the value of cocoa bean exports. In Ghana and Nigeria processed product exports amount to less than 10 percent of bean exports. Historically, processed product exports from Africa have been judged to be of lower quality and so received lower prices than processed products from Europe or North America. Recently, African processors have been purchased by the multinationals who assert that products coming from the African plants is now of equal quality to product from the North American and European plants. In Asia and Latin America, more of cocoa bean production is processed locally.

Ruf has described cocoa as a frontier crop which is driven by cycles of prices, policy and disease pressure. Cocoa production originated in Latin America, but has diminished greatly in that part of the world mostly due to disease problems. Cocoa trees have historically been planted at the edge of the rain forest as timber is exploited. But cocoa requires shade and so replanting of trees, at least initially as plantations are established. Cocoa may be intercropped under traditional methods with either food crops or timber. New hybrid varieties require elimination of shade, so that fertilization can be effective. As trees age and disease pressure increases, plantations have in the past been abandoned in favor of new locations. One of the goals, particularly of the fair trade initiative, is to establish sustainable production methods which would not require further clearing of rain forest. And existing rain forest preservation efforts have limited the new lands available for cocoa production. This has not prevented cocoa production from increasing substantially in Asia in recent years. All of this is exacerbated by cycles of cocoa prices, with the recent low world prices and export taxes on cocoa discouraging replanting of trees.

Parastatal marketing boards managed cocoa production and marketing up to the exporting country border until the early 1990s. Systems differed somewhat in the former French colonies (Cote d'Ivoire and Cameroon) versus the former British colonies (Ghana and Nigeria). The objectives and operations of these parastatals were nevertheless quite similar in the four countries. Each of these agencies taxed exports while seeking to stabilize domestic cocoa markets. They also provided a number of public goods, including research and extension services pest and disease control efforts, market information services, and regulations governing cocoa commerce. In addition, in order to maintain competitive domestic markets, these public agencies kept multinational chocolate manufacturers and cocoa processors outside of African borders.

These parastatal agencies have been the targets of structural adjustment reforms in each of these four countries. Allegations of corruption, inefficiency and high cost led to the belief that private markets would more efficiently provide the services of these agencies. Moreover, currency crises made it extremely difficult for these agencies to stabilize farm prices and domestic currencies for what is essentially a cash crop. This led to unacceptable variations in both the degree of export taxation and variability in farm prices. Hence, these agencies failed at one of their primary missions - to stabilize the domestic market.

Structural adjustment reforms and the elimination of the cocoa parastatals came first to Nigeria in 1986. Nigeria's cocoa sector has not yet completely adjusted, with both production and exports declining following these reforms. Structural adjustment in Cameroon came next, in two phases in 1991 and 1994. Both Nigeria's and Cameroon's structural adjustment processes have been described as chaotic, with incomplete replacement of marketing institutions (Gilbert). As a

consequence, Cote d'Ivoire and Ghana have resisted structural adjustment reforms. Cote d'Ivoire finally liberalized domestic cocoa markets in 1999, but with substantial continued state involvement in the sector. In Ghana the parastatal marketing board Cocobod persists.

In the chaos which followed initial structural adjustment reforms in Nigeria and Cameroon, two specific problems can be identified. The first was loss of public goods associated with cocoa production and distribution. The private sector simply did not provide these goods. Research activities diminished and extension services disappeared. Pest and disease control remains better in Ghana, where the parastatal persists, than in the other three West African cocoa producing countries. Regulations governing cocoa commerce have been slow to evolve, as have been public market information services. The more complete the reforms, the greater the degree of domestic market instability, as well. The second problem is that there is a need for institutional innovations when public marketing boards are replaced by private agents. Both new regulations and new marketing intermediaries need to emerge. This process has not been automatic, and even where this was recognized as a problem (in Cote d'Ivoire) market institutions continue to evolve following reforms.

One of the more important evolutions impacting West African cocoa markets has been the backward integration of multinational processors into those markets. Those multinational firms have integrated activities of marketing, distribution, exportation, and processing. They are through this integration able to capture much of the value added in marketing associated with both domestic and international cocoa markets. They are better able to exploit scale economies in marketing and transportation. For example, shipping cocoa in bulk on back hauls of grain vessels or in containers has been replacing trade in the traditional 62.5 kg bags of cocoa. This bulk handling of cocoa is done almost exclusively by the large multinational exporters, at a cost well below that faced by local exporters. Scale economies lead to concentration. Immediately following structural adjustment reforms in Nigeria and Cameroon hundreds of exporters emerged, but they quickly failed, and only a few exporters remain. In Cote d'Ivoire just three years after liberalization there are 40 registered exporters, but ten control over 90 percent of the market. Legislation prevents market shares of these exporters from increasing. Concentrated exporters can potentially exercise market power both against farmers and traders in the African countries and against chocolate manufacturers in Europe or North America.

The extent of market power exercised by multinational cocoa processors is the subject of much speculation, but little hard evidence exists to verify or refute the importance of this market power (Fold, Losch). What evidence does exist is in the form of concentration ratios at various stages of the supply chain. The ten exporters in Cote d'Ivoire would not come under scrutiny, based on concentration ratios (four firm ratio at about 40%), in Western countries. Similarly, four cocoa processors (ADM, Barry Callebaut, Cargill, and the Hosta group) account for 40% of processed cocoa products worldwide. Chocolate manufacturing is also somewhat concentrated, with Hershey's, Mars, Kraft, Ferrero, and Cadbury accounting for 50% of cocoa product use worldwide.

International Trade in Cocoa

As shown in Tables 1 and 2, since there has been historically little processing of cocoa in Africa, exports have closely matched production. In 2000, only 8% of beans were processed in Africa,

and the remainder were exported. Both tax incentives offered by African governments and the advantages under backward integration have encouraged the multinational processors to build plants in West Africa and to buy African processing firms. In the past African processing firms used lower quality beans, while exporting the higher quality beans. Storage of cocoa has also been in Europe and North America because temperate, semi-arid climates are better suited to storage. Storage is also accomplished using butter, powder and chocolate products as well as cocoa beans.

Cocoa beans are traded on commodity exchanges in both London (LIFFE) and New York (NYBOT). Futures markets have been used extensively by multinationals, who as intermediaries must buy and sell commodities at different points in time and space under conditions of highly volatile prices. Parastatal marketing boards in the West African countries also traded on futures markets to assist in their efforts to stabilize domestic markets. Transactions costs for local traders, producer organizations, and farmers may well be too large for them to utilize these markets.

Figure 1, from the annual report of the International Cocoa Organization (ICCO), shows prices, production, grindings, and stocks of cocoa from 1960 to the present. It demonstrates the high volatility of cocoa prices and that prices in the 1990s were at generally low levels. Since production has not kept up with demand recently, and there is civil war in Cote d'Ivoire now, prices in 2002 have once again reached relatively high levels. In the face of these volatile world prices, both national governments and the ICCO have attempted stabilization. These efforts have generally been regarded as a failure (Maizels, Bacon and Mavrotas), and the ICCO abandoned its stock holding to support prices in the early 1990s.

