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Report on the beverage crop sectors in Côte d'Ivoire and Togo, based on a visit from 22 February to 8 March 1991.

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1. Summary and Recommendations

Summary

1.01 The international markets for both cocoa and coffee have slumped during the late 1980s and early 1990s. Developing country producers have lost many billions of dollars from the price collapse. Producing countries in West Africa have been particularly hard hit as their economies depend on coffee and cocoa for foreign exchange and for employment for the rural population.

1.02 Côte d'Ivoire and Togo have both suffered as a consequence of the world slump in coffee and cocoa prices. Côte d'Ivoire, the world's largest cocoa producer and one of the world's largest coffee producers, has lost billions of dollars in foreign exchange. So dramatic has the decline been that Côte d'Ivoire debt now trades on the secondary market for only 10% of face value. Togo, which depends on cocoa and coffee for 20% of its export earnings, has also suffered.

1.03 The case for examining the beverage crop sectors on the Côte d'Ivoire and in Togo is based on the importance of the crops to their economies. In order to develop appropriate technologies, it is necessary for NRI to investigate the situation in those countries, like Togo and Côte d'Ivoire, where coffee and cocoa are important crops and where the world price falls are likely to have had a major impact. In terms of ODA development priorities, the cocoa and coffee industries of West Africa also deserve investigation as production is overwhelmingly a smallholder activity. It is, therefore, the smallholder who is one of the hardest hit by the price collapse.

1.04 Output trends of coffee and cocoa in the two countries have diverged during the 1980s. Whereas on the Côte d'Ivoire the production of cocoa grew rapidly to surpass that of robusta coffee, in Togo the reverse occurred. On the Côte d'Ivoire the relative profitability of cocoa (linked closely to the natural production advantages for cocoa growing on the Côte d'Ivoire) encouraged the growth of cocoa output. In Togo, the success of the SRCC, an independent research and extension service, has lead to substantial growth in coffee output.

1.05 In both countries, parastatal organisations have complete control over the marketing of coffee and cocoa. Grower prices and marketing margins are fixed each year, with the declared objective of ensuring fair and stable returns to the grower. In the 1970s and early to mid 1980s, these organisations generated immense surpluses by holding grower prices well below world price levels. These surpluses were used to finance public investment programmes. Today, the organisations are facing imminent demise. International development agencies insist that future assistance will be conditional on reform of the marketing

authorities. In particular, the pricing system is being questioned, with its inability to reward good quality and to penalise poor quality.

1.06 On the Côte d'Ivoire, the cocoa sector appears to be healthy, in spite of low price levels. Production is competitive, with costs probably the lowest amongst the main producers. Research and development efforts are aimed at improving varieties and agronomic practices which will consolidate these strengths. Quality does not appear to be a major problem. Although Ivorian cocoa is not valued as highly by the market as is Ghana origin, prices are still relatively strong. Improvements in quality, including the more effective drying of the crop, present few technical problems, but, with a price structure which does not reward growers for the extra effort involved, there is no likelihood of quality improvements in the short term.

1.07 The Ivorian coffee sector, by contrast, has been suffering from a declining quality reputation. The relative profitability of cocoa production discourages investment in coffee and, as figure 9 shows, yields have declined. Growers appear to have been putting in the minimum of effort to produce a generally poor quality product, with small bean size and disproportionately high levels of "black beans". Efforts to improve quality have floundered due to the inflexible pricing system of the Caisse de Stabilisation which has paid no premium for higher grade samples. In the current coffee season a premium will be paid for samples with lower proportions of black beans. However, critics regard these attempts as too marginal to have a major impact. Researchers and extension workers agree that there are no technical barriers to improving coffee quality, the problem lies with the pricing system. If growers could be assured of adequate recompense for their efforts, coffee quality would begin to improve very quickly.

1.08 Togolese cocoa production benefits from many of the production advantages which makes Côte d'Ivoire so competitive; favourable climate, good infrastructure and good quality beans. In addition, the practice of certain Ghanaian production methods affords cocoa from Togo the same market premium which Ghanaian cocoa commands. However, the cocoa sector in Togo has declined steadily over the last fifteen years. Attempts at redeveloping the sector have been unsuccessful. This is believed to be partly a consequence of poor extension recommendations, and partly a result of the poor prices offered to growers. Whilst the problems with extension advice have now been remedied, further developments in the sector are conditional on the price level. As on the Côte d'Ivoire, little research work is being done on quality improvement.

1.09 Production of robusta coffee in Togo has expanded substantially under the SRCC programme, to such an extent that output of coffee now exceeds that of cocoa. Togo robusta is valued by the market for its mildness and its good bean size (a function of the age of the new coffee)

and, to date, the efforts of SRCC seem to have prevented the kind of quality problems being faced on the Côte d'Ivoire. However, the poor outlook for robustas in the world coffee market and the current low prices threaten to dissuade the Togolese grower from the disciplined production regime which SRCC have encouraged. Mindful of this, IRCC Togo have been investigating ways of improving further the quality of robusta, including the use of wet processing techniques. These developments will come to nought if the price system does not change to accommodate the payment of premia for higher quality.

Opportunities

1.10 In Côte d'Ivoire, the opportunities for NRI appear at this stage to be limited. The issue of quality in Ivorian cocoa is one of consistency, which is the responsibility of the exporter. Since the exporter's margins are fixed by the state, there is little incentive to improve standards of sorting. The quality issue for Ivorian coffee also concerns pricing policy rather than specific technical advice. Substantial improvements in Ivorian cocoa and coffee output can be effected through changes in micro-economic policy. Such changes are the sine qua non of improving Ivorian coffee and cocoa production. Additional technical measures, such as the use of black sheeting to accelerate drying, are marginal improvements in comparison with these policy changes.

1.11 Opportunities are more interesting in Togo. Since Togo coffee and cocoa are already of relatively high quality, commanding market premiums over standard grades, the issue of quality is vital. Particularly in the case of coffee, research is being conducted on processes which will increase further the quality of the Togolese product. In such an atmosphere of marginal quality improvement, some of the basic research which NRI is conducting may be appropriate. Furthermore, IRCC has expressed an interest in co-operating with NRI. Lastly, with the likely withdrawal of World Bank money from the fourth phase of the SRCC project, IRCC are likely to be short of funds for research. This augers well for some form of NRI input.

1.12 Basic research on coffee and cocoa quality is being conducted at IRCC laboratories in France and throughout West Africa. This work covers the adding of value through extraction of oil, chlorogenic acids and caffeine, and the identification of sulphur compounds implicated in the development of "stinkers" in roasted coffee. For cocoa, scientists have looked at the relationship between pyrazine content and chocolate aroma, the influence of enzyme addition on fermentation and the effect of partial extraction of pulp juice. Various mechanical innovations are also being considered to improve the quality and efficiency of pulping, fermentation, drying and so on. It will be important to develop links with IRCC headquarters in Paris if NRI decides to become involved in

cocoa and coffee quality research in order to avoid duplicating activities.

Recommendations

1.13 (Formal) contact should be established with IRCC headquarters in Paris and with key scientific staff at the chemistry and technology department of the CIRAD research centre at Montpellier. Current and planned work on cocoa and coffee quality improvement should be determined, and opportunities for liaison investigated.

1.14 Conditional on 1.12 (above), and on the success of the current NRI basic research on the chemical variability of green bean coffee samples, contact should be made with IRCC, Togo in order to procure samples of washed and unwashed robusta for laboratory analysis in the UK.

1.15 Possible future NRI participation in work on coffee and cocoa quality on the Côte d'Ivoire should be conditional on the reform of the marketing system.

2. World Market Situation

Cocoa

2.01 World cocoa supply has exceeded demand in the six consecutive cocoa seasons to 1989/90. Although consumption has been growing steadily, the scale of production growth (see figure 1) has been such that prices have fallen for the last seven years. In real terms, prices reached their lowest ever levels in 1989 (see figure 2).

2.02 Most cocoa producing countries have increased their output of cocoa in the 1980s, but the most significant increases have come from Indonesia (16,000 to 120,000 tonnes), Malaysia (60,000 to 250,000 tonnes) and Côte d'Ivoire (460,000 to 720,000 tonnes). In the face of this prodigious increase in output, the International Cocoa Organisation's (ICCO) attempts at price intervention were useless. In spite of accumulating a buffer stock of 250,000 tonnes, the ICCO could not sustain world prices. By December 1990 total cocoa stocks had also reached record levels.

2.03 With this combination of high production and stocks, recovery in the cocoa market is likely to be slow. Positive developments for a price recovery are likely to come from the high cost producers[1] who will be forced to cut back production where world prices fail to cover variable costs. On the demand side, consumption, particularly in the Far East, seems likely to continue to grow. These developments should produce a recovery from the historic lows of 1989 and 1990.

2.04 The unknown factor in the world cocoa market is provided by Côte d'Ivoire, which produces over 30% of world supply. If, as is predicted by some analysts, Côte d'Ivoire decides to devalue then production could begin to accelerate again, postponing a price recovery. If, on the other hand, devaluation is not undertaken then output may continue to stagnate with a commensurate increase in prices.

2.05 World beverage markets is notorious for its instability. Price peaks encourage the planting of new trees which, due to the nature of the crop, only start to yield after three to four years. As this new cocoa comes onto the market so prices begin to fall back, discouraging maintenance and replanting of the crop which leads to a lagged fall in output, in response to which prices will rise. The obvious solution is an effective international cocoa agreement. However, the history of international commodity agreements has been chequered, and the cases of both cocoa and coffee agreements demonstrate the difficulty of influencing world prices in the face of over-production.

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1) Particularly Malaysia and Brazil.

Coffee

2.07 Coffee prices slumped in late 1989 with the ending of the ICO quota system. This system had failed to represent the demands of consuming members for high quality mild coffees and increasing numbers of buyers were forced to look outside the quota system for their supplies. As a result, a dual market emerged with non-quota sales being widely discounted. Finally, it became impossible to hold the agreement together and a "free market" was reestablished in July of 1989.

2.08 The free market was characterised by exporters selling off vast stocks, assembled during the quota period[2]. In response, coffee prices fell to record lows (see figure 3).

2.09 Recovery from this price level may be difficult. Relatively static coffee consumption, strongly influenced by health concerns[3] in the United States and Europe, means that, for the time being, changes in production hold the key to changes in the market situation. Lower than anticipated Brazilian output forecasts have prompted a slight recovery in the price of arabicas, and the temporary banning of exports from Brazil caused a flurry of buying. The robusta market, however, remains weak. As the relative price of arabica has fallen, blenders have been replacing robustas with arabicas, so demand for robusta has fallen. In the short term, active selling by robusta producers has pushed up stock levels in consuming countries and exerted further downwards pressure. As with cocoa, market recovery is likely to come from restructuring of world production where high cost producers gradually leave the market, reducing output and increasing price.

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2) ICO member countries had their share of the lucrative quota market determined by a formula based on past production and stock levels. Many countries accumulated unseasonably large stocks to increase their share of the global quota.

3) This principally consists of concern over the effects of caffeine.

Country Studies

3. Côte d'Ivoire

3.01 Once the star performer of sub-Saharan economies, Côte d'Ivoire based economic growth on its commodity export sector. Major development of cocoa and coffee plantations coupled with systematic exploitation of forestry resources bought in large amounts of foreign exchange and helped to produce six to seven percent annual GDP growth rates in the 1970s. During the early 1980s when weakening commodity prices and a severe drought reduced earnings from exports, the Ivorian growth rate declined. In the late 1980s and at the start of the 1990s, low and negative growth rates have re-occurred as commodity prices have dipped.

3.02 With a currency tied to the French franc[4], Côte d'Ivoire does not have the option to withstand world commodity price falls by devaluing. Thus, in comparison to growers in other West African countries such as Ghana and Nigeria, Ivorian growers are hit harder by world price falls.

3.03 A characteristic of the Ivorian commodity sector is the rôle of the Caisse de Stabilisation[5]. Acting as a form of marketing board, the Caisse sets a fixed price each growing season for major export crops. This price is supposed to guarantee the grower a "fair" return. Should there be any difference between the fixed price and the ruling world price, the Caisse will appropriate positive balances and subsidise negative balances. Substantial positive balances, such as those generated during the coffee and cocoa price peaks of the late 1970s, were used by the state to fund public investment programmes.

3.04 The Caisse's objective is to guarantee a fair and stable revenue to cash crop producers throughout the season. This is achieved through setting an export price and making a series of fixed deductions[6] to arrive at a single producer price. This price is operative throughout the country; no allowance is made for differing transport charges.

3.05 In the late 1970s and early 1980s, the Caisse extracted a considerable surplus through holding producer prices below prevailing world prices. From 1980 to 1987, £4

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4) 1 French franc = 50 CFA.

5) The *Caisse* is the "caisse de stabilisation et de soutien des prix des produits agricoles" (stabilisation and price support fund for agricultural products).

6) Each year the Caisse sets a fixed CIF price for various commodities. From this price are deducted certain marketing charges. These charges, known as the "barème" or "différentiel", consist of fixed rates for collection, freight, reconditioning, etc. Further fixed deductions, the "hors barème", are made for transport, costs of running the *Caisse*, subsidies for local processing ventures, etc. What is left is the grower price.

billion was transferred by the Caisse to the state from cocoa growers alone[7]. In recent years, however, pressure has been applied for the payment to the grower of a higher proportion of the world price.

