

Report on Visit to the Forest Region of Guinea

COFFEE & COCOA MARKETING

FICA Seminars in N'Zérékoré and Macenta

15 - 25 June 1997

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by Sandy Harper

1.0 DISCUSSIONS WITH PRODUCERS AND TRADERS

Coffee and cocoa, being complementary crops, are harvested at different times of the year. It can be stated that all cocoa producers also produce coffee although not all coffee producers produce cocoa.

Thanks to RC2 (a project to "re-launch" coffee and cocoa with heavy emphasis on the former), coffee production in Guinea is much in advance both qualitatively and quantitatively of cocoa production. Although the yield is still very low (120 kgs / ha) relative to other robusta-producing countries (i.e., Côte d'Ivoire, Indonesia, Vietnam, etc.) it seems to be improving slowly.

Field visits to various plantations reveal RC2's influence in a generally more orderly layout and the gradual adoption of more productive clones, but the general level of maintenance is poor. All the plantations visited were unacceptably overgrown, some excessively so. The bushes had not been trimmed back and were for the most part far too high making them both difficult to harvest and low in productivity. The producers, at least half of whom are absentee landlords, depending for their daily bread from their jobs in town, complained both of the scarcity and the cost of labour as being the principal reasons for the plantations' poor upkeep. Two of them admitted to cutting back the undergrowth only once a year, whilst others said that they did it twice. Both are inadequate. At this time of year (June-October), the plantations should be cleaned up every 3-4 weeks. Given, however, that the average farmer in Guinée Forestière puts in on average only 4 hours actual field work per day, until he can be motivated to do more the plantations are likely to remain unkempt.

Planting is the easy part so over planting is common, the result being that many of the farmers end up with plantations that are too large for them to maintain. Until the critical problem of agricultural credit is adequately addressed these farmers would do better to start off by taking smaller mouthfuls. They should plant only that which they can properly maintain themselves and build slowly from there.

The coffee plantations we visited, however, were models of good husbandry compared to the manner in which cocoa is being grown in Guinea. The visitor to the cacao plantations' stagnant depths is painfully aware of the high incidence of black pod and *Ceratostomella* and impressed by the absence of any evidence of pruning and ground clearance. Those few pods not infected by black pod (a common fungal disease) have mostly been enthusiastically gnawed by rats and squirrels, who have

no complaint about the way these plantations are being managed. While a certain amount of shade is necessary in cocoa plantations it is not a good thing to achieve total eclipse of the sun, an effect the Guinean planters are remarkably close to achieving.

Again, whilst obviously gales or hurricanes are to be avoided, it is not necessary to permit such a profusion of plantings, weeds and heaped humus that no breath of wind is able to ventilate the plantation nor, whilst too dry an ambience is a bad thing for cocoa, need the tree trunks actually stream with water. In short, in order to grow cocoa it is not necessary to attempt to create a micro-climate akin to that prevailing within a turkish bath installed inside a pressure cooker.

The solutions to the above problems are simple:

Black Pod can be eradicated by the application of copper sulphate, a common fungicide, which must be widely available if not in Guinea then in the Ivory Coast.

Pruning of the trees is vital but it is scarcely being done. With proper pruning and maintenance a cocoa tree can last for 80 years.

Rat poison should be put down to reduce the predations of rats and squirrels. The manufacturer's safety instructions should be followed.

There should be the correct amount of shade and ventilation in the plantations so as to avoid stagnation and fungal attacks.

The ground must be kept clean and the undergrowth regularly cleared.

All the above is simple enough and the producers I spoke to understood perfectly. Whether they will actually be able to do it or not without some extension assistance is another question. It seems clear that an aid agency might profitably address the problem of cocoa production in Guinea by bringing in specialist agronomists from the Ivory Coast or by sending Guinean agronomists there for training. This would not be an expensive solution.

Unfortunately our timetable did not permit us to visit the cocoa plantations being installed by IRAG at Sérédou. We are told that these are being properly run.

After harvest the cocoa should be properly fermented and dried. This is not being done. Fermentation is the process by which minute yeast cells from the workers hands, dust, etc. infect the beans when the pods are broken open. Gradually, acetic acid, carbon dioxide and water replaces the yeasts, in the process generating heat. Acetic acid and alcohol enter the seed and kill it, starting in motion a series of chemical changes, on which the flavour of the final product depends. During this time the inside of the beans turns from purple to the dark chocolate colour, with which most of us are familiar. If fermentation is not done properly the beans cannot be transformed into good tasting chocolate.

Briefly, the beans should be placed in perforated cylinders of 1.5 tons capacity or in sweat boxes with slatted floors (to let the mucilage drain away). In West Africa, the fermentation process is often carried out in shallow pits or heaps covered with banana leaves; this is an entirely acceptable approach. While the mucilage is draining off the beans should be stirred or rotated every other day so as to ensure a uniform fermentation and this process should last for 6-8 days depending on the weather. If they are not stirred the beans in the middle of the heap will ferment faster than those on the outside and as a result you will have beans whose colour varies from purple to chocolate to slatey black.

The producers we spoke to are not carrying out the fermentation properly. Some of them put the beans in covered pits for 3-4 days but do not stir them. Others put the beans into plastic sacks, mucilage and all and leave them for a week. This will not result in good cocoa.