The share of cocoa bean prices on the LIFFE or NYBOT exchanges accruing to farmers has been low, and the share of cocoa in the cost paid by consumers for chocolate is low, as well. Table 3 provides two snapshots of prices and imputed margins along the cocoa supply chain (based on the simplified characterization of intermediaries from Figure 1). Season average prices for the 2000/2001 season, when price levels were typical of those found also in the 1990s, and the high prices in January, 2002 are reported there. These data are assembled from numerous sources, and are at times verified by additional sources, but in some instances are quite uncertain. Import and export prices, including those for butter and powder, are based on unit values from USITC and Eurostat, confirmed by NYBOT, LIFFE and ICCO prices. Farm gate prices and African port prices come from national governments and press reports (Dow Jones). Ocean freight is from USITC, and comparable numbers came from local exporters. Margins were calculated as differences from these observed prices. Hence, small differences in margins should be ignored, while large differences raise red flags and merit further investigation.

For Cote d'Ivoire, the large trader margins and large export taxes, which increased as world prices went up, are noteworthy. Exporter margins on the other hand are relatively small. In Ghana, where a government parastatal agency, Cocobod, is the exporter, shows very large export taxes -- which include both direct export taxes and the margin accruing to Cocobod. Domestic trader margins are smaller than those found in Cote d'Ivoire. In Cameroon, where liberalization has occurred to the greatest extent, trader and exporter margins appear to be extremely small, in spite of complaints about chaotic marketing institutions. (Farm gate prices here are among the

least reliable, both in terms of level and where they are measured.) All sources report wide variations in farm gate prices, which may in part reflect exploitation of very remote farmers by the few local buyers who serve them. Relative to these margins occurring within the African borders, grinding margins to processors in 2000 appear quite large, but fell dramatically as world prices increased in 2002. Both scale economies in processing, marketing, and distribution as well as market power may lie behind the larger observed margins.

The import price data in Table 3 reflect small differentials in cocoa bean prices based on national origin. Traditionally, and currently, in this market prices --including those on commodity exchanges -- differ by exporting country. This is the manner by which quality differentials are now expressed in cocoa prices, along with discounts for substandard (e.g. wet, dirty) cocoa. Figure 3 shows how these national cocoa bean prices have varied over time relative to the ICCO price index. Those differentials have been small, but Ghana has consistently maintained a premium for its quality. Declines in quality differentials are also evident for Cameroon and Nigeria following structural adjustment reforms. West African cocoa beans also sell at a premium relative to the lower quality beans from Asia. This determination of premiums by national origin reflects to some extent the simplicity of market institutions which cope with quality differences now.

Quality Determination

One of the concerns raised about post structural adjustment cocoa markets, and especially about backward integration of multi-national processors, is that cocoa bean quality has been deteriorating (Gilbert). Before considering what this means, and its implications, is useful to examine how cocoa bean quality is determined. Product attributes of cocoa beans are largely determined by farmer practices.

There is relatively little genetic variation in cocoa trees, and even less research on that variation. The importance of variation by national origin, and even between regions within nations, is claimed in some anecdotes. But chocolate manufacturers disclaim the importance of genetic variation. Rather, they require large volumes not specific variety niches. For them, differentiation on the basis of national origin has been sufficient to match supply with their quality requirements.

Cocoa bean quality can be determined as a consequence of disease and pest pressure. Both damaged beans and pesticide or fungicide residues are potential concerns. Good farmer practices can minimize or cope with these problems.

Of even greater importance to quality determination are post harvest practices, which tend to be very labor-intensive operations. Cocoa bean pods must be gathered from trees. The pods must be opened. Beans within the pods must be fermented, and then dried. Each of these steps takes both time and labor. Poor quality beans arise both from lack of time devoted to fermenting and drying, and from practices to reduce labor requirements of operations (e.g. opening pods with machetes, use of fire and so smoke to dry beans). Asian cocoa beans are reputed to be of lower quality because the larger plantations there employ practices to save labor, resulting in poorer fermentation and drying, not because of differences due to the genetic stock.

The marketing system can also influence the quality of cocoa beans. Poor handling along the marketing chain, and in particular keeping wet beans too long in the system before those beans arrive in the hands of exporters, can result in wet and moldy beans. Exporters must therefore dry many beans once purchased. Another of the ways the marketing system adds value is by sorting, blending, and cleaning beans at the port. In Cote d'Ivoire this final processing of cocoa beans before export is termed "usinage", and this a mandatory step before exportation. It has been argued that Ghana's high quality is maintained by this usinage operation conducted by Cocomob.

Processors are also involved in determination of quality. In addition to cleaning, blending and sorting beans, grinding and processing are utilized to obtain product characteristics desired by chocolate manufacturers. In fact it is the processors, not the chocolate manufacturers, who work with cocoa beans to maintain quality, and they have become quite skilled at working with the variations in bean quality obtained from African origins over time and space. As noted earlier, this evolution towards quality determination in processing is likely to be a consequence of the fact the chocolate manufacturers were kept out of Africa historically by the parastatal marketing boards. Moreover, the activities now conducted by processors are similar to the operations these same firms conduct on other agricultural commodities. One of the reasons why the processors are backward integrating with exporters, and even local traders or coops, is to insure higher quality cocoa bean supply.

It is necessary to understand that the perceived quality problem is mostly one of substandard cocoa, and not one of cocoa lacking certain process attributes. The quality standards to be addressed are those which may be process solvable, and for which limits to the ability of processing to solve quality problems may be reached in the near future. Issues related to social attributes of farmers are distinct and separate concerns. In particular, the child labor problem is one in the industry believes must be addressed as an absolute minimum requirement on a national basis, not by niche market solutions. Hence, the chocolate industry sees that neither the Fair Trade initiative nor the STCP pilot projects are vehicles for solving this perceived quality deterioration.

Several reasons may lie behind the perceived quality deterioration in cocoa markets. Low prices do not provide incentives for labor-intensive farmer practices. Hence, some of the activities needed to be performed by farmers to maintain quality may not be perceived by them as profitable.

There also appear to be market failures in quality incentives. While discounts for substandard cocoa are standard practice on the commodity exchanges, and while exporters claim to discount, particularly for poorly fermented, wet beans, no quality differentials are evident in farm gate prices. Producer organizations acknowledge that all beans bought from farmers receive the same price. While producer organizations claim to reject substandard beans, inspection of invoices at one of the better cooperatives revealed that is often not the case. Particularly in recent markets, with an apparent shortage of product, volumes not quality have been driving demand for beans. The consequence of this rush to market is short fermentation and drying times leading to low quality beans. Moreover, producer organizations report receiving premiums for bulk sales but not discounts for low quality.

There is evidence of scale economies in marketing, distribution and drying at the port which can lead to incentives for volume over quality. Transportation within country is in some ways similar to international transportation. Larger vessels, and trucks, sufficiently utilized are cost-effective. These scale economies will get in the way of other process attributes being transmitted via the market from consumers to farmer.

Some of the evidence on quality also seems to be flawed, in that it is based on national grades and standards which are irrelevant to LIFFE or NYBOT contract terms. For example, it is possible for cocoa beans in Cote d'Ivoire to be graded No. 1 and fail minimum contract requirements in London, while beans graded No. 2 meet the London standard. In liberalized markets it is the international standards which matter, so that evidence of greater fractions of Ivorian beans exported as No. 2 may simply be a reflection of the quality standards now demanded in the market. Exporters also report that some components of LIFFE or NYBOT standards may be of less relevance to their quality concerns. Of greatest concern to them are fermentation and moisture levels, not the extent of foreign matter - which is the basis for differences between Ivorian and LIFFE/NYBOT standards.