3.06 The operations of the Caisse have been criticised by some observers for their unwieldiness in the face of rapidly changing market conditions. Certainly, the lack of a facility to pay premiums for good quality is a serious constraint to improving standards. The simplistic reduction of various fixed intermediate marketing charges (collection, reconditioning, packing, etc.) which has been undertaken to minimise the reduction in grower prices, has increased the incentive for buyers to defraud the grower. Furthermore, the costs of the Caisse reflect bureaucratic inefficiencies[8] and threaten to increase overall production costs. Reform of the Caisse is fundamental to further development of the Ivorian coffee and cocoa industries[9].

3.07 Although the development of petroleum processing industries has helped to diversify the Ivorian economy in the last ten years, coffee and cocoa still represent almost half of total export earnings for the country. Thus the late 1980s coffee and cocoa price collapses have reduced export earnings by a considerable degree; for example, 1989 cocoa earnings were 32% down on 1985 earnings[10] in spite of exports having increased in quantity by 25%. The unfortunate co-incidence of cocoa and coffee price falls has served to exacerbate the problem.

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7) *Compétitivité du cacao Africain*, CIRAD, 1990.
8) CIRAD, 1990. op. cit.
9) The recent sacking of the head of the *Caisse* is seen as the first move in reforming the organisation, something high on the list of priorities for both the IMF and the World Bank.
10) *Africa Analysis* 117 8th March 1991

4. The Ivorian Cocoa Industry

Production

4.01 Côte d'Ivoire has around 700,000 cocoa growers operating on an area of approximately 2 million hectares. Cocoa holdings are typically small, with the majority (2/3) being less than 5 hectares. Output in the 1990/91 season is estimated at just over 700,000 tonnes[11]. Output has climbed steadily (see figure 4) since the start of the 1980s as a result of area expansion efforts, although recent record low prices have caused the cutback in output seen in the last two years.

4.02 Though encouraged by the huge price rises in the late 1970s, the main driving force behind the increase in cocoa output was the unusual combination of production advantages which Côte d'Ivoire possesses, including:

- favourable climate, especially the timing of the dry season which coincides with the main cocoa harvesting season, improving drying after fermentation;

- relative availability of fertile lands, especially forest lands (although the supply is now declining);

- availability of labour;

- good phytosanitry conditions, resulting in low investment requirements for fungicides;

- young age structure of trees (two thirds under 15 years old);

- good infrastructure (roads) and relative political stability;

- intrinsic quality of Côte d'Ivoire beans.

4.03 The combination of these advantages has made Côte d'Ivoire one of the world's most competitive cocoa producers, with the lowest costs of production of any major producer. CIRAD[12] calculate production costs at around 120 CFA per kilo for high yield enterprises (c. 500 kgs per hectare) and 140 CFA for low yield (c. 250 kgs per hectare)[13]. This compares with production costs 50% higher in Cameroon, 100% higher in Malaysia and 150% higher in Brazil. The main determinant of production costs on the Côte d'Ivoire is labour. Few capital inputs are used apart from some anti-capsid insecticides.

4.04 The complex system of land ownership on the Côte d'Ivoire has tended to encourage growers to "over-produce"

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11) ICCO, 1990
12) CIRAD, 1990. op. cit.
13) Using a daily wage rate of 1,000 CFA - possibly an underestimate.

cocoa at a point where their daily earnings from the crop do not match alternative earning opportunities. Much of Côte d'Ivoire expansion in cash crops has been based on the encouragement of migrants, both internal and external, to farm forest lands. To attract migrants, the state offered ownership rights to forest land cleared for cash cropping, and in attempting to establish themselves in this alien environment, many of the migrants have worked beyond the strictly financial optimum to gain security through land ownership.

4.05 The activities of the migrants in part explains the differing yields experienced in the country. In the south west, where migrants constitute 90% of cocoa growers, yields are around 660 kg/hectare, whilst in the south east, where native landowners dominate, yields only just clear the 200 kg/hectare level.

Marketing

4.06 Due to favourable climatic conditions, growers on the Côte d'Ivoire tend to ferment and dry their own beans. The dry beans are collected from the growers by a network of buyers, each operating on behalf of an exporter. One sixth of these buyers work with the state-encouraged co-operatives which were introduced to free growers from the private buyers[14].

4.07 Private buyers do not only purchase beans, they also provide growers with chemical inputs and with credit. The provision of credit is particularly important for the rural population as their main cash expenditure - school fees - becomes due in September whilst the cocoa harvest does not begin until November. Effective interest rates for this credit, paid in cocoa beans, is thought to be high and fraud at this stage is common[15].

4.08 Buyers have to submit their purchased beans to testing by Caisse staff at various collection centres throughout the country to verify moisture content and other quality dimensions. Once tested, the beans are delivered to the exporters. Only recognized and licensed exporters are allowed to export cocoa. Three quarters of total exports are handled by just four companies. In total, 16 companies handle the export of Côte d'Ivoire beans. Export quotas are allocated to each of the exporters. Often, these quotas are allocated on the basis of political patronage, although there is a secondary market in quotas which provides some impetus for improving efficiency within the industry.

4.09 The traditional markets for Ivorian cocoa include the Netherlands, USA and Germany. In addition to selling

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14) Over half of private buyers are of Lebonese extraction, which apparently increased the popularity of the co-operative policy amongst the indigenous population.
15) CIRAD, 1990. op.cit.

cocoa beans, Côte d'Ivoire also sells cocoa products such as powder, butter and cake, usually manufactured from the second quality beans graded out by exporters.

4.10 Exports of Ivorian cocoa have been disrupted in the last two years by attempts to withhold beans to raise prices. Export figures are not yet available for the last two years, but they are expected to show a substantial decline for the 1989/90 season. 1980 to 1988 exports are shown in figure 5.

Quality

4.11 Quality is a subjective issue. The market may reward particular origins with a premium (eg. the London market premium for cocoa from Ghana) but this can be due to a particular preference for the taste (le "goût anglais" - the English taste - as the French refer to it) rather than because of a reduction in impurities or higher fat content, for example. Ivorian cocoa is accepted as the industry standard grade, partly because it constitutes such a large part of total world output and partly because of its quality is considered to be good, although inferior to Ghana and Cameroon origins, whilst comprehensively better than Malaysia and Indonesia origins.

4.12 So far as objective measures of quality go, the most important problem faced by Côte d'Ivoire producers is the lack of sample consistency. This leads to Ivorian cocoa being discounted by £15 to £30 per tonne on the London physical market. In principle, this could be handled by the exporters themselves through better grading.

4.13 Wider quality issues, such as the reduction in moisture content, increased fat content, lower acidity and other market favoured attributes are long term concerns which most producing countries, Côte d'Ivoire included, look at in their long term industry development strategies.

Cocoa vs. coffee

4.14 On the Côte d'Ivoire, cocoa and coffee are often in competition for the same labour resources. Cocoa growers will usually possess coffee trees and coffee growers cocoa trees. The interaction of the two crops therefore has some impact on output.

4.15 The price advantage of coffee over cocoa disappeared in the mid 1970s and today their prices are roughly the same[16]. However, cocoa requires a lower management input, with a much lower weeding requirement than

16) See figure 6, which allows for a conversion rate from dried coffee cherries to green bean coffee of 50% (2 kgs cherry = 1 kg green bean). This is then comparable with the price of dry bean cocoa.

coffee[17]. Thus, for the same yield, cocoa has a higher return to labour than coffee (see figure 25). It is estimated that coffee prices would have to increase to a level 1.25 to 1.5 times that of cocoa before the relative advantages of cocoa are eclipsed and the balance begins to shift towards coffee[18], with commensurate increases in coffee yields.

Research

4.16 Cocoa research on the Côte d'Ivoire is handled by the IRCC[19], whose head office is at Bingerville, just outside Abidjan. In 1988, the IRCC was funded by the Côte d'Ivoire government (55%), by CIRAD (3%) and by sales of products and services (42%). Emphasis is being placed on breeding programmes designed to increase productivity by increasing yields and reducing disease susceptibilities. Agronomic factors, including nursery developments, plant spacing, rehabilitation and fertiliser recommendations are also receiving attention. On entomological issues, the main work is on mirid pests and in plant pathology work concentrates on the fungal disease black pod. Technological developments are taking place on solar drying of cocoa.

4.17 As research funds are drawn partly from sales of cocoa and coffee produced on the IRCC's experimental stations, declining world prices have reduced funds available for research. Thus, in absolute terms, there will have to be a reduction of research effort, which may mean that speculative projects cannot be funded through established sources.

4.18 Although there are no serious quality problems associated with Ivorian cocoa, there may still be opportunities for raising the technical standard of cocoa beans through post harvest work. At IRCC work has been conducted on the fermentation and drying process, including testing the techniques of cutting the bean before fermentation and delayed solar drying[20]. Neither have proved very effective to date. Elsewhere attempts are being made to reduce the labour input, especially in designing and perfecting mechanical podders. Current Brazilian models do not perform to specification.

4.19 Various chemical assays are being conducted by IRCC in conjunction with CIRAD at Montpellier, including:

- the influence of fermentation and roasting on the percentage of pyrazine in cocoa beans;

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17) Mainly due to the relative canopy size of the two trees.
18) *ADB coffee sub-sector review; robusta coffee.* ADB, 1990.
19) Institut de recherche du café et du cacao
20) Where beans are left in the shade for varying amounts of time after fermentation to try to develop the taste.

- the effect of enzymes on fermentation times of cocoa;

- the effect of different agronomic practices on the quality of cocoa fat;

- the effect of roasting on chocolate aromas and volatile compounds.

4.20 It is the rôle of SATMACI[21] to extend the technological and management developments produced by IRCC. Although the director of SATMACI believes that the main problem for cocoa (and coffee) growers is the low price and the lack of alternative cash crops, the focus of effort has been on the extension of intensive management practices to growers, including the distribution of the new higher yielding hybrids. This exhortation to intensify has led some to criticise SATMACI and the IRCC for not being reconciled to the needs of the small farmer.

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21) SATMACI - La Societé d'Assistance Technique pour la Modenisation Agricole de la Côte d'Ivoire.

5. The Ivorian coffee industry

Production

5.01 Côte d'Ivoire was once the world largest producer of robusta coffee. In recent years, though, growth rates have declined and Côte d'Ivoire is now the third largest robusta coffee producer, behind Indonesia and Uganda.

5.02 Coffee, like cocoa, has played a fundamental part in the economic development of Côte d'Ivoire. Production was encouraged in the sixties and 1970s with the opening up of the virgin forest lands, and the area planted to coffee grew steadily (see figure 7). Through the activities of the Caisse, substantial investment surpluses were generated, and as late as the early 1980s, coffee was providing 9% of government revenue[22].

5.03 As Côte d'Ivoire diversified its production base and as coffee yields declined further[23], the rôle of coffee in the Ivorian economy also declined. Now coffee accounts for less than 2% of GNP, down from 8% in the late 1960s and 5% at the start of the 1980s. The absolute fall in the world coffee price occasioned by the end of quotas has played its part in this reduction. But equally strong forces within the Ivorian coffee sector have also had an impact.

5.04 There are an estimated 390,000 coffee growing families on the Côte d'Ivoire. Within these families, the responsibility for coffee production tends to reside with men, although women and children take part in the harvest and maintenance of plots. Together, these families farm 1.4 million hectares of coffee, of which 1.2 million hectares is thought to be productive. Over 90% of holdings are less than 10 hectares, with 25% less than 2 hectares and 71% less than 5 hectares[24]. To all intents and purposes, therefore, coffee production, like cocoa production, is overwhelmingly a smallholder occupation.

5.05 A characteristic of the Ivorian coffee sector is the venerable nature of the majority of the country's coffee trees[25]. Whilst 57% of cocoa trees were planted after 1970, only 37% of coffee trees are of this vintage. Indeed, over a quarter of all coffee trees were planted before 1960.

5.06 Partly due to the age of the tree population, and partly due to labour shortages and relative land abundance, coffee production on the Côte d'Ivoire is an extensive activity; the use of fertilisers, sprays, etc. is very

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22) ADB, op.cit.
23) See figure 9
24) ADB, 1990. op.cit.
25) The economic life of a tree is around 25 years, with yields dropping off quite quickly after the 6th or 7th year, levelling off around the tenth. See fig 10.

limited. Development was achieved through area expansion rather than rehabilitation or intensification.

5.07 Figure 8 shows how production of coffee on the Côte d'Ivoire has developed over the past thirty years. Expansion of area into the virgin rain forest zones accounted for the initial development, and good soils helped to sustain production. Now, however, production appears to be settling down to a lower level. With minimal use of fertilisers, yields will continue to decline in line with soil fertility. Though production has fallen off noticeably in the last three years in response to the fall in international robusta prices, it is clear from figure 9 that yields on the Côte d'Ivoire have been falling steadily for the last twenty years.

5.08 The redevelopment of the Ivorian coffee industry will require a substantial injection of effort. To replant all the areas where coffee trees have become senile would require the use of 238 million young plants per year over the next five years. Yet the estimated 1989 production of young plants was only 60 million.