After fermentation the cocoa should be evenly dried, slowly for the first 2 days in the sun or in dryers. This is not being correctly done if at all in Guinea. Guinean cocoa is generally far too humid at the time it comes onto the market; the acceptable limit is 8% humidity at the time of export.

Finally cocoa, unlike coffee, cannot be stored for too long before shipment/ consumption and if it is to be stored the sacks must be raised from the floor on slats and kept in separate piles to ensure some ventilation. If stored incorrectly or for too long the butter/fat will become acidic thus making its use even for industrial purposes not feasible.

There is a high level of ignorance both among producers and traders/exporters in Guinea as to how cocoa should be produced, fermented, dried or traded. It is a more complicated and fragile commodity than coffee, which is why most traders here have not yet bothered with it (although given the hunger for forex this may soon change, many traders having told me that they intend to deal in cocoa next season). Because of its poor quality it is hard to sell, the only constant outlet being for industrial use in Spain and Italy where its fat is extracted to be used as a pharmaceutical lubricant.

In discussions with producers and traders in Guinea it is clear that coffee production, trade and export is becoming better understood although on the international side there is a complete lack of understanding as to how the futures markets should be used (and they should be) by producers/exporters/industry for price fixing, hedging, executable orders, the granting and purchase of put and call options, etc. This is the ABC of commodity trading, with which producers/exporters in the larger exporting countries are generally familiar. Using these techniques on the terminal markets is a fundamental part of risk management and certainly in the private sector no producer, whether of agricultural produce or in the mining industry will be able to raise money from any commercial bank unless he can show how he proposes to safeguard his return by protecting himself against adverse price movements.

In Guinea, the futures market is only followed, if at all, in so far as the spot month indicates whether the market has gone up or down and contracts are made, I believe without exception, on a fixed price basis. At every stage in the chain therefore people are speculating that the market will go higher before they sell on. This is fair enough for the small producer, whose downside risk is practically non-existent given the low cost of production. Assuming that the producer then sells at a realistic price based on the world market (and as there is no fixed producer price in Guinea he has no other indicator), from there on everyone else in the chain is taking an unacceptably high market risk unless they can sell the produce immediately on a back to back basis. Some Guinean exporters do, however, derive the occasional windfall profits to offset their high risk by not honouring their sales contracts on a rising market. This is highly unprofessional and deleterious in the long run. It is another reason why Guinean coffee is discounted by at least a real \$100/ton on a f.o.b. basis to Ugandan coffee, which is of roughly similar quality. If you take into account Guinea's geographical/freight advantage compared to Uganda this differential becomes even higher. Guinean cocoa, apart from having a bad reputation in as far as quality is concerned also suffers from the perceived suspect reliability of some shippers.

In discussions with international trade houses another potential problem emerges. Increasingly the industrial end users are adopting a 'just in time delivery' policy and running very low inventories. In order to be able to do this they need to buy from large volume producers with a standardized quality (i.e; Côte d'Ivoire, Brazil, Uganda, Indonesia, Ghana, etc). This way they can be reasonably certain of keeping their production lines going with a low risk of rupture. Guinea is unfortunately a very small producer and although the quality of its coffee can be excellent it is too often variable. In discussions with Lavazza of Italy, for instance, I was told that they would be happy to enter into a direct contract for Guinean coffee but in order to justify the new blend that this would entail on their production lines they would need a minimum of 4000 tons per season of uniform quality. Although adequate tonnage of the requisite quality does exist in Guinea to enter into three, or even four such contracts, it would be dauntingly difficult to organise at present.

Guinean cocoa, on the other hand, can really only be used in the pharmaceutical industry - as indicated earlier in this report. For the reasons outlined above, the price gap between the large volume producers and Guinea is likely to continue to widen.

There are niche producers of coffee in the world (i.e., Jamaica 'Blue Mountain' or certain Ethiopian growths), who have such a special product that they can obtain three to four times the world market price for their coffee. For cocoa you have countries like Trinidad & Tobago and Venezuela, whose production goes to a few luxury chocolate manufacturers at a very high price. But these are the exceptions. Guinea is faced with the choice either of going for a much higher production of FAQ (fair average quality) coffee/cocoa or concentrating on making what they have absolutely superb and selling to specialist markets. She has the soil and the climate to make either option feasible. To continue with a relatively small production of variable quality would be to opt for the worst of both worlds in the medium/long term.

2.0 EXPORT REGULATIONS IN GUINEA

Export regulations are not complicated. Your only obligation vis à vis GOG (the Government of Guinea) is to fill out a D/E (Demande d'Exportation), which you can obtain from your bank. This must be signed by you as the exporter and then presented together with a copy of your sales contract to BCRG for their countersignature. This way BCRG is supposed to be able to control how much foreign exchange is due to come back into the country. You are then obliged to repatriate 75% of your invoice value at the official exchange rate.

For cocoa, this is the only official requirement for exportation.

Coffee is subject to the same requirement but there is additionally a US\$13/MT I.C.O. tax (International Coffee Organization) to be paid to the Ministry of Commerce for transmission to the International Coffee Organisation in London to cover Guinea's dues. Provided you have these two documents customs clearance for export should be granted.