Fair Trade and STCP Initiatives

There are two initiatives which take as a primary objective improving the welfare of small cocoa farmers and achieving sustainable development in the rain forests of West Africa. The first initiative, Fair Trade, is spearheaded by Oxfam and its Fair Trade Foundation, which began in 1994. It was preceded by a fair trade initiative of the Max Havelaar Foundation that began in 1993, and which is operated primarily in Latin America. The Make Trade Fair initiative now focuses more on coffee and has been more successful with that commodity. 20,000 tons of coffee are fair traded out of 6 million tons of world trade in coffee. Fair trade in cocoa amounts to only about 2,000 tons. Nevertheless, increases in the small market share accruing to Fair Trade cocoa have occurred over the eight years of this activity.

Oxfam's fair trade initiative in West Africa operates in Ghana with the producer organization Kuapa Kokoo. This producer organization includes 468 Village cooperatives and over 30,000 farmers (of the 200,000 cocoa farmers in Ghana). Only about seven percent of Kuapa Kokoo's cocoa is fair traded, however, equaling about 1,000 tons, or about half of the world's fair trade in cocoa. Farmers belonging to Kuapa Kokoo in principle receive a guaranteed minimum price of \$1,600 per ton and a fair trade premium of \$150 a ton. Since the parastatal Cocobod continues to manage Ghana's exports, and sets a fixed-price for farmers, fair trade premiums are used mostly to fund community development projects. As a consequence there has been substantial investment in communities, and market activities such as credit provision are better performed, with less corruption, in cooperatives belonging to Kuapa Kokoo. While under partial liberalization the government of Ghana has in principle agreed to allow private entities to export up to 30 percent of the cocoa they buy from farmers, no exports by private entities have yet occurred and Kuapa Kokoo continues to work through Cocobod as its exporter.

An important feature of the fair trade initiative in cocoa is the partnership between Kuapa Kokoo and Day Chocolate in the United Kingdom. Kuapa Kokoo owns 33 percent of Day Chocolate, with Oxfam and the Body Shop owning the remainder. Thus, producer organizations are able to

more closely link their activities to consumer demand through ownership of a chocolate manufacturer. And without this link there would likely not be a market demand for Kuapa Kokoo's fair traded cocoa. Recently, links with the United Kingdom's distribution network have also been established.

The Fair Trade Foundation certifies cocoa produced by Kuapa Kokoo as meeting fair trade standards. Conservation International is also involved in this partnership, working with rain forest preservation near Kuapa Kokoo villages, and certifying environmental practices.

Critics of the Fair Trade initiative raise two concerns. Supply-demand imbalances and price cycles in cocoa have historically led to surpluses, so guaranteed minimum prices would likely bring substantial excess supply over demand if they became widespread. But Fair trade in cocoa now only serves a very small niche market. Lass estimates that all niche markets in cocoa, including fair trade, organic and fine-flavored cocoa now amount to only 2.6 percent of world cocoa bean trade. Moreover, only a small fraction of Kuapa Kokoo's production is fair traded. Those critics believe this initiative is destined to serve only a small niche of African farmers, and if it became larger, costs to guarantee minimum prices would become unsustainable. They believe fair traders are already experiencing difficulty paying premiums over the high prices now found in world cocoa markets.

A second initiative with the objectives of poverty alleviation and sustainable development for West African farmers is the STCP Pilot projects being launched by IITA, with funding from USAID, and aid agencies from Canada, Germany, and other countries. A goal of these projects is to have a more widespread impact than its architects believe are achievable under the Fair Trade model.

The STCP pilot projects intend to work through two channels. One objective is to strengthen producer organizations in cocoa producing countries. To some extent this reflects an effort to copy the success of Kuapa Kokoo. Socodevi in Cote d'Ivoire has also been successful in improving the functioning of a few producer organizations and so improving the welfare of farmers belonging to those organizations. Following structural adjustment reforms and market liberalization, producer organizations in Cote d'Ivoire, Cameroon, and Nigeria have not fared well, so one goal of this initiative is to improve the standing of those organizations. It is believed that better functioning producer organizations can eliminate unnecessary intermediaries along the cocoa marketing chain and so reduced margins between farmers and the ports (shorten the marketing chain). It is also believed that these producer organizations may be able to negotiate better terms with the concentrated exporters, potentially exerting some countervailing market power. They may also take on certain value added operations, such as usage or even exporting. And the most often cited problem of producer organizations is lack of access to credit, which more business like cooperatives would gain better access to.

The second channel which STCP pilot projects have explored is by creating infrastructure to electronically market unique attributes of cocoa from the producer organizations strengthened by those pilot projects. This "infostructure" model proposed by Sigley and Hogsboro would seal electronically tagged bags of cocoa at the farm gate. This would require moving testing for quality of cocoa beans much closer to the farm gate, preserving the identity of individual lots of

cocoa from the farm gate, and establishing procedures for certifying both product and processed attributes at the farm. Sigley and Hogsboro have proposed an Internet based marketing system to track lots and permit trading of individual bags of cocoa with farm specific identity.

Tracking cocoa bags back to the farm is in fact not new to West African cocoa trade. The parastatals have done this in the past, and Cocobod continues to maintain identity preservation of lots of cocoa, though not in an electronic medium. One issue is cost, not feasibility, of this option.

Critics of this approach cite two further problems. Identity preservation is only valuable if differentiating at the farm gate is meaningful. Right now it is not clear that the market demands this degree of differentiation. The proposed approach is capable of delivering supply of differentiated products to African ports, but it is not clear who would purchase those products or what premiums would be paid for the differentiation achievable through this infrastructure. Secondly, marketing intermediaries have observed that both differentiation and identity preservation are subject to scale economies, and so are much cheaper the closer to the port it begins. Differentiation and identity preservation at the level of producer organizations is likely to be far less costly, and differentiation at the port involves even lower cost. In fact the trade is moving in the opposite direction, handling larger lots and paying premiums for bulk not quality. If differentiation is to involve processed attributes, such as labor standards, rain forest preservation, or poverty alleviation, then certification of those attributes is necessary. Critics are concerned with the difficulty, credibility and cost of certification and again argue it is likely to be more effectively done at the producer organization level (or nationally) than at the farm gate.

Conceptual Framework

A conceptual framework is needed to evaluate the alternative institutional arrangements under the different models of cocoa marketing that both existed in the past and have been proposed for the future. The different evolutions of cocoa markets after liberalization in these four West African countries point to the need for assessing alternative institutional arrangements in that framework, going beyond simple supply demand analysis. Market failure, integration by intermediaries and the extent of their market power, and the degree to which margins are reduced and prices or premiums are passed back to farmers, all need to be assessed in that framework. The framework begins by identifying and categorizing alternative cocoa marketing and trade “models.”