5.09 Coffee production costs were calculated for Côte d'Ivoire by the World Bank in 1986. An updated version appears in table 1. Traditional production methods using unimproved varieties and minimal management show a return per manday of under 1,000 CFA. The World Bank also established that a return per manday of just over 1,000 CFA was possible given the use of improved varieties (together with a low labour input regime).

5.10 A study of the extension policy of SATMACI by Ruf[26] has indicated that the tendency towards low input coffee farming has a sound economic basis. Ruf has shown that, except on the youngest plantations, returns to labour are such that the most efficient[27] regime involves just one weeding session per growing season. Yet, in an attempt to reverse the stagnation of the industry, Côte d'Ivoire extension policy encourages growers to weed up to four times per season. There is evidence that 2 to 3 weeding sessions may be appropriate on the very youngest plantations (four to 10 years) but on plantations over 10 years old, one, and at most two weeding sessions correspond with rational economic behaviour on the part of the smallholder.

Marketing

5.11 The robusta coffee harvest on the Côte d'Ivoire lasts from November to April, coinciding to some extent with the cocoa harvest (October to February). After strip-

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26) Le café et les risques de l'intensification - Cas de la Côte d'Ivoire et du Togo Ruf, F et Ruf, T in Milleuille et Eloin Le risque en agriculture ORSTOM, 1989.
27) ie. economically efficient

picking[28] the coffee, growers dry the coffee cherries in the sun. This takes from 10 to 14 days. The dried cherry is then bought at the fixed Caisse price[29] - announced in advance of the harvest each year - by private traders, many of whom also purchase cocoa. The traders act on behalf of 200 or so licensed buyers, most of whom operate in turn on behalf of the 34 licensed exporters. In addition to the private traders, there are around 2,000 co-operatives who also buy coffee.

5.12 As is the case with cocoa, traders do not only buy the crop, they also provide growers with other services, particularly credit. And as is the case for cocoa, traders are believed to manipulate credit arrangements to effectively pay illegal low prices for coffee.

5.13 Up to the end of the 1970s, growers would hull[30] the coffee on the farm. Since then, centralised hulling factories have been set up, raising the recovery rate of cherry to green bean from 47% to 52%. There are 16 hulling plants situated around the country (15 of which are owned by the exporters themselves), and the coffee traders deliver their purchases direct to these plants. From here, the unsorted green bean coffee is delivered to the exporters where it is sorted to remove impurities, and graded.

5.14 Caisse determined prices are set in precisely the same way for both coffee and cocoa. An export price is set each year, and fixed deductions are made for the various marketing services to arrive at a grower price. Thus, the exporter has no formal control over the per-unit profit. In effect, the exporter is merely an agent for the Caisse.

5.15 In an attempt to maintain grower prices, the Caisse has recently made arbitrary reductions in the fixed margins it allows exporters, buyers and processors. In the past four years, these margins have consistently failed to reflect the rise in the cost of living and, after showing considerable resilience, many exporters are now in financial trouble.

5.16 The main export markets for Ivorian coffee are the countries of the European Community. Italy now represents the largest market, with the Netherlands and the USA also important.

Quality

5.17 There are a variety of views on the definition of "quality" in coffee. It is common to declare that robusta coffee is of a "lower quality" than arabica, using the

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28) A technique whereby all the coffee is picked at one time, regardless of the maturity of many of the cherries.
29) see figure 6
30) Hulling involves the removal of the dried cherry to leave the green bean.

market premium for arabica coffees as evidence. However, this is a simplistic view; the two products are really separate. The quality of any particular robusta coffee should be discussed in relation to other robusta coffees, rather than in relation to arabicas.

5.18 The most commonly used parameters of quality in robusta coffee samples are size of bean and absence of defects and impurities. In general, the taste or flavour of robusta coffees cannot be used to characterise quality, as different markets prefer different taste profiles. There are accepted "off" characteristics which all markets discount, but mild robustas, such as those produced in Togo, and harsh robustas, such as those produced on the Côte d'Ivoire, appeal to different markets[31].

5.19 The quality of Ivorian coffee has become a major source of concern to the industry over the last ten years. The causes of low quality are usually concerned with poor growing conditions, age of trees and post harvest handling. The problem is manifested in the apparent reduction of grade 1 exports from Côte d'Ivoire in the last few years[32].

5.20 Small bean size in Ivorian robusta is caused by (1) the apparent lack of water during the important growing phase of the cherry in July and August[33], (2) excessive age of trees, and (3) premature harvesting. Since there is very little which can be done in the short term about the provision of irrigation and the age of coffee trees, the only feasible short term response is to ensure that correct harvesting is carried out.

5.21 The improper conduct of harvesting is similarly culpable in producing "black beans", beans which possess a brown or dark brown appearance and which can only be sold at a substantial discount. Figure 11 shows that the rate of black beans has exceeded 10% on 5 occasions in the 1980s, and although figures are not available for the end of the decade, IRCC sources state that the rate has increased. The average figure masks the fact that, in some areas the proportion is approaching 25%. In general, the "black beans" have to be sorted from the sample before export. So great is the production of "black beans" on the Côte d'Ivoire that there is evidence to suggest that there are over 1 million bags of outgraded and all-but unsaleable coffee currently in store in Abidjan.

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31) For example, the French and Italians have a preference for the harsher robusta quality of Ivorian robusta whilst the British and German markets prefer a milder version, such as those produced in Togo and in Uganda.

32) See for example "Note sur la qualité du café en Côte d'Ivoire" Direction et controle des grands traveaux, August 1989.

33) A phenomenon which is said to be growing as West Africa becomes drier with climatic change.

5.22 The physical cause of "black beans" is the harvesting of immature (green or yellow) and over-mature cherries, a characteristic of the strip-picking system. Three factors dispose Ivorian growers towards this system of harvesting coffee: first; the high cost of labour relative to both value of output and total production costs, second; the absence of any premium for good quality harvesting, and third; the difficulty of identifying quality in dry cherry[34].

5.23 Another strong incentive to pick immature coffee cherries is the need for immediate cash funds in the September/October period when school fees become payable. To support this contention, when the buying season was delayed by public decree in 1987 there was a marked reduction in the incidence of black beans[35].

5.24 An additional and equally important cause of black beans is poor drying of the cherry, usually occasioned by drying on soil. Technically, the use of black plastic sheeting has been advocated as an appropriate response to this problem, but, again, investment in this technique is ill-advised if inadequate recompense is awarded through the market price. Improperly dried cherry can also result in mal-fermented beans, known as "stinkers", whose execrable flavour will ruin a sample.

5.25 The plethora of recommendations for changing the "one price" system of buying to accommodate a premium resulted in a major policy change for the 1990-91 season. During this season, a 12% premium is being paid for good quality coffee[36], with a 0.12% discount for each 1% of black beans included, corresponding to a 12% reduction for a sample of 100% black beans.

5.26 However, in practice it is difficult to identify quality differences at the dry cherry stage. Furthermore, the 12% premium is probably inadequate for the additional labour required to harvest selectively and the 0.12% discount for black beans is modest. For these reasons, some observers of the Ivorian coffee industry believe that the scheme will have a marginal impact.

5.27 In conclusion, the poor quality of Côte d'Ivoire robusta coffee is caused not by lack of technical know how on the part of the grower but by a lack of economic incentive to improve the situation.

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34) Although moisture content can be easily assessed at the dry cherry stage, it is difficult to assess the proportion of outgrades until the coffee is hulled and the green bean is produced.
35) ADB, 1990. op.cit.
36) Defined as coffee free from black beans. See Public Ledger, 1.2.91 pg 1. "Côte d'Ivoire moves to raise coffee quality"

Cocoa vs. Coffee

5.28 Section 3.15 states that returns per man day for coffee production on the Côte d'Ivoire compare unfavourable with those from cocoa; this is corroborated by table 1. As cocoa is usually a direct alternative to coffee, the development of the Ivorian robusta coffee industry is fundamentally constrained by movements in the relative price of coffee and cocoa. This emphasises the point that the Ivorian grower operates within the confines of a farming system where there are both complementary and competing calls on labour.

Research

5.30 Coffee research is conducted on the Côte d'Ivoire by the IRCC. IRCC's most celebrated development has been "arabusta", a cross between arabica and robusta which combines the agronomic advantages of robusta (suitability in low altitude areas) with the market qualities of arabica (large bean size, preferred aroma, lower caffeine content). So far, pest and disease susceptibility and the relative labour intensity of production[37] have limited the adoption of the cross by the Ivorian grower.

5.31 Other research interests include the development of improved robusta varieties, applied research on management problems (spacing, the effect of fertilisers and the control of pests) and investigation of the effect of different harvest practices on yield. However, the director of IRCC has pointed out that the basic techniques for improving yield and quality of output are well understood by the grower; the problem is that the grower has no economic incentive to use the techniques.

37) Particularly the need to wet process.

6. Togo

6.01 Togo has a population of around 3.25 million, the majority of whom earn their living from agriculture. Per capita income is $300 per annum, although rural incomes are only one-third of this level[38]. In the 1960s, annual growth rates of 7% were achieved, thanks mainly to exports of high quality phosphates. These rates were amongst the highest in Africa. However, classic expansion of the public sector led to debt problems in the 1970s, and IMF financial stabilisation and adjustment programmes were introduced in the late 1970s and early 1980s to remedy the situation.

6.02 Agriculture accounts for 30% of Togolese GDP and export revenue. Cotton, coffee and cocoa are the most important export crops, each contributing around 10% of export earnings. Domestic food production makes the country self-sufficient in clement years, but in the 1980s production of food crops has failed, in common with much of sub-saharan Africa, to keep pace with population growth. With the exception of cotton and coffee, production of cash crops has fallen. Whilst Togo has suffered from climatic shocks, particularly the drought of 1981-82, this does not help to explain the poor performance of the agricultural sector. World Bank observers insist that the reason for the disappointing performance is that support for farmers, in terms of extension and prices, has been inadequate. To address these problems, the Bank lent substantial funds to Togo in the 1980s.

6.03 Togo operates the same monetary system as Côte d'Ivoire, linked to the french franc via the CFA. There are other similarities between the two economies. A parastatal - the Office des Produits Agricoles du Togo (OPAT) - is responsible for the purchase and export of cotton, cocoa, coffee, palm oil and groundnuts, and for the stabilisation of producer prices for these commodities[39]. In exactly the same way as the Caisse de Stabilisation on the Côte d'Ivoire, OPAT also sets margins of marketing intermediaries and provides funds from retained "surpluses" for state investment.

6.04 Under both local and expatriate planters, production of cocoa and coffee began early in Togo. The main production districts were Kloto, Akposso and Litime in the south-west. At the start of the 1970s it was apparent that a major rehabilitation and replanting exercise was necessary to modernise the beverage crop sector. Further impetus for a redevelopment was provided by the relative lack of prosperity of coffee and cocoa farmers in post independence Togo.

6.05 Due to the weakness of central government institutions, an independent project unit - the Société

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38) World Bank, 1988. Staff appraisal report, cotton sector development project, May 31, 1988.
39) Although there is no official stabilisation fund.

Nationale pour la Rénovation et Développement de la Cacaoyère et de la Caféière Togolaise (SRCC) - was established to manage development. SRCC now handles extension, applied research, input supply, seed production, marketing and road construction/ maintenance. The IRCC, based at Kpalimé, handles both basic and applied research.

7. The Togolese cocoa industry

Production

7.01 Cocoa production is concentrated in the Plateau region of western Togo, particularly the Litime and Kloto plains. Cocoa has been established in these areas for many years, in contrast to coffee. To illustrate this, whilst only 6% of today's coffee area was under coffee in 1950, over one third of todays cocoa had already been planted. Favourable conditions, including historically high world prices in the mid-fifties and the establishment of a cocoa marketing board in Ghana[40], further encouraged Togolese cocoa production.

7.02 Between the mid 1960s and 1970s, cocoa production declined due to the impact of the disease swollen shoot and various mirid pests. In 1971 FAC[41] assisted in a cocoa development programme which was followed up with the first of several IDA[42] backed cash crop development projects. The objectives of the development programmes included the planting of over 4,000 hectares of cocoa trees, the strengthening of extension services and the establishment of applied research programmes at IRCC.

7.03 Cocoa redevelopment efforts had a disappointing impact in comparison with those for coffee. According to Bank evaluations, poor replanting techniques, inadequate financial incentives and land tenure problems accounted for this failure. In addition, the success of the coffee development programme lead those growers for whom coffee was a viable agronomic alternative to switch from cocoa to robusta coffee. As a consequence, cocoa production became more extensive and the output of cocoa began to fall, as demonstrated in figure 12.

7.04 The total area planted to cocoa in Togo is estimated to be 35,000 hectares[43] with an average size of holding of four hectares. Due to the extensive nature of production, median yields are low, at 150 to 200 kg per hectare[44]. Figure 12 shows that production has fallen steadily since the early 1970s; after reaching a peak of 30,000 tonnes in 1972, production declined to 8,700 tonnes in 1989. With the reduced management input which accompanies low grower prices, early recovery of output is unlikely.