As far as your contract is required, payment will normally depend upon your being able to present a clean set of shipping documents, which will usually include a full set of clean on board b/l's (bills of lading), certificate of weight and quality issued by SGS (Société Générale de Surveillance) or BV (Bureau Veritas), a certificate of origin, a certificate of fumigation, a phytosanitary certificate issued by the appropriate authority, an 'EUR 1' certificate for goods going to the EU and anything else you may have agreed to present to buyers against payment. These requirements have nothing to do with the GOG, however. They depend on what you have agreed with your buyers.

Sometimes one hears it said that Guinea is a complicated place from which to export. This author believes that the reverse is true; it is in fact a remarkably easy place to export from. Obviously, someone who is unused to exporting or international trade may find the procedures involved complicated but that would apply whether they were in Guinea, the UK or anywhere else. In the experience of this author in Guinea it is quite possible to get together a full set of shipping documents within 24 hours, which is a perfectly acceptable result.

3.0 PRODUCTION AND TRANSFORMATION COSTS

3.1 Cocoa

Cocoa production costs in Guinea are clearly very low. There is no investment in inputs and only token maintenance is carried out. No one seemed to know how much it had cost them to plant the cocoa in the first place and in most cases the plantations were inherited. It is thus hard to calculate the precise production costs but this observer can say that he would be most surprised if they exceeded US\$100 / MT.

5.0 SEASONALITY

5.1 Cocoa

The odd cocoa pods can be harvested year round, but the main Guinean cocoa crop starts to come in off the plantations in late July and into August, when it is still very humid, and reaches its export peak in October/November. Thereafter it continues to be available in declining quantities up to April.

5.2 Coffee

Coffee is harvested beginning in mid-November and continuing through August or so. However, the bulk of coffee is marketed from mid-January to mid-April.

6.0 THE SEMINARS

This author has been trading coffee and cocoa worldwide from Guinea since 1979. Since 1984, he has maintained a presence here and has made countless trips to the interior, met with villagers, planters and traders, financed the establishment of coffee plantations, has provided extension and technical assistance in the plantations and assisted several exporters get started.

Apart from poor production techniques, which this report has already discussed, there is also a high level of ignorance amongst Guinean producers and marketers as to what elements actually comprise the value of a ton of coffee/cocoa on the LIFFE in London and how this price relates directly to the price he or she will receive at farm gate or in town. Obviously people want help in planning their plantations, better production techniques and, in the case of cocoa, advice on how to achieve a correct fermentation. The issue, however, which exercises everybody is knowing what their produce is worth. Marketers feel powerless when faced with buyers visiting from the capital or from Senegal; their only yardstick being the price that was last paid in town. The syllabus for the seminars sought therefore to address the following points:

1. An explanation of the international markets, the role played by the futures markets and their different participating elements – i.e., producers, traders, industry, speculators/funds.
2. Why the price on the futures markets directly affects the farmgate/in-town prices and what sorts of things make the futures markets move.
3. The importance of respecting all the terms of a sales contract with respect to price, delivery date, quality and overall performance.
4. Pre-export finance – How to set about obtaining it.

5. How to obtain the international price of coffee and cocoa on a daily basis.
6. The correct manner in which to produce, maintain, ferment and store cocoa beans.

As a backdrop to each seminar, the chart which follows this section was presented to the participants. At the seminars, this chart was discussed and dissected in detail. I provide this information below in summary fashion.

The chart is designed to provide the reader at a glance with the daily value of his or her coffee or cocoa, either f.o.b. or up-country. It shows the route followed by a kilogram or ton of produce from the moment of its sale in town or at farm gate to in-store in Europe, with the appropriate costing for each stage of the journey. Providing one knows the price prevailing on LIFFE at the relevant moment, one can quite simply work back to the correct price at origin. One must also know the \$ per GNF rate of exchange at the time (75% official, 25% parallel) and, in the case of cocoa which is quoted on the LIFFE in £, the \$ per £ spot rate. To take an example: Today, London cocoa is quoted at £1010. Having deducted £375 you are left with a MTFOB value of £635. The \$ per £ rate today (12 August 1997) is 1.5810 so the \$MTFOB value of one ton of Guinean cocoa today is \$1004. Using an exchange rate of GNF 1100 to US\$1.00 on 75% of the value and GNF 1150 on 25%, one obtains a mean rate of exchange of GNF 1112.5 per US Dollar. Therefore, \$1004 becomes GNF 1,116,950 per MT or GNF 1117 per kilogram.

The \$/£ rate and the latest prices for London coffee and cocoa are broadcast each morning by the BBC World Service between 0905 and 0910 hours GMT on "World Business Today" at 1547 and 1786 MHz. As explained at the seminars, it is thus possible for anyone with a short-wave radio to obtain the information necessary to work out the value of their produce on a daily real-time basis. Besides this, FICA hopes to make arrangements to obtain prices by e-mail in the near future and will make them available to their members via their branch offices.

Regarding the correct fermentation of cocoa, which was summarized earlier in this report, a presentation was made to participants and questions entertained.

On the way back to Conakry, we spent an evening and following morning at Kissidougou where I met with the managers of UPAPEK. This is a group of local coffee producers and traders who are members of FICA. They have recently benefited from a bank loan supported by AMIP's Loan Guarantee Facility to commercialize coffee. It was clear that while they were well-meaning and honest, they did not have a sufficient grasp of what buying and selling price they should target. They only hoped that they would be able to sell coffee for a higher price than they had paid for it. On top of this they had applied for the loan to start buying coffee at the beginning of the season (December) but it had only been approved and funds actually made available near the end of the season (June). By this time, many of the assumptions upon which they had based their loan application were no longer valid.