Six basic marketing models may be gleaned from the previous discussion, or need to be considered in order to evaluate new initiatives to improve the functioning of these markets:

- Parastatal management
 - Caisse (French)
 - Marketing Board (British)
- Free market chaos
- Integration backward by processors
- Contracting
 - Fair Trade
 - Multi-national processors/ trader & coops

Infostructure (STCP pilot projects)
Commodity market reforms (Usinage)

As noted earlier, **parastatal management** came in two forms: the Caisse system of former French colonies (Cote d'Ivoire, Cameroon) and the marketing board system of former British colonies (Ghana, Nigeria). The key characteristic of this system, in either form, is governmental control of marketing from the farm gate through the port to the African country border. This may be accomplished via strict regulation or by the state actually conducting marketing operations. Domestic marketing and exporting are integrated, and farm gate prices tend to be subject to substantial export taxation. Inefficiency of public marketing has been cited as a weakness of this model. It was targeted for elimination under privatization initiatives of structural adjustment reforms.

Free market chaos best describes the situation that exists now, and more so just after liberalization, in Cameroon and Nigeria. While the private sector takes over marketing activities, a number of functions conducted by the parastatal are lost, and regulation of cocoa commerce takes time to get right. Prices to farmers appear to be highest under this system, but it seems unstable and tends to evolve towards backward **integration** of domestic traders with multinational exporters and processors. This latter case describes the evolution most evident in Cote d'Ivoire today.

Both the Fair Trade initiative and newer variants on the backward integration model are best characterized as **contracting** modes of operation, since an important feature is partnerships among various intermediaries. This evolution of markets is not dissimilar from what one finds in many Western agricultural markets, especially where manufacturers desired specific product attributes. It is noteworthy that Fair Trade and the mode involving multinational firms follow similar institutional arrangements, with potentially key differences due to differing objective functions of the marketing intermediaries. While Kuapa Kokoo has formed partnerships with Day Chocolate, coops in Cote d'Ivoire (e.g. Scagbo) are forming partnerships, often informal, with ADM and Cargill.

The STCP pilot project model, **infostructure**, is characterized by electronic marketing of identity preserved bags of cocoa beginning at the farm gate. It offers the potential for highest premiums to both product and process attributes, but only if that demand is publicly expressed by chocolate manufacturers.

Another initiative labeled **commodity markets**, not discussed earlier, concerns efforts by the commodity exchanges to address problems of deteriorating quality (Sigley). These include rewriting contract terms to better reflect quality and possibly the model of identity preservation beginning at the port, as may be evolving in Cote d'Ivoire. These efforts reflect a concern of the commodity exchanges that they may become less relevant should contracting modes expand greatly, and that quality problems due to market failure in existing free market systems must be addressed. Since proposals along these lines have not been fully elaborated, it is not clear the extent to which these markets can write general contracts meeting specific needs demanded by consumers, manufacturers, and processors.

These models of marketing systems describe five key elements of any market: the buyers, the sellers, intermediaries, infrastructure and logistics, and institutional relationships. While we typically think of sellers always remaining farmers, and buyers incorporating chocolate manufacturers and ultimately consumers, each model specifies different degrees of integration among intermediaries. Those relationships govern who owns the infrastructure and logistics, and so receive the value added from that public or private capital. They also determine where market power may be found. Institutional relationships between buyers, intermediaries and sellers, which can differ by model, include the following non-exhaustive set of items:

- Government regulations and legal systems
- Contracts and their terms (on commodity exchanges, with partners)
- Informal relationships
 - e.g. multi-national exporters working with coops
 - or processors allegedly providing region specific cocoa to manufacturers
- Warehouse receipts – for trading in ownership, collateral
- Stabilization (futures markets, variable export taxation), and
- Risk – including how are defaults and disputes handled.

Table 4, adapted from Masters and Abbott, can be used to examine how each of these market elements is expressed under the marketing models identified above. Each column in that table represents one of the marketing models: the first two columns are parastatal management options and the last three columns portray alternatives with identity preservation necessary for premiums to accrue to process attributes. Middle rows represent the free market chaos following reforms, and its evolution toward backward integration by processors. Each row identifies an agent in the market and describes the activities performed by that agent. Boxes are used within the table to identify market integration of intermediaries characteristic to the alternative models. Cases for which each model is relevant are also identified in the table. Finally, the table identifies the degree of product differentiation likely to be achieved under each model as well as the potential for market power due to that integration, and consequently the level of farm gate prices realized.

According to this analysis, and based on observations of markets, product differentiation is potentially highest when it begins at the farm and when it involves some identity preservation option. It is lowest under free market chaos and bulk handling regimes that have evolved from market liberalization. In the parastatal management mode market power lies with the government who uses it to keep farm prices low but stable. Under the post reform free market models market power seems to move towards concentrated traders or integrated processors and traders. Differing degrees of market power are achievable under the identity preservation options depending on which agents are part of the market integration. The advantage of the fair trade model is that its partnerships involve producer organizations, who will realize some of the benefits of both scale economies and market power under that mode. The lack of market integration in the infrastructure model is likely a reason why it may not work, and in particular why demand for the potential degree of product differentiation will not arise.

The final piece of this analysis involves identifying potential market failures that interventions such as Fair Trade or the STCP pilot projects might address. Interventions will succeed, and will

give rise to new market institutions better serving farmer or consumer interests, only if they correct one or more of these market imperfections. These include:

Spatial Oligopsony

- remote farmers served by only one, or very few, local buyers may be exploited – getting low farm gate prices.

Exporter concentration

– market power or collusion among concentrated exporters could lead to large exporter margins.

Missing markets for quality

– no premiums or discounts for quality are now passed back to farmers.
- no demand for process attributes by chocolate manufacturers or processors.

Credit market failure

– traders, but not coops, are now lending to farmers.
- defaults by coops, so banks are not lending to them.

Scale economies in assembly, distribution and transportation

- Logistics and infrastructure for transportation, storage, conditioning, blending

Market Information

- a public good needed from the public sector by both farmers and intermediaries.

Each of these problems is perceived to exist (subject to varying degrees, and subject to debate about its relevance) under post reform marketing models. Some problems (spatial oligopsony, credit market failure) might be addressed by better functioning producer organizations without innovation in marketing structure. Other problems (market information) are public goods which need to be provided by government. The remaining problems, directly related to marketing, are addressed to varying degrees by the proposed Fair trade and STCP initiatives. Only if these latter problems are solved, and especially the problem of missing markets for quality, will consumer demand for process attributes be passed down from consumers to the farm gate.

Scale economies should probably not be included on a list of “market failures,” but they have been a key feature of these markets leading to concentration, and driving premiums for high volume not quality. Interventions, if effective, will need to take advantage of these to compete against processors who now realize benefits to scale. They are an important factor limiting signals on consumer demand, particularly for process attributes, from being transmitted along this rather long supply chain. If scale economies and concentration lead to agents with market power, consumer willingness to pay is also likely to be captured by intermediaries as rents. Hence, models with market power will be unlikely to transmit demand signals unless farmer organizations are partners in the entity governing marketing activities. Traditionally, institutions to reflect quality premiums or discounts have been simple, and markets have been missing for quality close to the farm gate.

Will Consumer Preferences Drive Cocoa Production and Trade?

The conceptual framework described above together with information on the evolution of West African cocoa markets, and in particular the different situations found in each of the four

countries, allows us to make assessments of initiatives to enhance welfare of cocoa farmers and to better align market outcomes with consumer interests. Three cases should be emphasized: the Fair trade initiative and STCP pilot projects, which seek to directly address both of these objectives, and the sometimes contrasting evolution of reformed African cocoa markets.