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40) The Ghana Cocoa Marketing Board paid a fixed price, protecting growers from world price fluctuations. The permeability of the Togo/Ghana border meant that Togolese growers could take advantage of this development.
41) Fonds d'Aide et de la Coopération; a French aid agency
42) International Development Administration of the World Bank
43) Rapport Final d'Exécution SRCC II, December 1987.
44) World Bank, 1986. Staff appraisal report, third coffee and cocoa development project.

7.05 After the initial IDA funded programme (1974), a second cocoa and coffee industry project was undertaken in 1979, providing for the development of a further 7,500 hectares of coffee and 4,000 hectares of cocoa. Once again, however, cocoa performance was weak. In 1986, the programme evaluation estimated that only 20% of the replanted area would yield "satisfactory" results. So poor were the results that a mid-term review was called for which revised objectives downwards, placing additional emphasis on capsid and black pod control programmes.

7.06 The first two coffee and cocoa development initiatives, both backed by the IDA, had succeeded in replanting only a small percentage of the cocoa area; 2,600 hectares out of a total area of over 35,000 hectares, leaving a senile population of under-productive trees. Thus, a further phase (III) of the project was proposed in 1986. This time, emphasis was placed on the intensification of production, as it became clear that mere extension of area was not having the desired effect and was stretching the resources of the extension service.

7.07 The third phase of the SRCC project will be completed in 1991. Plans are already being made for a fourth phase, but the indications from the World Bank office in Lomé are that further IDA involvement is unlikely.

Marketing

7.08 Primary marketing is controlled by licensed traders[45]. Seventy percent of this market is accounted for by a joint government and private operation; the société pour le commerce des produits (STCP). All cocoa, once purchased, is delivered to OPAT. As on the Côte d'Ivoire, marketing of cocoa is managed by a single parastatal enterprise which regulates prices and manages exports. In the past, notoriously large losses were made in "pre-financing" arrangements[46] between OPAT and the traders, and between the traders and a host of smaller sub-traders. This pushed up the costs of marketing, as these costs were ultimately borne by the grower. Today, pre-financing is no longer officially practiced.

7.09 Like the Caisse on the Côte d'Ivoire, OPAT effectively taxed the grower heavily when world prices were high. Figure 13 (and 24) show how, in the late 1970s and mid 1980s, a substantial differential between grower and FOB prices was maintained. In 1978 and 1979, when FOB prices were 800 CFA per kilo, growers were paid 200 CFA at the farm gate[47]. However, in the late 1980s, as world prices began

45) As in Côte d'Ivoire, there is a disproportionate amount of Lebonese involved at this stage of the marketing chain.
46) Whereby OPAT would provide money to the traders **before** produce had actually been purchased from the growers.
47) World Bank figures (1986) suggest per tonne marketing costs of 120 CFA per tonne for cocoa, including commission,

to fall back to their lowest-ever levels, OPAT was obliged to cut these implicit tax rates. Today, with grower prices at 225 CFA per kilo and FOB prices at below 500, effective tax rates are lower[48].

7.10 The similarity between the Caisse and OPAT extends to the inflexible pricing system. The same price is paid to growers for the whole year in every area of the country. Thus, as is the case in the Côte d'Ivoire, no allowance is made for the cost of transport from remote areas and no allowance is made for quality. Growers in accessible areas therefore subsidise growers in inaccessible areas. Figure 14 shows the evolution of grower prices (in real terms) over the last thirty years, with the late 1980s price falls highly visible.

7.11 The main markets for Togolese cocoa are the Soviet Union, Germany and, to a lesser extent, France[49]. Figure 15 shows Togo cocoa exports declining in line with falls in production over the same period, though with markedly greater variability.

Quality

7.12 Due to the similarity of growing conditions and growing practices[50], Togolese farmers produce cocoa of a comparable quality to that from Ghana - acknowledged to be the finest amongst mass-produced cocoas. In principle, therefore, Togo should be in a position to sell its cocoa at premium prices. In practice, with the main buyer being the Soviet Union, Togo has failed to establish itself firmly as a top quality producer. There are suspicions that this is due more to lack of marketing acumen than to poor intrinsic product quality, and this is reflected by the general lack of concern being shown by both the SRCC and the IRCC about cocoa quality, such that no official quality improvement work is now being performed.

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transport and taxes. Therefore the effective tax on Togolese growers was over 60% in the late 1970s and around 70% in 1985.

48) OPAT would argue that there is now no tax on growers, or, indeed, that subsidies are being paid. In practice, however, the high cost of OPAT administration and the lack of competition amongst the licensed buyers, who have their margins determined for them by OPAT, means that the grower is still paying an implicit tax to subsidise these inefficiencies.

49) 1988/89 import figures for Togolese cocoa; USSR 5004 tonnes (1989/90), Germany 2012 and France 626. (ICCO figures.)

50) Established early in the century when the borders of the two countries were more permeable.

Research

7.13 This relative lack of concern about quality is manifested in the research programme of the IRCC. Whilst there has been a small programme looking at differing chemical properties of cocoa butter from different cocoa clones, the emphasis of the research programme for cocoa is on developing higher yielding varieties, investigating agronomic practices, developing controls for pests, viruses and rots and improving water management where long dry seasons occur. Undoubtedly, there will be quality spin-offs from some of these programmes, particularly the control of black pod, but the basic focus is on intensification of production.

8. The Togolese coffee industry

Production

8.01 There are two types of coffee produced in Togo, both of which are varieties of coffea canephora; niaouli and robusta. Naiouli is an obsolete variety which is no longer systematically managed by growers, having been abandoned due to feeble yields caused largely by scolyte attack. Robusta is the major commercial variety now grown in Togo, and has formed the basis of developments in the industry over the last fifteen years.

8.02 Figure 16 illustrates the relative increase in productive area of robusta and the parallel decline in the area of niaouli during the 1980s. Production figures over the same period (see figure 17) show that this change in area is mirrored in the output figures. Combining area and output figures produces estimates of yield per hectare; figure 18 shows how yields for niaouli and robusta differ, with returns averaging 600 kg per hectare for the recently planted robustas and as little as 50 kg per hectare for the unmanaged, vintage niaoulis.

8.03 The majority of coffee plantations are located in the plateau region of south west Togo - Klouto, Kpalimé and Atakpamé. Total area is around 50,000 hectares and holding size is typically small; usually less than 1 hectare per family. Production of coffee peaked in the late 1960s at 17,000 tonnes (see figure 19), but fell back in the 1970s and early 1980s due to the dearth of improved planting material and complementary agronomic advice, and due to the low prices paid to growers over the period.

8.04 In order to retrieve the situation, SRCC was given the responsibility for redeveloping the sector. From the beginning, the SRCC peddled the principle of intensive management. SRCC operated a highly disciplined and energetic coffee extension system. Zealous extension workers employed by the SRCC advocated management consisting of up to five weeding sessions per coffee year for project areas. Any growers who were not providing this level of management input could be penalised through the twin sanctions of withdrawing credit opportunities and preventing access to new planting material. Thus, if the grower wanted to stay on the SRCC programme (and benefit from credit provision, seedling distribution, extension advice and so on) he or she would be obliged to follow the management strictures of the programme.

8.05 The initial success of SRCC was based on the production and area increases outlined in figure 19. Subsequent analysis by Ruf and Ruf[51] shows that the highest yields (approaching 1,200 kgs per hectares in some cases)

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51) Le café et les risques de l'intensification - Cas de la Côte d'Ivoire et du Togo Ruf, F et Ruf, T in Milleuille et Eloin Le risque en agriculture ORSTOM, 1989.

are obtained in the youngest (five to eight years old) plantations. Older plantations returned lower yields of under 800 kg per hectare. Ruf and Ruf observed that, during the first years of production, growers indulge in intensive management to produce maximum yields but subsequently relax their management input and produce lower yields. This pattern of behaviour is shown by Ruf and Ruf to be economically rational. The indubitable increase in yields from more intensive management has to be compared to alternative earning possibilities. The typical yield profile of a coffee tree shows strong production from years five to eight (see figure 10), during which time it responds vigorously to intensive management. However, as the tree ages, so it responds less well to intensification. Figure 20 summarises the position, illustrating the low marginal product of labour for old coffee trees. Thus, in early years the yield increase from intensive management is considered to be such as to justify the use of additional labour, but as the marginal product of labour declines, so too does the attractiveness of the intensive option[52].

Marketing

8.06 The marketing of coffee is identical to that of cocoa. The same traders handle the two crops and pass the produce on to OPAT, who have sole authority to export Togolese coffee. Prices are set by reference to the same "barème"[53] method, with the marketing margin on coffee currently set at around 100 CFA per kilo. Figure 21 shows the difference between grower and FOB prices over the last fifteen years. Again, the picture is very similar to that of cocoa, exhibiting, if anything, even higher effective rates of taxation in the 1977 and 1984-86 period. World Bank figures bear this out, indicating that in 1977, Togolese growers received just 11% of the FOB price for their coffee (see figure 24). In recent years, the collapse of world prices has resulted in the further decline of farm gate prices. Figure 22 shows that real grower prices are at their lowest for over thirty years.

8.07 The principle export markets for Togolese coffee are the Netherlands, France and Germany. Exports over the last ten years have increased from eight thousand tonnes to 14 thousand (see figure 23).

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52) The same phenomenon also explains the SRCC policy of tying improved plant and credit availability to intensive management, since without this additional incentive, the grower may choose to manage coffee extensively.
53) Literally "scale", the fixed margins which OPAT calculates for marketing costs.

Coffee vs. cocoa

8.08 On the Côte d'Ivoire, cocoa and coffee are grown in roughly the same areas. The relative profitability of cocoa in relation to coffee means that growers who increase their management (ie labour) input to cocoa would, as a result, tend to reduce their output of coffee. In Togo, where this geographic coincidence of coffee and cocoa production is not so marked, the profit advantage of cocoa over coffee does not have the same impact on coffee output.

8.09 Indeed, in Togo the picture is almost the exact reverse of that in Ivory Coast (compare figures 24 and 25). Whereas on the Côte d'Ivoire cocoa output has grown to outstrip coffee output, in Togo the converse has occurred. The main reason for this relative success of coffee over cocoa is the novelty of the robusta coffee crop. The marginal improvement of the new improved robustas over the old niaoulis was so dramatic that growers were encouraged to adopt the new varieties. Simultaneously, the SRCC was charged with the responsibility of developing the coffee sector. With the effective new varieties, plus the high prices of the late 1970s and the additional attractions of credit and other inputs, growers seem to have given a favourable response to SRCC attempts to increase coffee output. As the new varieties began to produce commercial yields around the start of the 1980s so output has increased.

8.10 Cocoa, on the other hand, suffered from being an established crop. Technical improvements offered by the SRCC showed only marginal improvements over more traditional varieties, and exhortation to replant fell on deaf ears at a time when world cocoa prices were strong. In addition, replanting techniques were felt to be inappropriate.

8.11 The argument that cocoa production improvements failed due to the low price structure are questionable, since, if anything, coffee producers seem to have been more harshly treated by the state.

Quality

8.12 Togolese coffee is considered to be of relatively good quality; it has a mild flavour which is valued by the market and grading and sorting are carried out to a high standard. Also, the young age of the majority of Togolese trees ensures that bean size is usually acceptable. SRCC is responsible for monitoring harvesting and immediate post-harvest activities. It seems that in this area, as in others, the SRCC has been able to minimise poor management practice such as strip picking which has had such a detrimental effect on Ivorian coffee production. According to the SRCC 1989 annual report, outgrades amounted to only 3% of the total harvest.

8.13 The high standard of Togolese robusta has not lead to nonchalance about further quality improvements (see section 7.16) on the part of researchers. Unfortunately, such developments are frustrated by the price system which offers no premium for good quality.

8.14 As on the Côte d'Ivoire, progressive analysts of the coffee industry in Togo believe that reform of the price system is the prerequisite for further improvement in quality. However, at the moment Togolese coffees suffer less from price distortions than do Ivorian coffees because of the relative efficiency of the SRCC in promoting good standards of harvest and post harvest management.

Research

8.15 With a relatively young (robusta) coffee industry, the emphasis of Togo coffee research is still on the development of high yielding varieties and complementary agronomic practices (fertilisation, water conservation, etc.). Given the strong links between research and extension, enshrined in the design of the SRCC, much effort is also allocated to "management" of coffee, particularly the question of frequency of management tasks.

8.16 Nonetheless, in the three year plan from 1989-91, the Togolese Scientific Ministry has sanctioned a research programme looking at Togolese coffee quality. This programme is essentially concerned with evaluating "wet processing" technology for Togolese robusta[54]. A mechanical plant has already been set up in Kpalimé. The first year's output has been sent to Montpelier for organoleptic tests and to various exporters for assessment of the price (premiums) payable. Results are not yet available.

8.17 Some problems have been encountered with the washing programme, particularly in connection with access to water and disposal of the exceptionally high BOD[55] coffee pulp effluent. Currently IRCC is trying to let the effluent evaporate away, but this is not likely to be practical for commercial scale enterprises. In some countries the increasing severity of environmental control legislation threatens to have a major impact on coffee processing.