The entire buying-commercializing-exporting route was discussed with UPAPEK representatives. They were unaware of many of the key elements comprising the price of coffee and it was the first time they had seen the costs presented in an organized way. They found the information practical and understandable.

In the morning, we met again with UPAPEK to go through the exercise of tuning in to the BBC business report on their radio. This hands-on exercise left them with a great deal of enthusiasm and a little better prepared to market their coffee.

7.0 RECOMMENDATIONS

It is quite clear to this author that AMIP should not be in the business of guaranteeing any pre-export finance for those FICA members who wish to trade in or export price-volatile commodities such as coffee or cocoa, unless they can demonstrate that they have a clear idea of how they will control price risk. They should be able to demonstrate an understanding of the relevance of futures markets to their operations and what the prevailing differentials are above or below those markets for their commodities basis f.o.b. Conakry. Financing a fixed price contract might only, exceptionally, be entertained when execution is imminent and one is dealing with current, "spot" prices both at origin and destination. Even then, a sudden upward movement in prices could make it difficult for an uncovered shipper to fulfill a contract, thereby causing him to default. The bank then has the problem of being reimbursed in cash or even of having to seize (in order to sell on and liquidate) a smaller than contracted tonnage of higher priced coffee and trying to sell it before the market goes down again. That is risky enough but for a non-specialist, with no knowledge of hedging techniques, to finance a long-term fixed price purchase/sales contract is highly speculative.

Traders, Brokers and Processors

In common with their counterparts in many other areas of modern commercial life, traders in 1997 are under far greater pressure to perform than they were even ten years ago. The bottom line is everything and they are only as good as their last trade. Their employers show them little loyalty and they in their turn, perhaps realizing that loyalty has come to be low on their list of affordable priorities, have little left over for their employers, suppliers or trading partners. It is thus unrealistic to expect a modern trader to seek, as he might have done in the past, to establish a long-term relationship involving the instruction and "nurturing" of a supplier of unsophisticated origin, particularly when that origin is as relatively insignificant as is Guinea. It is not in the interest of any of the international traders, who currently deal with Guinea, to educate the Guinean shippers into being able to sell their produce more expensively – unless, perhaps, the latter can guarantee a better performance and delivery thus enabling the trader to sleep easier at night.

In general, the more ignorant the seller, the more cheaply you will be able to buy his coffee and cocoa. The reputable houses will not renege on a contract (i.e., by

refusing to take up documents presented on a falling market) but most of them will look hard for a technical way to escape from a contract if it is in their interest and if you give them the chance to do so. This author does not believe that any Guinean shipper has the slightest idea of how to take an overseas buyer to arbitration in the case of poor performance on a contract. At the same time, few overseas buyers will bother to take a Guinean shipper to arbitration because the chances of being able to enforce an award in Guinea are perceived as being remote. Hence, among other reasons discussed earlier, the low price of Guinean coffee relative to similar quality coffee of other origins.

The idea of setting up an interprofessional trading body, such as CFIC (Confederation Interprofessionnelle de la Filiere Café et Cacao) in Guinea, is thus to be encouraged. Such other organizations exist in most other producing countries either as an adjunct to government or as independent professional federations (viz. FNC – Federation Nacional de Café in Colombia, or IBC – Instituto Brasileiro de Café in Brazil). Their role is to help their members, from all sectors of the industry, to become aware of the latest marketing and production techniques in their respective commodities, to act as a single representative interlocutor with government, to help members who run into difficulties with poor performance by overseas buyers and, conversely, to seek redress against delinquent local shippers. This can only add to the overall credibility and performance of the sector.

This author knows of no brokers handling Guinean coffee and cocoa first hand. Brokers generally make such a small commission that they cannot afford to spend too much time on a particular deal, unless it is very special. They are obliged to go for high turnover, trouble-free contracts with a sound contractual partner on either side. More often than not they act as intermediaries between trade houses, who do not want to disclose their book to the market. There might be something to be said for asking a broker to help FICA members market their coffee and cocoa for export, but unless FICA were able to guarantee a reasonable tonnage and a proper contractual performance, which it cannot, this author believes it would be hard to find a broker to take this on.

Within Guinea itself local traders and brokers also exist. In particular, there are traders who specialize in buying produce up country and selling it to exporters in Conakry. Some of them are able to do this out of their own resources, others receive finance from their buyers. Although on paper one can buy far much more cheaply up-country, doing so is hard work, time consuming and, because you have to buy in cash and are thus obliged to carry large sums of money about with you, not risk free. In order to achieve a decent tonnage quickly you often feel obliged to advance money to local buyers to go into outlying areas and bring produce back into town (there is a physical limit as to what you can do yourself as an individual). I know of no one in the business who has not frequently regretted having done this.