Fair trade has been successful at raising economic welfare for those farmers belonging to cooperatives which participate in this initiative. Unfortunately, that initiative has been able to serve only a small fraction of the world cocoa market, and only a small fraction of the production of those participating cooperatives is fair trade as well. It is the nature and magnitude of consumer demand for process attributes which likely limits the prospects for this initiative. The limited extent of willingness to pay by consumers for poverty alleviation and sustainable development is likely to be the limiting factor to expansion of this initiative. The greater success for coffee can probably be attributed to several factors, including the fact that consumers buy coffee beans directly, whereas cocoa beans are used as ingredients in recipes and never purchased directly by consumers. Hence, the cocoa supply chain is longer, indirect and more complex. In addition, coffee plantations and coffee cooperatives are larger and so they are easier to target than are cocoa cooperatives

If the cocoa Fair Trade initiative were able to expand to a larger scale, problems found in implementation of agricultural subsidies would likely arise. Higher, guaranteed farm gate prices would likely give rise to surpluses in cocoa production, so this initiative could be quite expensive if it expanded beyond niche markets. It is noteworthy that Fair Trade has worked most successfully in Ghana's state controlled cocoa sector, where farm gate prices are fixed and so the premiums to Fair Trade must be distributed as decoupled payments for development projects in the communities where participating cooperatives are located. The premiums accrue to development projects and not higher prices (and so that there are not incentives for surplus production). This is an advantage of this outcome which probably should be preserved in other efforts to achieve the same goals, even if this decoupled form of payment is not the professed goal of Oxfam, who would rather see "fair" prices.

It is also important to note that success under the Fair Trade initiative occurs because of partnerships established between the producer organizations and chocolate manufacturers. This outcome replicates the evolution of specialized commodity markets to meet consumer, processor and manufacturer objectives in the U.S. and Europe, by allowing the manufacturers to better align their products with both consumer interests and farmer preferences. Two dangers exist. If manufacturers or processors enjoy economies of scale or market power, consumer willingness to pay for process attributes is likely to be captured by those intermediaries and not by farmers. Asymmetric market power between members of the partnerships may also mean even under contracting arrangements, premiums to process attributes accrue more to the multi-national firms than to farmers. Estimates of the sharing of premiums under Starbucks arrangements with Mexican cooperatives who provide shade tree coffee, where farmers get less than a third of the premium paid by consumers, highlights this fear (Master and Abbott). Oxfam's initiative has done better in that regard. The question which remains is how likely are corporations to address social object objectives along with profit?

The desire of STCP pilot projects is to have a wider impact on farmer welfare than is possible through the Fair Trade initiative. It has proposed a competitive market solution to marketing of differentiated products which incorporates both process and product attributes. While the capability of delivering products with identity preserved attributes appears feasible, cost is likely to be very high. Economies of scale and identity preservation argue that differentiation is less costly if it begins at the port or at least at a cooperative, not at the farm. Then producer organizations are essential to ensure that farmers share in any premiums accruing to that differentiation. Moreover, credible certification of process attributes is both costly and difficult. Large chocolate manufacturers also raise the concern that social labeling of products from a limited set of cooperatives, while serving niche markets, is likely to raise questions in consumers' minds about the sources of supply for products not labeled as socially acceptable. More importantly, the ethnic conflicts in West Africa may become worse if some regions are labeled by these pilot projects as somehow more socially responsible than others. Manufacturers who need large volumes of product to serve bulk markets and widespread consumer demand prefer national minimum standards for desired process attributes reflecting social responsibility of production.

In addition, again it is expression of demand not supply which is likely to limit this initiative. In the Fair Trade initiative expression of demand for process and product attributes is directed through the partnerships between manufacturers and the supply chain. This STCP initiative lacks institutional relationships where buyers at the port would demand differentiated products. That would need to come via processors and manufacturers revealing their demand for attributes in competitive markets at the African port. Chocolate manufacturers have been reluctant to divulge trade secrets on recipes, or to indicate preferences for region specific origins, arguing that quality problems are not related to the need for region specific products but rather are due to problems of increases in the share of substandard cocoa production. Should manufacturers reveal region specific or process specific demands, problems of traders trying to corner the cocoa market (which have occurred in the past) could become worse, as those traders could now seek to corner the market for a specific manufacturer's preferred origin or product. Markets in the past have not evolved towards these competitive markets, but have involved the contracting mode of marketing arrangements. This is because manufacturers who require specific attributes need a reliable supply year after year of the desired product. As in the Fair Trade initiative, and as for other commodities, in order to assure supply of attribute specific products, contracting and partnerships are utilized. The contracting mode of the Fair Trade initiative, with its inherent dangers, is likely to be the best institutional solution to marketing arrangements, and to aligning demand with supply.

While the infrastructure initiative of STCP pilot projects is unlikely to successfully realign markets to address demand for process attributes, there are nevertheless a number of activities leading to stronger producer organizations which could enhance farmer welfare. Market failures in domestic trading, in credit markets and in dissemination of market information all could be addressed by stronger cooperatives. If economies of scale can be achieved, some of the value added marketing activities, including assembly, distribution, transportation, and initial processing of cocoa beans, may be taken on by some cooperatives rather than by the multinational exporters. In fact this is already occurring, with better cooperatives establishing partnerships with the multinational exporters/processors and even realigning the marketing

activities conducted by each partner. Both bulk handling and better quality control can now lead to premiums accruing to the better organized farmer cooperatives. Several success stories in existing markets highlight this conclusion. Successes already demonstrating this potential include Kuapa Kokoo, the cooperative Scagbo in Cote d'Ivoire, and by the bulk premiums successfully obtained by producer organizations in Cameroon. Processors are seeking out these relationships to counter the trends of diminishing quality and the problem of rushing product to market under chaotic free markets, driven by scale economies in distribution and processing.

Both farm prices and quality are now improving where relationships between marketing intermediaries (and with farmers) have developed, where market failures are addressed in the design of interventions to strengthen cooperatives, and where governments provide the public goods previously offered by parastatals. The success stories observed in evolving West African cocoa markets typically involve the contracting mode of marketing arrangements, sometimes on an informal basis, but with the potential to reach a broader set of farmers. Reaching the broader set of farmers requires addressing the demands of the bulk markets, and not just chasing premiums to specific product or process attributes with limited demand. The danger of this solution is that poor, remote farmers who are not served by well functioning producer organizations could be left behind.

References

Abdulai, Awudu and Peter Rieder (1996), "Impacts of Agricultural Price Policy on Cocoa Supply in Ghana: an Error Correction Estimation," *Journal of African Economies* 4(3), pp. 315-35.

Bloomfield, E.M and R.A. Lass, (June 1992), "Impact of Structural Adjustment and Adoption of Technology on Competitiveness of Major Cocoa Producing Countries," Technical paper No. 69, The Development Centre, OECD, Paris.

Bowen, Lisa, (2000) "Shade Tree Coffee Returns to Starbucks as Partnership with Conservation International is Elevated," Conservation International, <http://www.conservation.org/WEB/NEWS/PRESSREL/00-0811.htm>.