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54) Robusta, due to its low value, is usually dry processed. The cherry is sundried for up to two weeks. A mechanical grinder is then employed to remove the dried cherry. This system has the advantage of being cheap, but the disadvantage of imparting discolouration to the green bean. The wet processing system, where the cherry pulp is removed (usually with a hand driven pulping device) and then dried, produces a cleaner green bean. It also allows a more predictable fermentation of the bean and facilitates the removal of poor quality beans at the farm gate.

55) Biological Oxygen Demand

8.18 There is a possibility that the World Bank will not agree to finance the fourth phase of the SRCC programme. If that happens, there is likely to be a shortage of research funds over the next five years.

Figure 1.

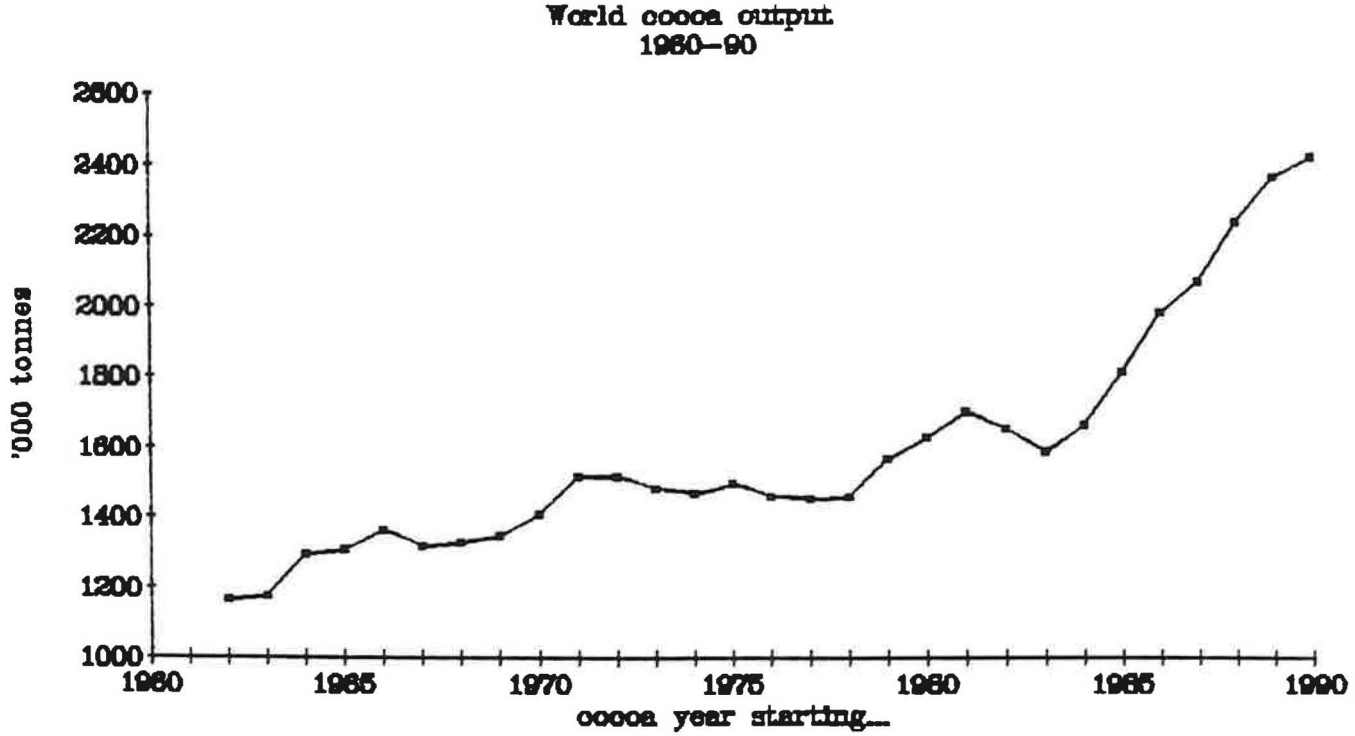


Figure 2.

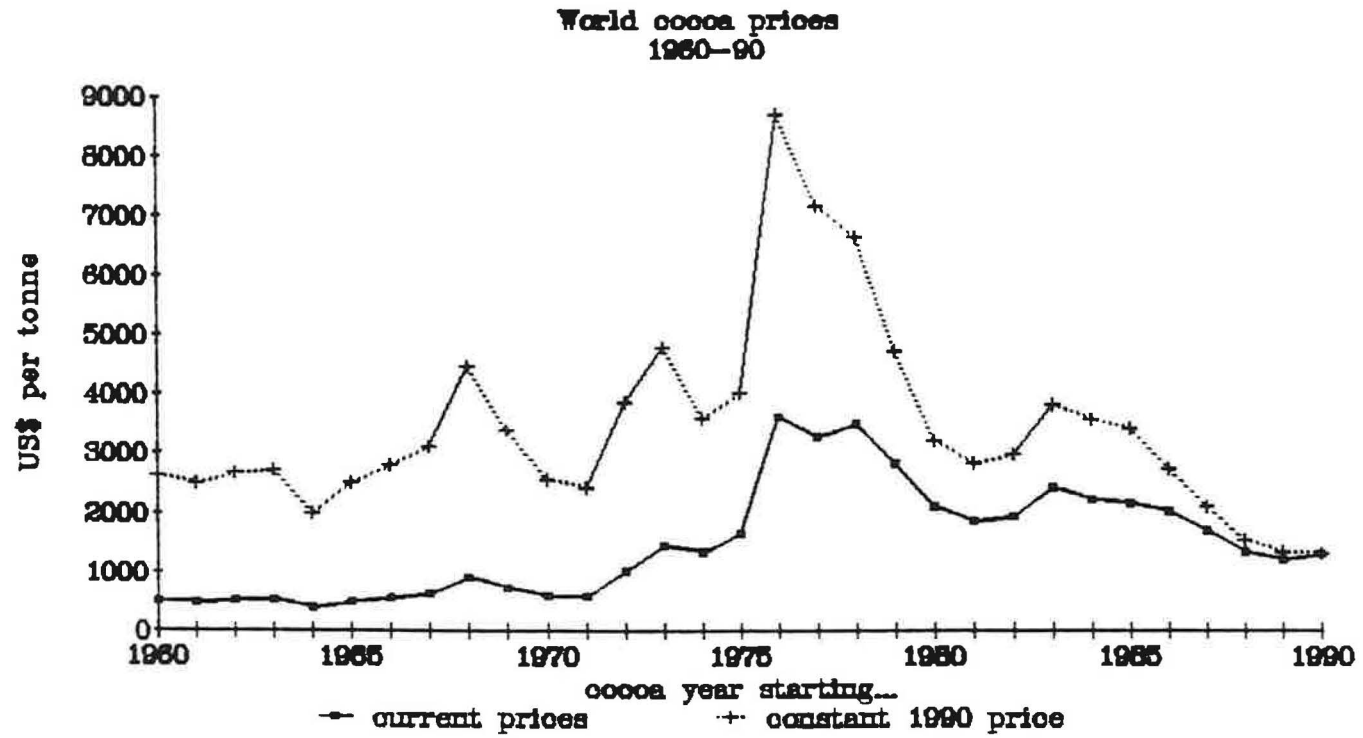


Figure 3.

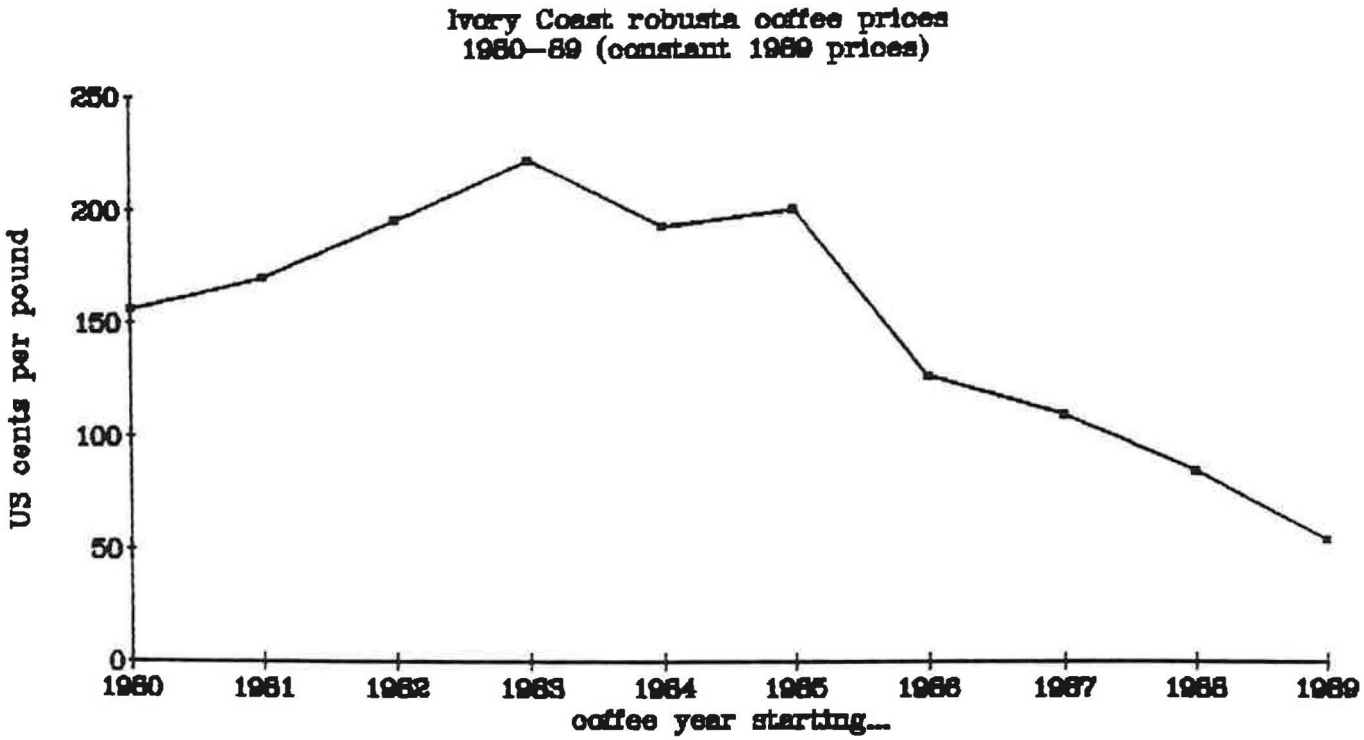


Figure 4.

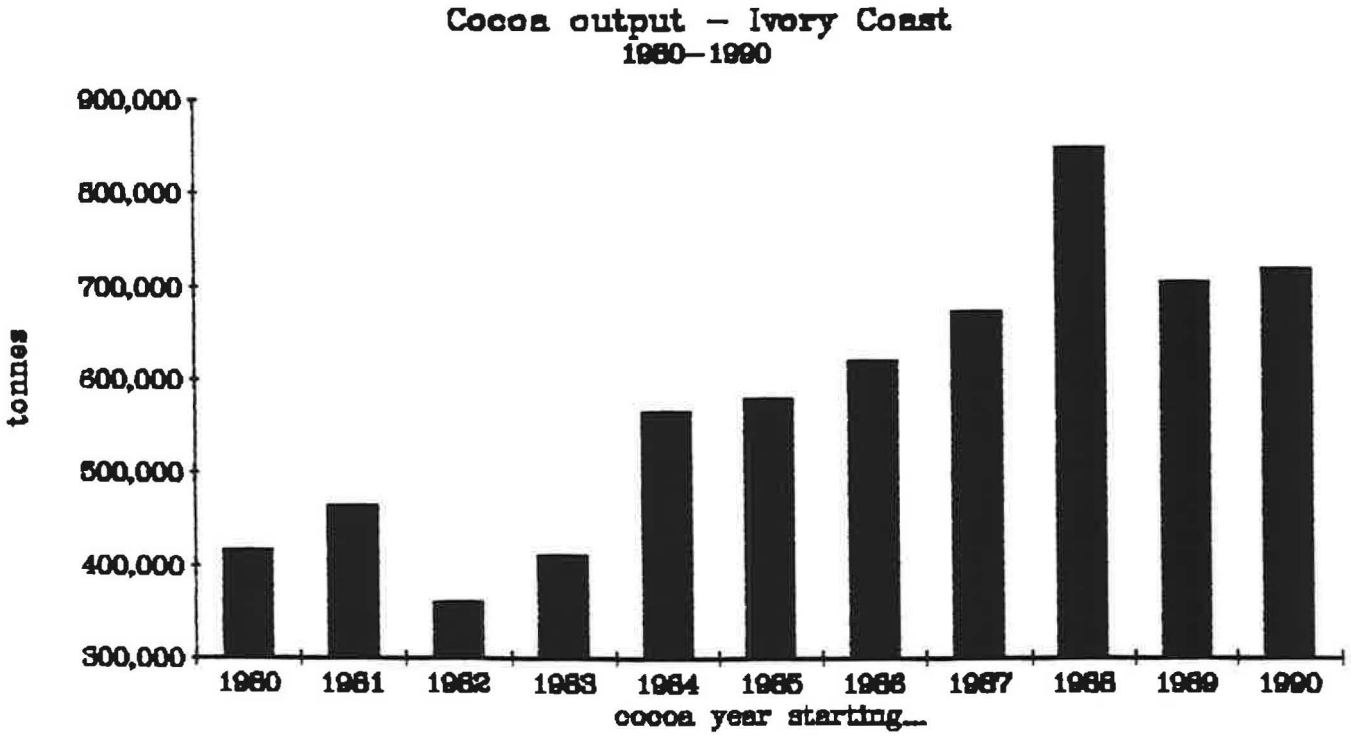


Figure 5.