Thus, although you pay a relatively high price for produce in Conakry at least you get what you paid for in a relatively stress free manner, the local trader having absorbed the hassle and risk of bringing the produce down. Just as the international trader uses his or her superior knowledge to make a living out of exported coffee, so

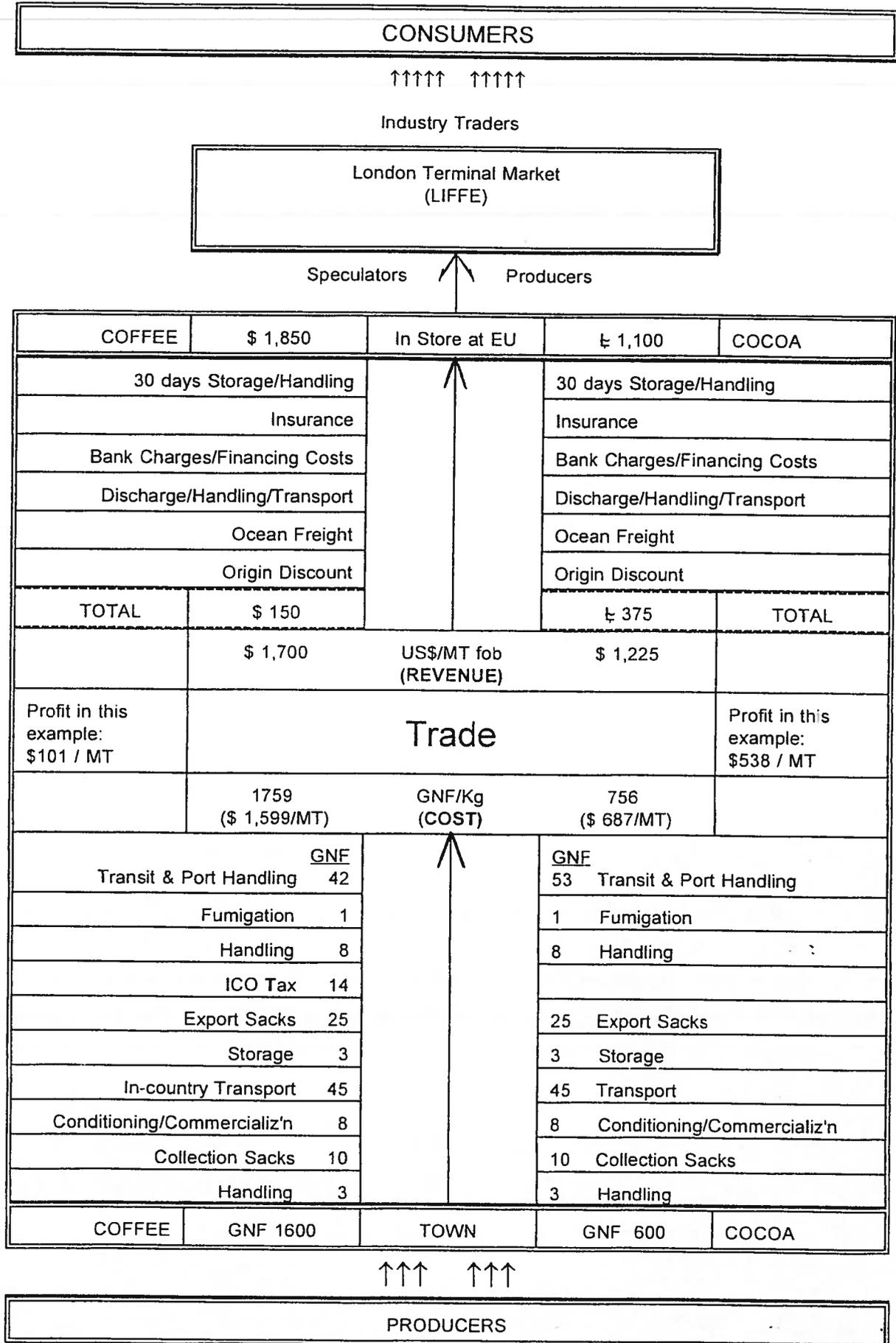
the local trader uses superior local knowledge to make a living out of produce in the interior of the country and in so doing fulfils a valuable role. A Guinean broker is generally an opportunist, who makes some money now and again by putting a buyer and seller together. In Guinea, there seems to be no one, however, who makes a regular living exclusively from brokering.

This report has already commented on the potential for processing cocoa in Guinea and has concluded that only the lightest artisanal investment is justifiable, if at all, under current conditions. As far as coffee is concerned there is a limited case to be made for providing a better quality R+G (roast and ground) coffee than is currently produced locally for the domestic market. This would not be difficult as the local market leader for R+G seems to be using only those beans rejected in the mills together with the sweepings from the warehouse and factory floor to prepare his "blend". All that a new roaster needs to do is to prepare his blend using proper coffee beans and assuming that the local market is remotely taste conscious he should quickly capture an important share.

It is not realistic to expect to be able to export roasted coffee from Guinea, although in spite of the absence of proper packing, there may be some small potential for subregional trading into Senegal and Mali, for instance. Guinean coffee is a robusta and a good one as robustas go, but it is very rare these days in the developed consuming countries for robusta R+G to be drunk on its own. It is nearly always blended with a fine/ish arabica to produce a taste acceptable to consumers but at a price cheaper than 100% arabica would cost. Otherwise, robusta coffee is overwhelmingly used to produce instant coffee, for which it gives up to 15% better yield than arabica.