Bulif, Ales (1998), "The Price Incentive to Smuggle Cocoa Supply in Ghana, 1950-96," IMF Working paper WP/98/88, IMF, Washington, DC.

Chalmin, Philippe (1987), *Traders and Merchants: Panorama of International Commodity Trading*, Harwood Academic, New York.

Cogneau, Denis and Gerald Collange (1998), "Les Effets a Moyen Terme de la Devaluation des Francs CFA: une Comparaison Cameroun- Cote d'Ivoire," *Revue d'Economie du Developpement* 0(3-4), pp.125-47.

- Coulter, Jonathan (1999), "Draft Concept Note -- Study on the Creation of a Warehouse Licensing Company in Ghana or Cote d'Ivoire." Chatham, UK: Natural Resources Institute, October 1999.
- Dand, Robin (1999), *The International Cocoa Trade*, 2nd ed. Cambridge, UK: Woodhead Publishing and New York: CRC Press, 1999.
- ED&F Man (2000), "Cocoa Market Report – July 2000 update." London: ED&F Man Cocoa, Ltd., July 2000.
- ED&F Man (2000), "Cocoa Market Report No. 366." London: ED&F Man Cocoa, Ltd. (11 pages), January 2000.
- FAO (2000), "Cocoa Projections to 2005." Rome: FAO Commodities and Trade Division, January 2000.
- FAO (2000), AGROSTAT database, FAO, Rome, Italy.
- Fold, Niels, "Lead Firms and Competition in 'Bi-polar' Commodity Chains: Grinders and Branders in the Global Cocoa-Chocolate Industry," *Journal of Agrarian Change* 2(2), April 2002, pp. 228-247.
- Gilbert, Christopher L. (1997), *Cocoa Market Liberalization: Its Effects on Quality, Futures Trading and Prices*. London: The Cocoa Association of London, September 1997.
- Gilbert, Christopher L. (1999), "The Current State of the Cocoa Market." Amsterdam: Free University, December 1999.
- Hattink, Wolter, Nico Heerink and Geert Thijssen (1998), "Supply Response of Cocoa in Ghana: a Farm Level Profit Function Analysis," *Journal of African Economies* 7(3), pp. 424-44.
- Hertz, Noreena, *The Silent Takeover: Global Capitalism and the Death of Democracy*, The Free Press, New York, 2001.
- ICCO (1999), "Project on the Improvement of Cocoa Marketing and Trade in Liberalizing Cocoa-Producing Countries." London: International Cocoa Association, January 1999.
- ICCO (2000), *Annual Report for 1999/2000*, International Cocoa Organization, London, 2001.
- LMC International (2000), "The World Cocoa Market Outlook." Paper presented at the Regional Implementation Workshop of the Sustainable Tree Crops Programme, Accra, Ghana. Oxford, UK: LMC International, May 2000.
- LMC International (2000), "LMC Commodity Bulletin: Cocoa." Oxford, UK: LMC International, July 2000.

Lohr, Luanne, "Factors Affecting International Demand and Trade in Organic Food Products," in *Changing Structure of Global Food Consumption*, ERS, USDA, WRS-01-1, Washington, DC, 2001

Losch, Bruno, "Global Restructuring and Liberalization: Cote d'Ivoire and the End of the International Cocoa Market?" *Journal of Agrarian Change* 2(2), April 2002, pp. 206-227.

Maizels, Alfred, Robert Bacon and George Mavrotas, *Commodity Supply Management by Producing Countries*, Clarendon Press, Oxford, 1997.

Masters, William and Philip Abbott, "The Impact of New Technology and New Institutions on Cocoa Marketing in West Africa: Bulk Transport and Identity Preservation," Purdue University, West Lafayette, IN, November, 2000.

Natural Resources Institute (1999), Draft Concept Note: Study on the Creation of A Warehouse Licensing Company in Ghana or Cote d'Ivoire.

Newbery, David (1990), "Optimal Trade Taxes on Agriculture in Developing Countries," *Economic Journal* 100, pp. 180-92.

OTAfricaLine (2000), "Commodity News," <http://otal.com/commods.htm>.

Oxfam, "The Cocoa Market – A Background Study," Make Trade Fair, Oxfam, <http://www.maketradefair.com/assets/english/CocoaStudy.pdf>, 2002.

Oxfam, "Rigged Rules and Double Standards: Trade, Globalisation and the Fight Against Poverty," Make Trade Fair, Oxfam 2002.
<http://www.maketradefair.com/stylesheet.asp?file=03042002121618>

Sanogo, Diakalia, "Impact of Cocoa marketing and Trade Innovation in Africa," Department of Agricultural Economics, Purdue University, West Lafayette, IN, October 2002.

Stryker, J. Dirck (1990), *Trade, Exchange Rate and Agricultural Pricing Policies in Ghana*, World Bank, Washington, DC.

Tallontire, Anne, "Fair Trade and Development," in *The Guide to Developing Agricultural Markets and Agro-Enterprises*, World Bank, Washington, DC, 2001.

UNCTAD Secretariat (1984), "Studies in the Processing, Marketing and Distribution of Commodities: The Processing before Export of Cocoa: Areas for International Cooperation," TD/B/C.1/PSC/18/Rev.1, UNCTAD, Geneva.

Yilmaz, K. (1999). "Optimal Export Taxes in a Multi-Country Framework," *Journal of Development Economics* 60, 439-465.

Table 1. Cocoa Production and Trade in 2000

	Production		Net Exports		Net Imports			
World	3,410		2,144		2,063			
<i>Developing Countries</i>	3,410	100.0%	2,144	100.0%				
Africa	2,340	68.6%	1,915	89.3%				
Cameroon	123	3.6%	106	5.0%				
Cote d'Ivoire	1,396	40.9%	1,253	58.4%				
Ghana	437	12.8%	422	19.7%				
Nigeria	338	9.9%	152	7.1%				
Latin America & Caribbean	466	13.7%			24	1.2%		
Asia	553	16.2%	19	0.9%				
<i>Industrialized Countries</i>					1,858	90.1%		
European Union					799	38.7%		
U.S.A.					762	36.9%		

Production and exports in 1,000 metric tons

Source: FAO, Agrostat database.

Table 2. Dependence of West African Exporters on Cocoa Exports in 2000

	<i>Côte d'Ivoire</i>	<i>Ghana</i>	<i>Nigeria</i>	<i>Cameroon</i>
Cocoa Bean Exports	857	563	225	115
Processed Cocoa Product Exports	259	54	16	62
Exports	3780	1400	20100	2050
% Cocoa	29.5%	44.1%	1.2%	8.6%
GDP	9319	5419	41248	8687
\$ per capita/year	582	285	325	579
% Cocoa	12.0%	11.4%	0.6%	2.0%

All Exports and GDP in \$ millions

Sources: FAO, Agrostat database; World Bank, *World Development Report 2002* .