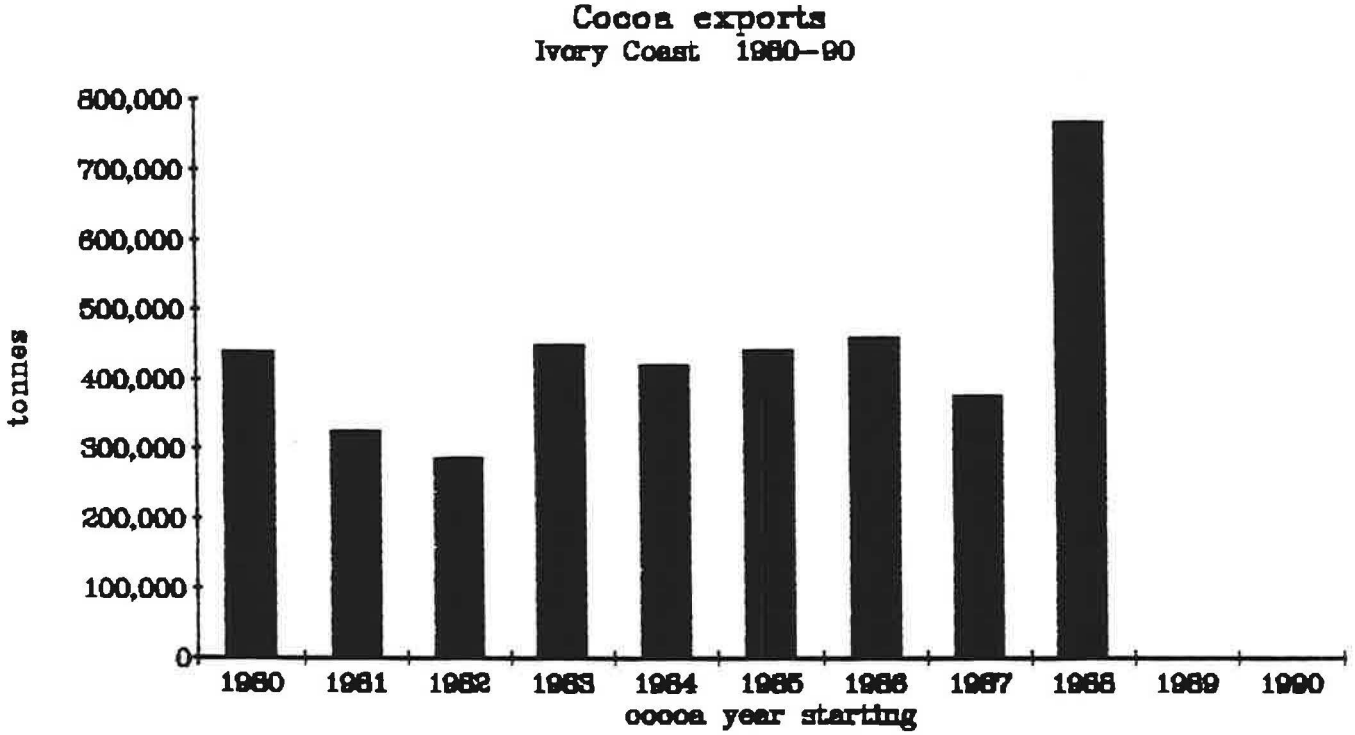


Figure 6.

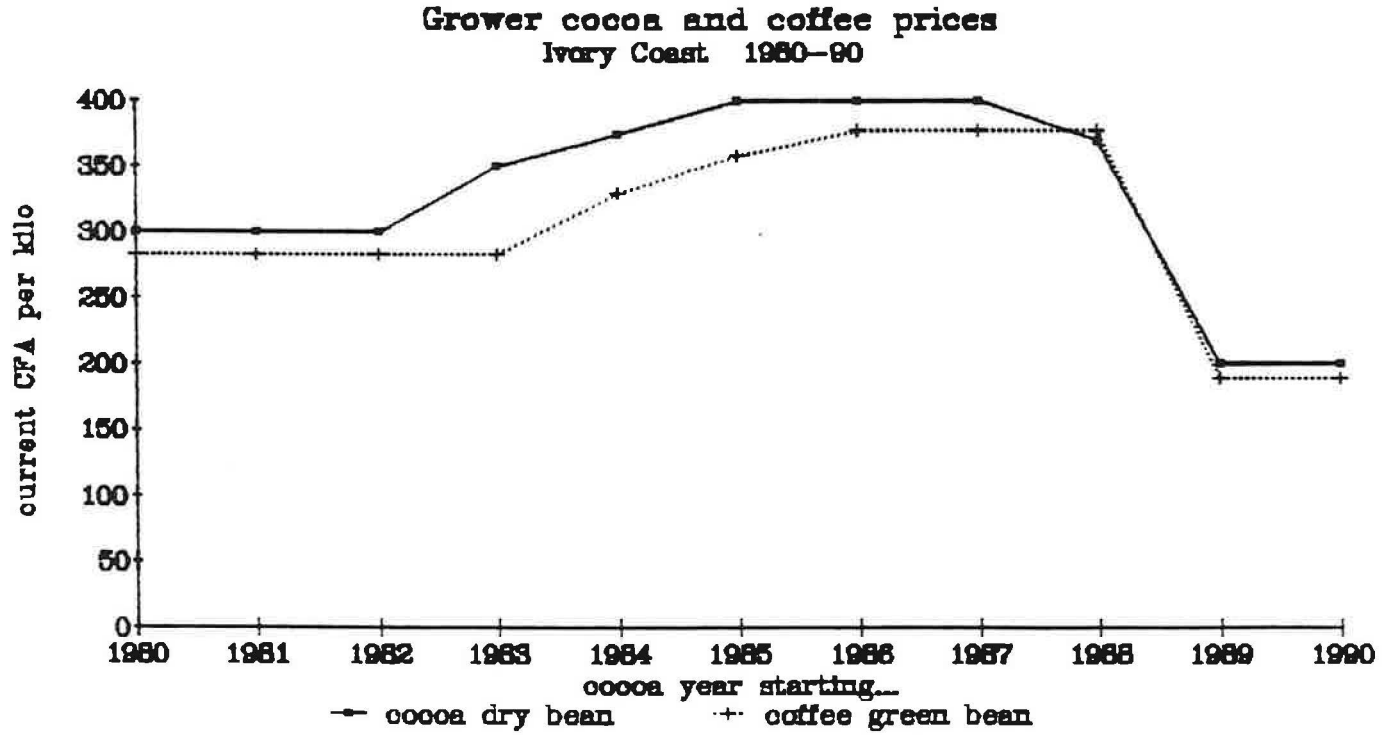


Figure 7.

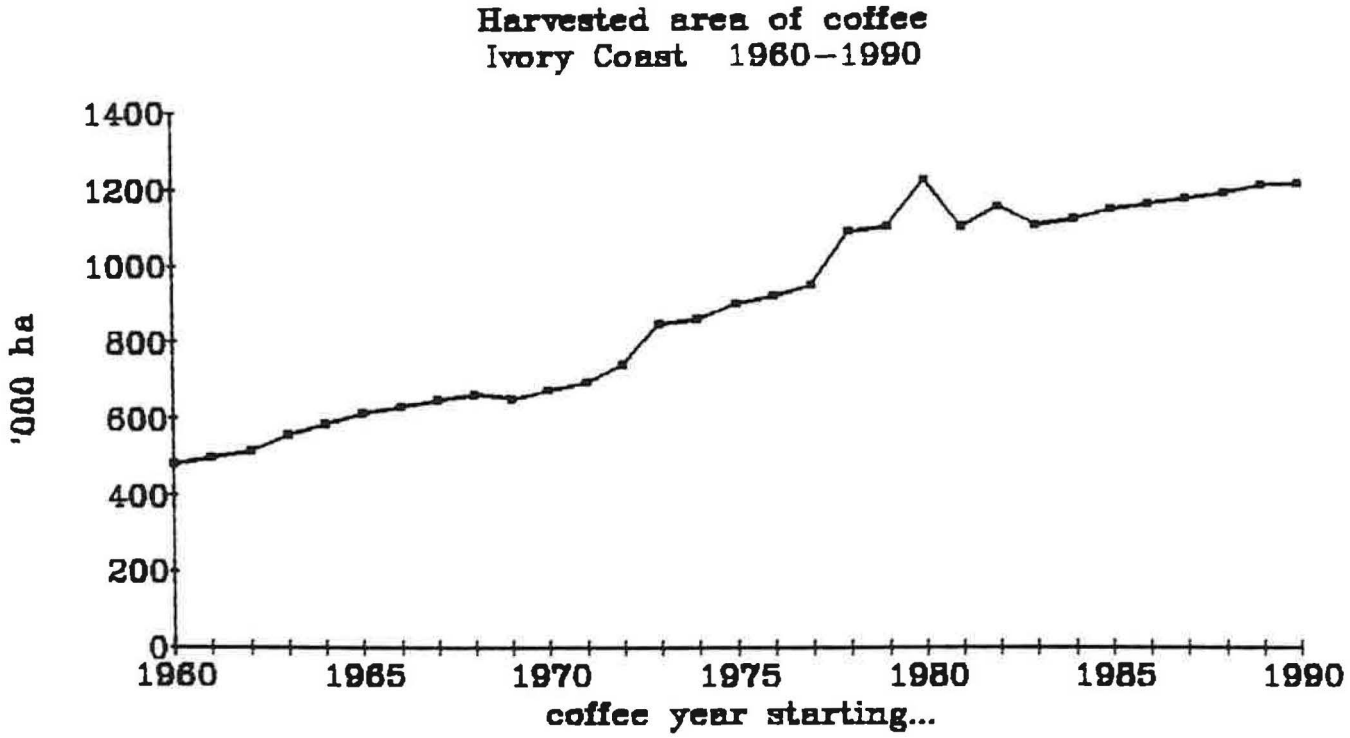
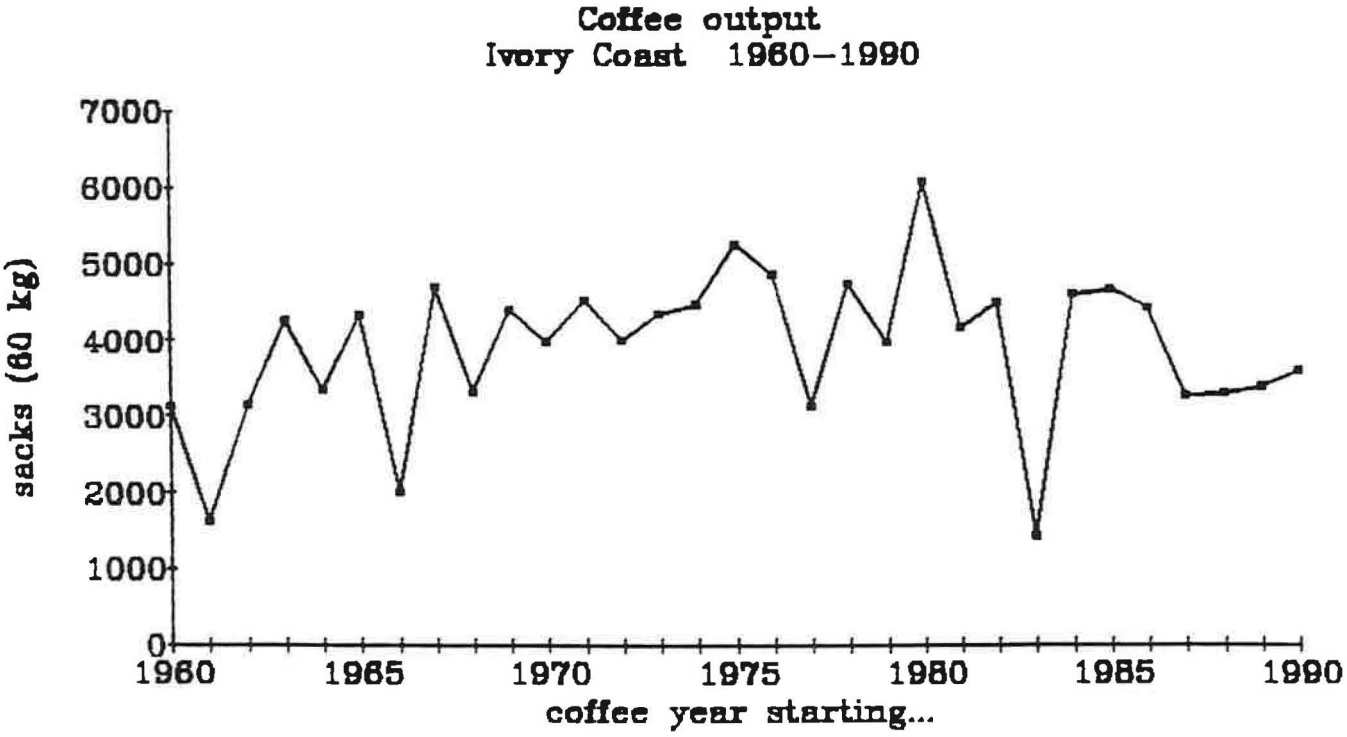


Figure 8.