An instant coffee factory is expensive – upwards of \$2 million for a second-hand Brazilian plant – and even if one could count on obtaining enough throughput (doubtful in Guinea) one would have tremendous difficulty competing with CAPRA/Nescafe of Cote d'Ivoire. In conclusion, therefore, there is scope for a local roaster to operate in Guinea, but only on a very small scale at present – about 30-50 tons per annum.

**FIGURE: EXAMPLE OF HOW TO CALCULATE MARKETING COSTS
AND INFER FOB PRICE FOR COFFEE AND COCOA**



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ANNEX 1

**"A Short Guide to Cocoa Fermentation" by Dr V.C.Quesnel,
Cocoa Research Department, University of the West Indies, Trinidad.**

A SHORT GUIDE TO GOOD COCOA FERMENTATION

by

Dr. V.C. Quesnel

Cocoa Research Department, University of the West Indies, Trinidad

WHAT HAPPENS DURING FERMENTATION

When cocoa pods are broken open the beans become infected by minute yeast cells from the workers hands, dust, etc. These convert the sugar in the pulp to alcohol and at the same time create heat. After the yeasts have grown for a day or two their place is taken by acetic acid bacteria which convert the alcohol to acetic acid (vinegar) and also convert acetic acid to carbon dioxide and water. These reactions also generate heat. Acetic acid and alcohol enter the seed, kill it, and start in motion a series of chemical changes on which depends the flavour of the final product. These changes proceed best at a temperature of 45° to 50°C. (113° to 122° F). The heat comes from the series of reactions, sugar to (1) alcohol - (2) acetic acid - (3) carbon dioxide + H₂O, most of the heat being given off by reaction No. 3. Reaction (1) does not require oxygen but reactions (2) and (3) do. Thus the presence of air during fermentation is important.

RECOMMENDATIONS:

The foregoing brief statement will enable the reasons for the following recommendations to be easily seen:

- (1) Pick only ripe pods. The sugar content of the pulp from unripe pods is low and so does not ferment well.
- (2) Protect the beans from rain after removal from the pod. Rain washes away the sugar from the pulp.
- (3) Heap the beans in a sweat-box with a slatted floor. Air must pass into the mass; it will naturally try to enter through the bottom as the warm air between the beans rises. Holes in a solid floor are easily blocked by the beans cutting off the air supply. Keep the walls of the box as well insulated as possible and free from cracks. It is important for the beans to heat up and stay hot.
- (4) Clean the "gum" from between the slats before putting in a batch of cocoa but do not clean the walls of the box. "Gum" stuck to the walls provides a valuable source of the right micro-organisms to start the fermentation.
- (5) Control the movement of air by manipulating the thickness of covering of dried banana leaves. In the wet season a covering of green banana leaves is not desirable since it restricts the air flow too much. Use dry leaves but make sure the surface is thoroughly but not thickly covered. In the dry season when the cocoa tends to be dry, green banana leaves may be useful. Cover thickly with dry leaves.
- (6) Turn the cocoa every second day and turn thoroughly.
- (7) Ferment 6 - 8 days, six if possible.
- (8) Do not mix the pickings of more than two days; this disrupts the sequence of reactions and leads to bad cocoa.
- (9) Do not ferment diseased beans. Their flavour is awful.
- (10) During drying, move the beans around as much as possible to prevent the growth of micro-organisms (mould).
- (11) If anything goes wrong consult your Association.

ANNEX 2

**"Seven Easy Steps to Good Cocoa"
issued by the Cocoa Planters Association of Trinidad Ltd.**

THE COCOA PLANTERS' ASSOCIATION OF TRINIDAD, LIMITED

SEVEN EASY STEPS TO GOOD COCOA

1. START BY PICKING ONLY R I P E PODS.
2. KEEP SWEAT BOXES CLEAN; DRAINHOLES OPEN.
3. FILL SWEAT BOXES IN ONE DAY IF POSSIBLE AND COVER WITH FIG LEAVES.
4. DO NOT MIX HALF-RIPE OR DISEASED BEANS WITH GOOD COCOA.
5. TURN WET COCOA IN BOXES EVERY OTHER DAY.
6. SWEAT COCOA FOR 6, 7, or 8 DAYS ACCORDING TO THE WEATHER.
7. DRY COCOA SLOWLY FOR THE FIRST 2 DAYS FOR A PLUMPER, BETTER BEAN.

YOU CAN MAKE GOOD COCOA
EVERY TIME

ANNEX 3

**Extract from Report of Dr. F. Pound,
International Cocoa Traders Association
15 November 1933**

(2) The Manufacturers need a Uniform bean

This is a point which has been stressed continually by manufacturers. The first step towards uniformity of quality is uniformity of size. It is impossible with the present day mixed Forastero cacao to obtain uniformity of intrinsic quality but we are assured that uniformity of size is a major qualification to be followed by a gradual reduction of diversity of type. This work is being undertaken from the Imperial College where certain high yielding and otherwise desirable types of cacao are being selected to supply future planting demands. The manufacturers have assured us that the type of bean yielded by some of these special trees is of the exact quality and size which they most desire.