Figure 1. Stylized Cocoa Marketing and Supply Chain

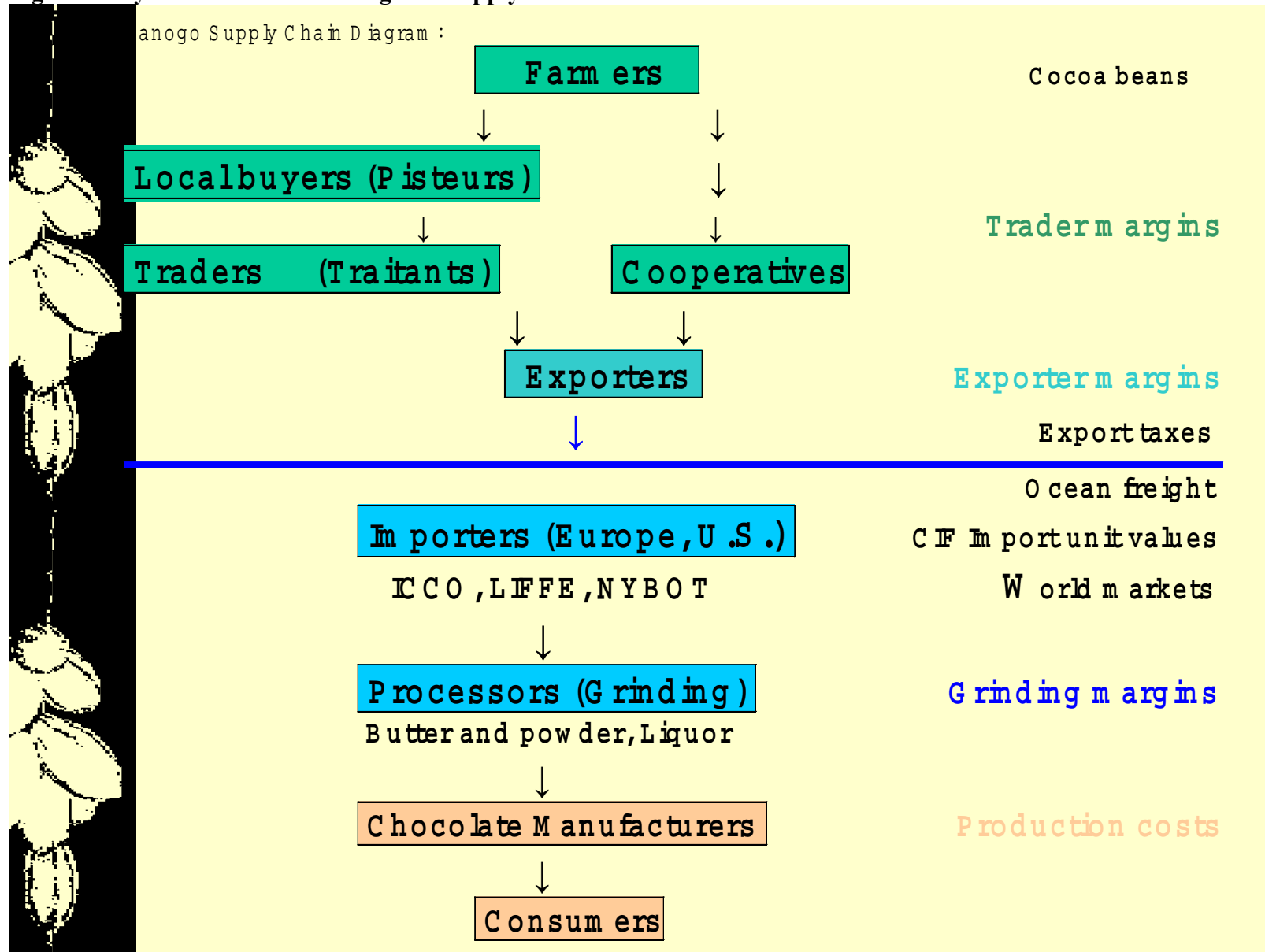
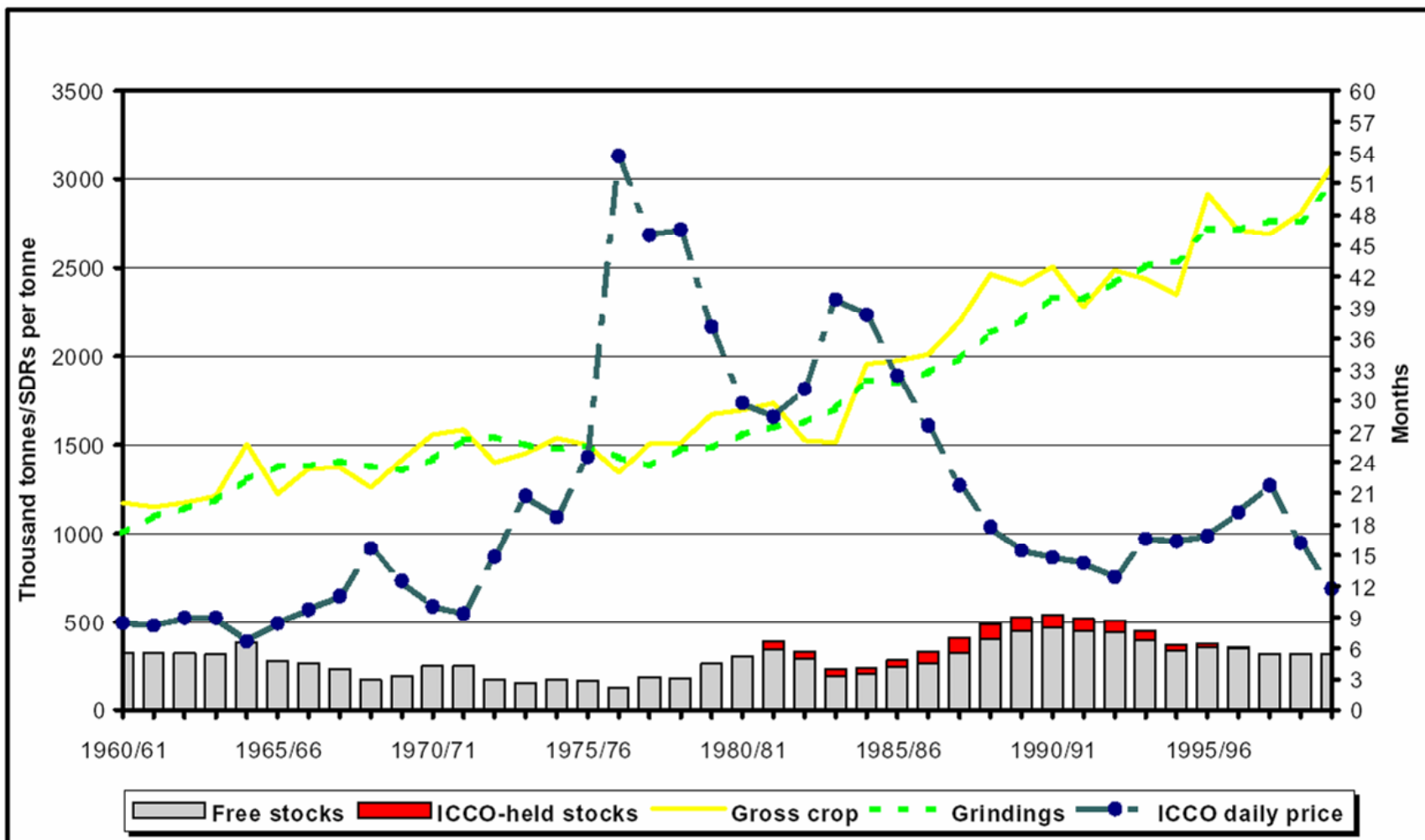


Figure 2. ICCO Annual Report (2000) Cocoa Market Performance Summary
 World Cocoa Bean Production, Grindings, Stocks and Prices



Source: ICCO, *Annual Report 2000*.