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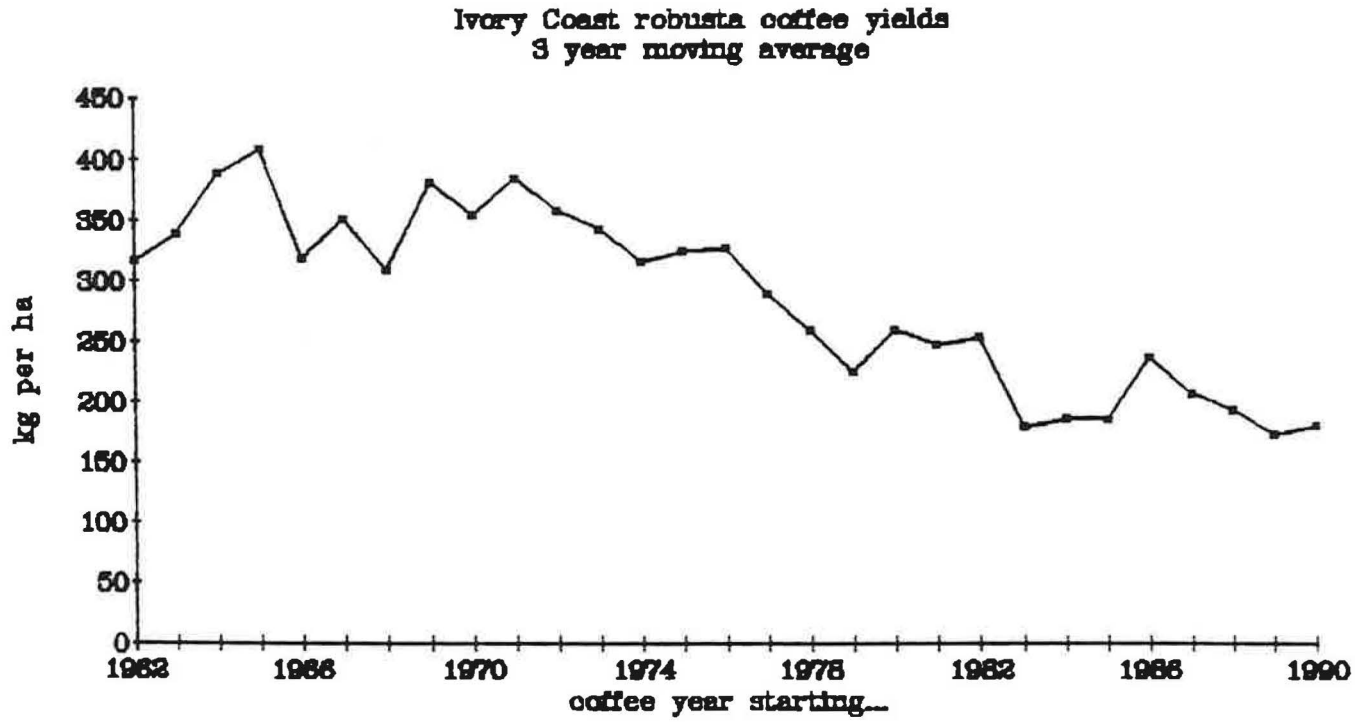

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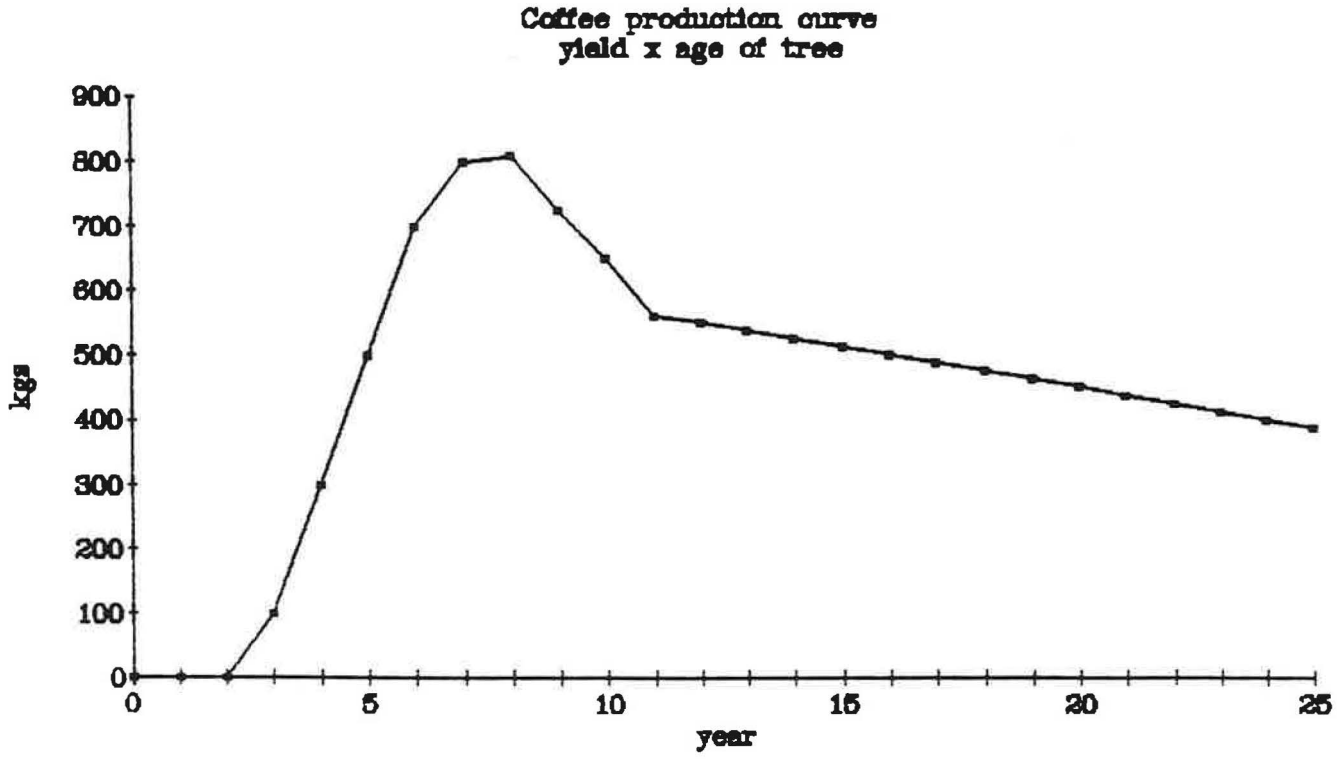

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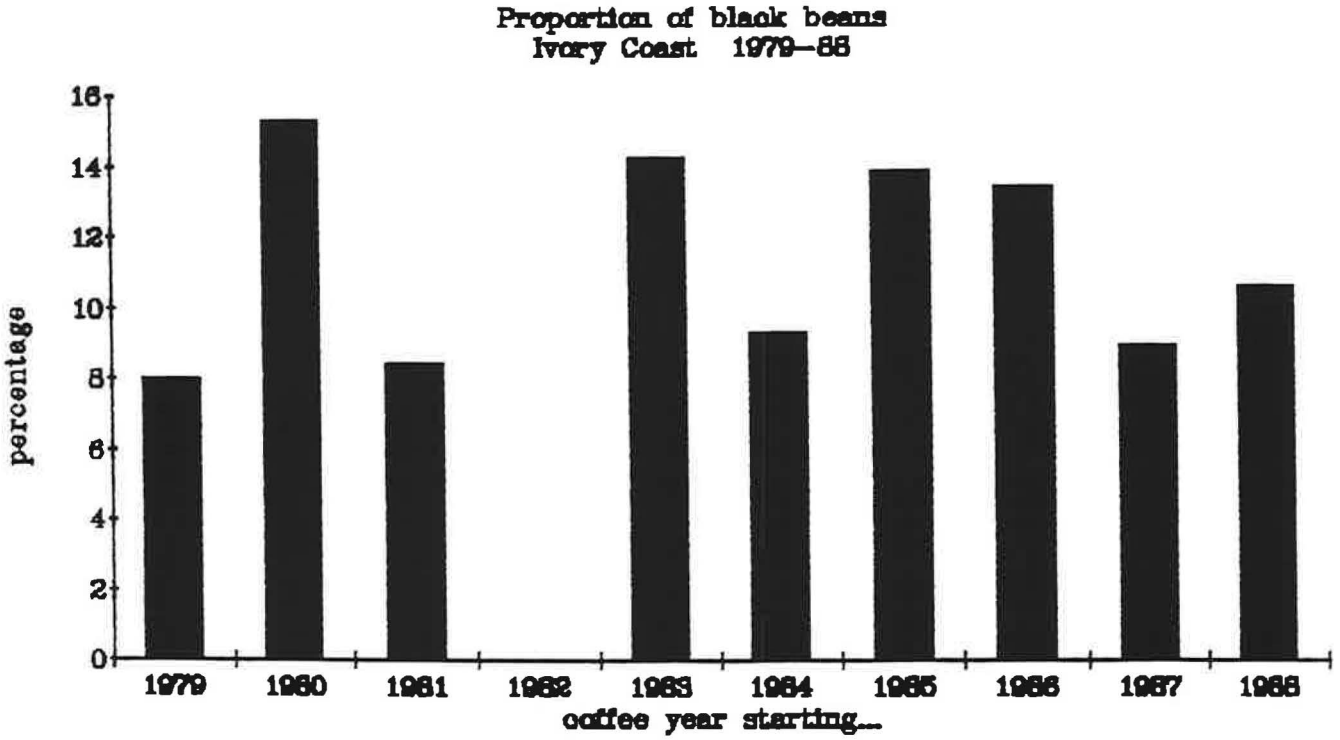

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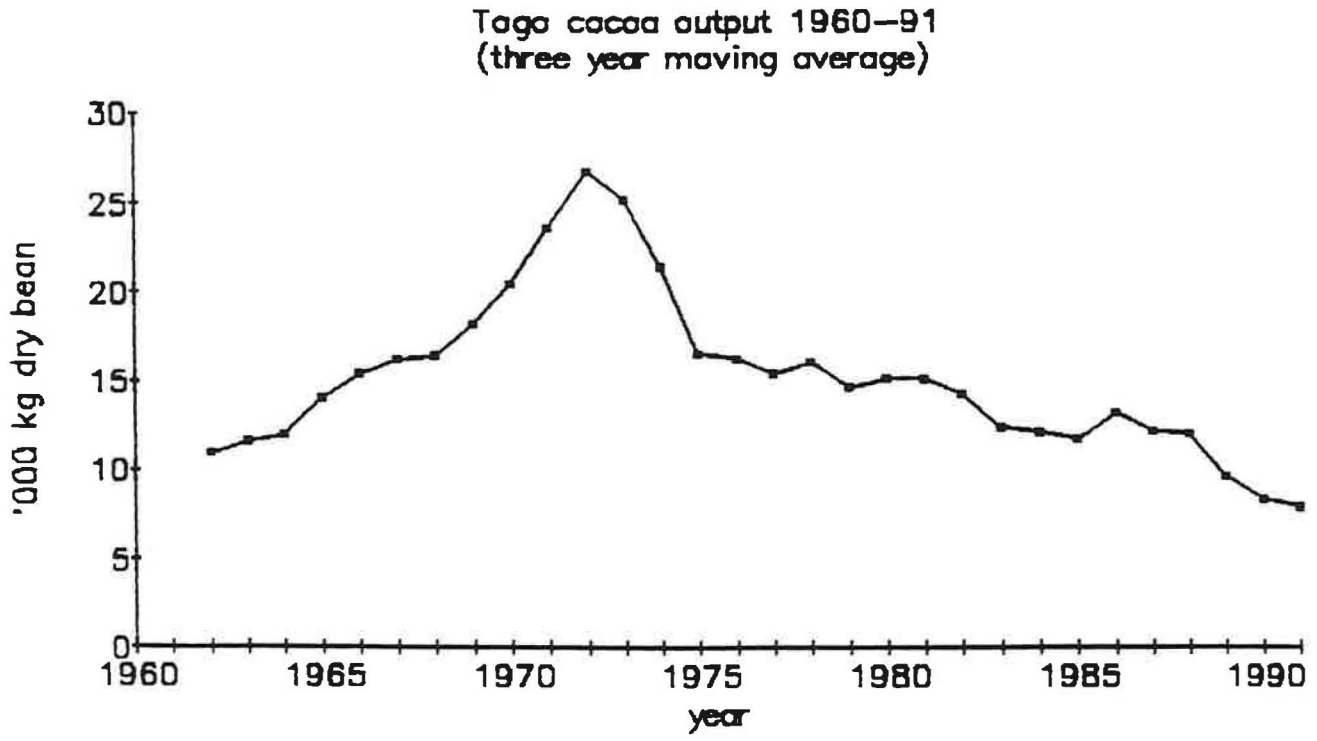