(3) The Manufacturers need Bold Beans

In shape the true Criollo type of bean which is almost as thick as it is wide, is the type most desired. These beans are essentially bold, with plenty of air space between the convoluted cotyledons. They consequently are well matured, well fermented, and can be well roasted. Their aroma after roasting is very fine. The preference for a bold bean is not entirely a question of size for, since Criollo strains have brought this boldness to Forastero cacao, bold beans must inherit some Criollo characteristics and therefore are of a superior intrinsic quality to flatter beans. We know that there is a market for bold beans today but the premium paid is much less than one would expect judging from the manufacturers' conversations. They have however stipulated under the Cacao Research Scheme that selection must preferably be concerned with bold beans.

(4) Bold Beans mean less wastage.

The percentage of shell in a fine bold bean may be as low as 10% and an average figure for one of our samples of bold beans submitted was 15.4%. The small flat beans may contain as much as 50% of shell and the average of our worst grade is 22.1%. This percentage of shell alone is a big consideration in buying. Further it is much more difficult to separate the shell cleanly from a flat bean than from a bold bean.

(5) Small flat beans spoil the roast.

While visiting Messrs. Cadbury's factory we were given the opportunity of testing for ourselves the effect of small flat beans on the aroma of the roast. To one unacquainted with desirable aromas it was quite obvious that the aroma from small beans was distasteful. The reason for this may be partly genetic in that small flat beans belong primarily to Calabacillo and thus are of an inferior quality or it may partly be due to unripe beans which are not full grown, have

not fermented properly and fail to roast decently. At bottom the fault is a mixture of both, due to the mixed nature of commercial cacao. If during fermentation the sweating is continued until Calabacillo beans are properly cured the better type beans are spoiled. It means that the small flat beans when received by the manufacturer today are under-fermented and consequently will not roast as easily as an adequately fermented bean. We have been assured that given regular and sufficient supplies of flat beans it would be possible to roast them by themselves to an optimum and so to improve their general flavour. In this connection a report from an English manufacturer may be quoted. This manufacturer roasted to an optimum ungraded and graded C.P.A. cacao with the following results:

".... the bulk grade of the cacao shows better results in roasting than the 100% sample. At the same time the top 15% is the best of all and the bottom 15% shows a fairly good result. Thus, to summarise the result of the roasting test, graded samples give on the whole a far better flavour than that sample which contains everything from Bold to Pasilla".

There are thus two independent manufacturers' opinions on the benefit of grading with regard to roasting.

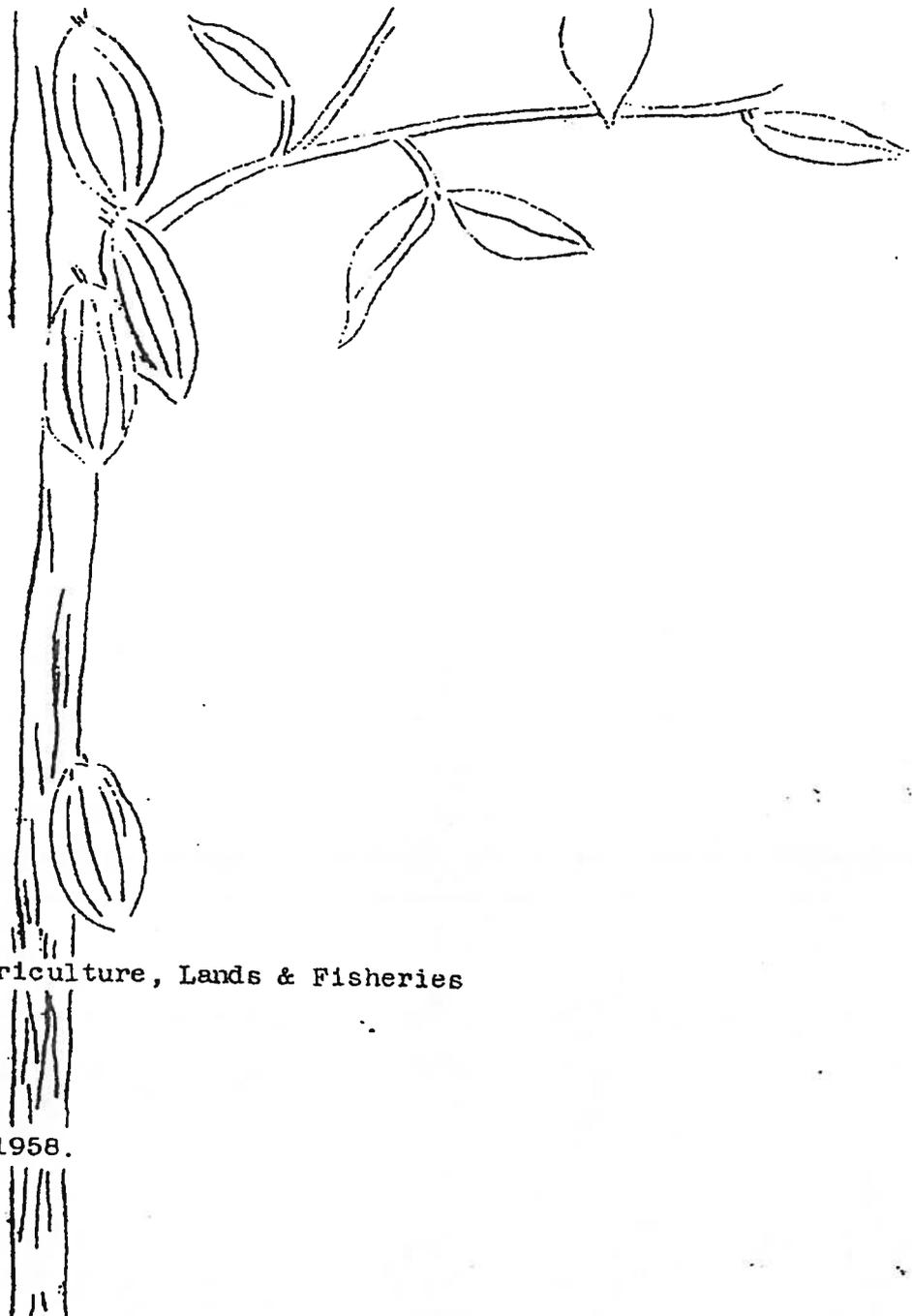
(6) Small flat beans clog the machinery.