Table 3: Prices along the Cocoa Supply Chain and Imputed Margins

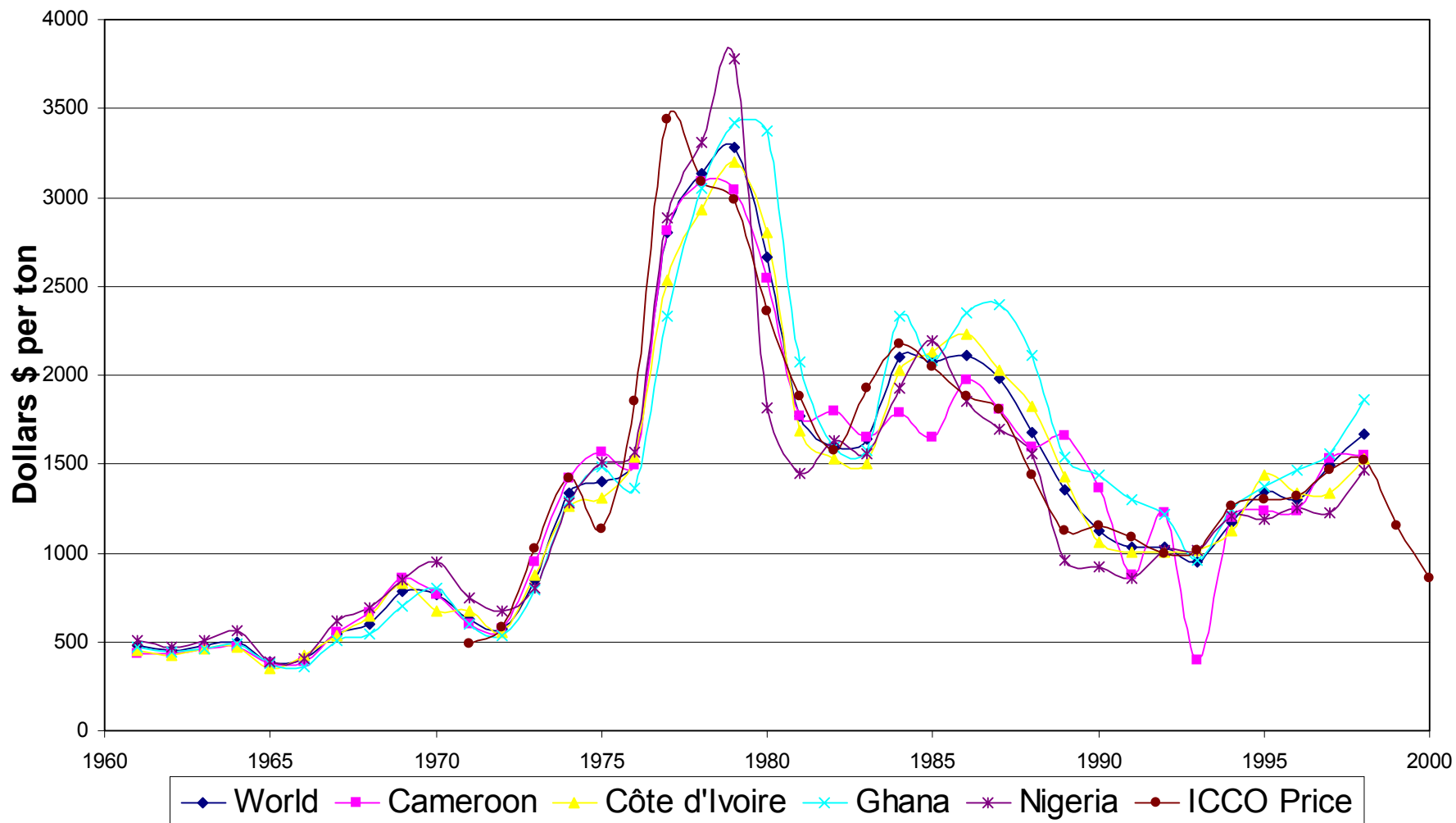
Table 3. Prices along the Cocoa Supply Chain and Imputed Margins

	Cote d'Ivoire		Ghana		Cameroon
	00/01*	Jan 02	00/01	Jan 02	Jan 02
Farmgate price	451	724	547	599	1282
<i>Traders margin</i>	156	199	114	121	
Exporter price	607	923	661	720	18??
<i>Exporter margin</i>	30	10	323	438	
<i>Export tax</i>	244	362	89	105	0
<i>Ocean freight</i>	93	73	50	50?	50?
CIF unit values	984	1368	1123	1313	1348
		<i>00/01</i>	<i>Jan 02</i>		
World Market ICCO		904	1381		
Processed bean value		1283	1507		
Cocoa butter (37%)		2035	2357		
Cocoa powder (42.5%)		1246	1494		
<i>Grinding margin</i>		379	126		

*00/01 = Season average prices in \$/metric ton, 2000/01

Jan 02 = Snapshot of Prices in \$/metric ton, January, 2002

Figure 3. Cocoa Bean Export Unit Values & ICCO Prices



Sources: FAO, Agrostat database; ICCO, *Annual Report, 2000*.

Table 4. Models of Market Integration, Identity Preservation and Quality Determination

	Parastatals		Post Reform		Identity Preservation Options		
	<i>Caisse</i>	<i>Marketing Board</i>	<i>Chaos</i>	<i>Bulk-Integration</i>	<i>Infostructure</i>	<i>Contracting</i>	<i>Usinage-Commodity</i>
FARMER Determines quantity and quality mix of cocoa bean production	Regulation of private agents, Quality controls at port	Public Monopsony-monopsony Quality controls at farm gate and port					
COOPERATIVE Organizes and buys beans from farmers			Cameroon after 1992	Cote d'Ivoire in 2000	Quality control at first handler	Quality control at first handler	
TRADER Transports beans to ports	Cote d'Ivoire in 1998	Ghana Cocobod today			STCP pilot projects	Scagbo, Kuapa Kokoo	
EXPORTER Sells to international market	Bags	Bags	Bags	Bulk - containers or grain transport	Sealed bags	Sealed bags or containers	Bulk - containers, Quality control at port or coop
<i>Exporting country border</i>				Market integrated from exporter to processor			
IMPORTER Ocean transport, trading houses							
PROCESSOR Grinds beans into liquor, butter and powder						Marketing strategy sells farm process or product attributes	
CHOCOLATE MANUFACTURER Demands quality & variety							
CONSUMER Buys product and process attributes							
Product Differentiation	at port, medium	at farm and port, higher	low	low	at farm or coop, high	at farm or coop, high	at port, medium
Market Power, Integration	Government at farm, port	Government at farm, port	Trader	Trader, Processor	Cooperative	Manufacture Cooperative	Trader, Processor
Farmgate Price	Low	Low	High	Low	High	Decoupled	?

Adapted from Masters and Abbott (2000).