This is a further defect of small beans. It appears to be extremely difficult to grind satisfactorily a mixture of bold and pasilla cacao. The flat beans are less crisp and tend to clog the machinery thus delaying the working speed of a factory.

ANNEX 4

**"Advice to Growers on Ceratostomella Disease of Cocoa"
prepared by
Ministry of Agriculture, Lands & Fisheries, Trinidad**

ADVICE TO GROWERS ON CERATOSTOMELLA
DISEASE OF COCOA.

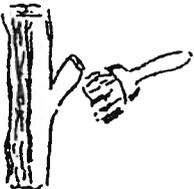


Ministry of Agriculture, Lands & Fisheries
St. Clair,
Port of Spain,
Trinidad.W.I.
December 3rd. 1958.

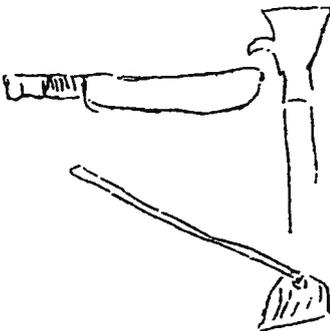
Preventive Measures



- (1) The complete removal and destruction, preferably by burning, of any infected trees.



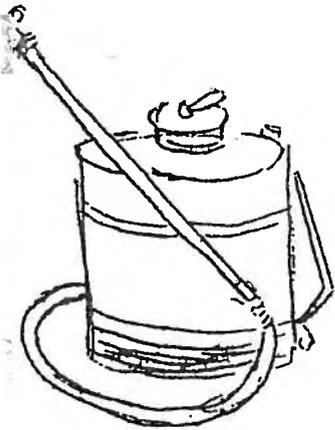
- (2) The application of a wound dressing, such as "Fylomac", to cut surfaces after pruning and suckering.



- (3) The sterilization of all cutting tools, cutlasses, hooks, etc., in 10% formalin, after working on each tree.

- (4) Avoidance at all cost of any unnecessary damage to trees during weeding, cutlassing, suckering, pruning, etc.

Control Measures



Good results have been obtained for the control of this disease in Ecuador by spraying with toxaphene to control the shot hole borer insect, which has been proved to be an important vector of the disease. As this insecticide is not at present available locally, the following insecticides, which are known elsewhere to give control of shot hole borers, are recommended.

High Volume application

One gallon of dieldrin (20% emulsible concentrate) or 3½ lbs. of BHC (6.5% gamma, dispersible powder) to forty gallons of water.

Low Volume application

¼ gallon of dieldrin or one pound of B.H.C. to two gallons of water.



MINISTRY OF AGRICULTURE, TRINIDAD AND TOBAGO

Advice to growers on Ceratostomella
disease of Cocoa.

The following information is issued to growers to help them to recognise this disease and prevent its spread.

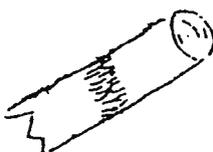
Symptoms



(i) A sudden wilting and death occurs in the affected trees, or, in some instances the branches or the chupons of a tree.



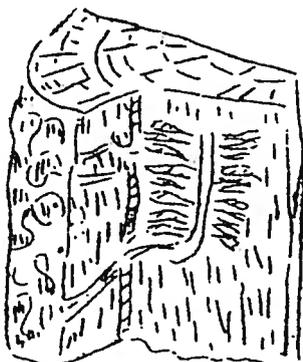
(ii) The leaves become increasingly yellow in the portions of the blade between the veins, and long after they are dead, still adhere to the trees for several weeks. The trees then give the appearance of having been burnt.



(iii) The bark of the infected area becomes much darker than usual and is sometimes found dead.



(iv) The wood is discoloured and takes on a range of colours varying from red to purple to brown.



(v) Presence of shot hole borer insects is consistently associated with the condition. These can be recognised by a series of small holes throughout the woody area, and by the presence of "sawdust".

ANNEX 5

List of Participants

F.I.C.A

(NOMBRE DE PARTICIPANTS)

ANIMATEUR : Sandy HARPER

COORDINATEUR : RSM

Dates	Lieux	ACTIVITES								TOTAUX
		Planteurs		Commerçants et Transformateurs		Artisans		Autres		
		H	F	H	F	H	F	H	F	
23/06/1997	N'ZEREKORE	14	-	5	-	-	-	1	-	20
24/06/1997	MACENTA	5	-	3	-	-	-	5	1	14
TOTAUX		19	-	8	-	-	-	6	1	34