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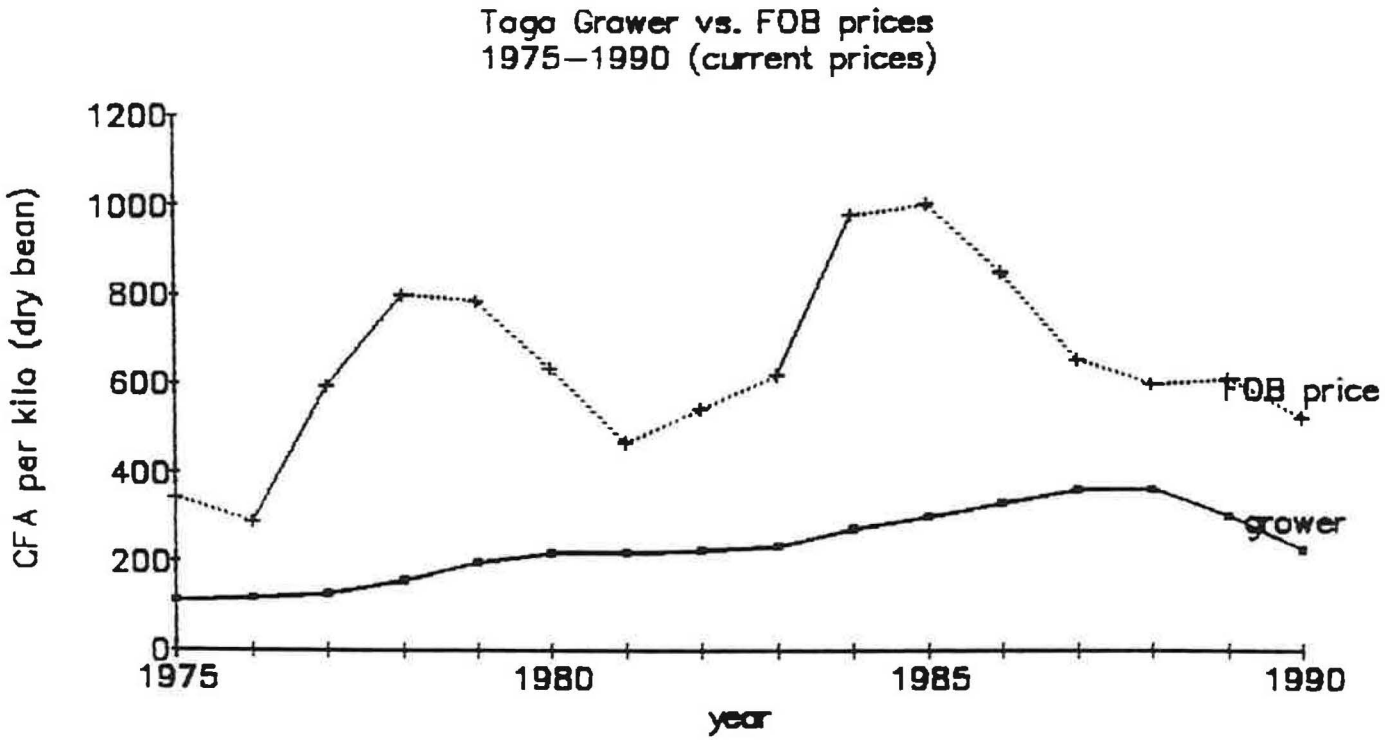

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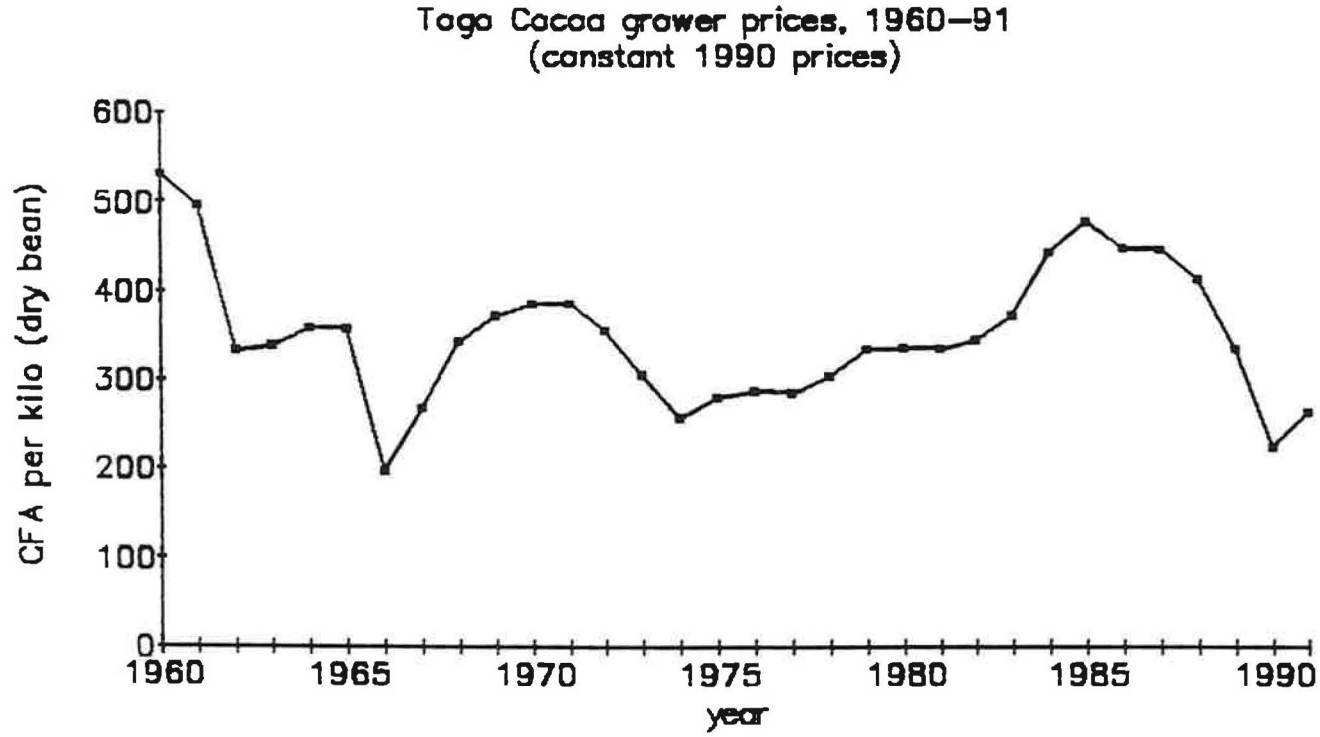

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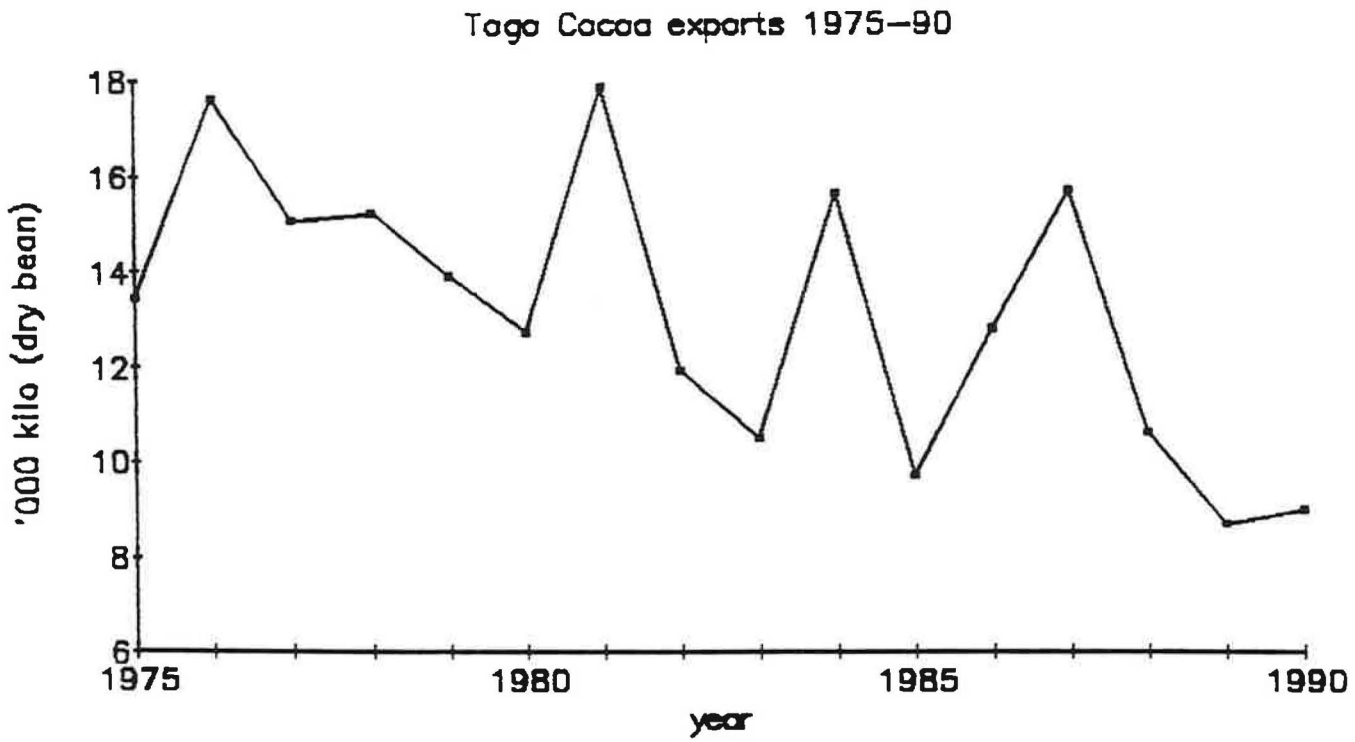

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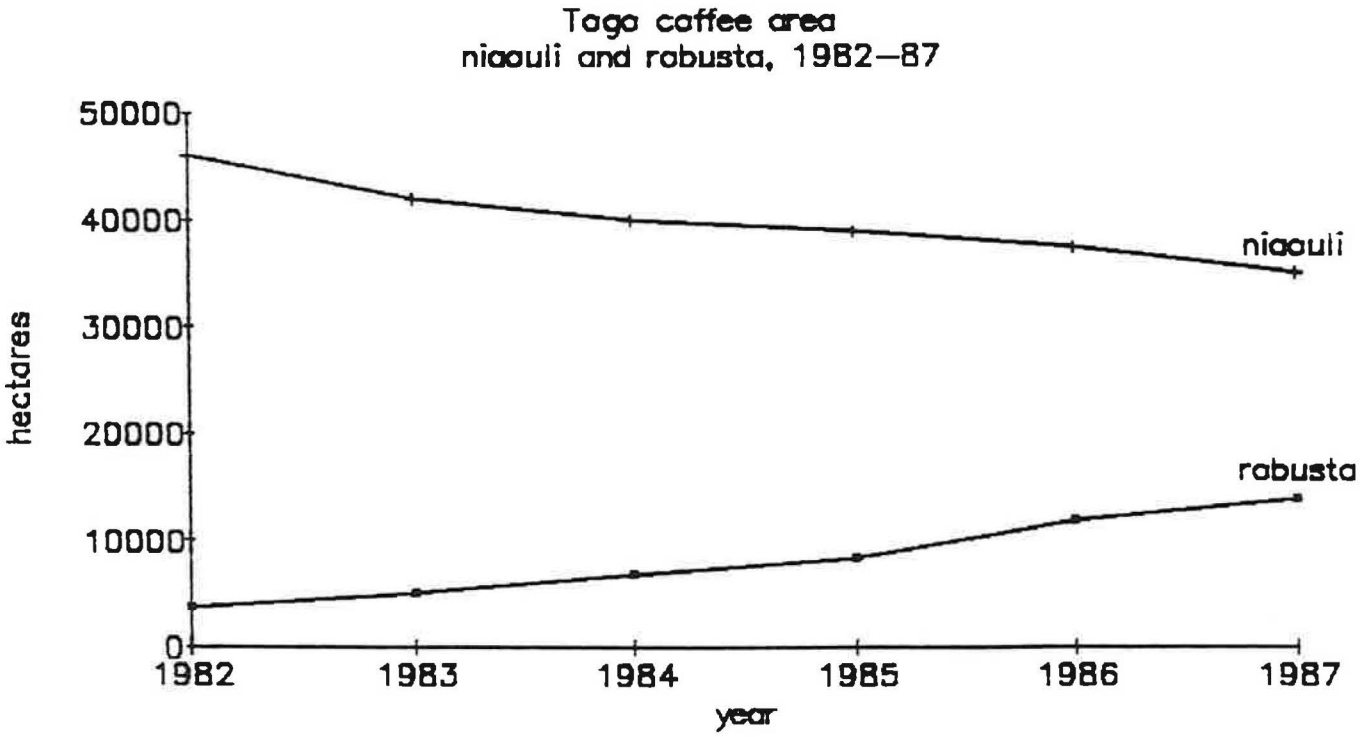

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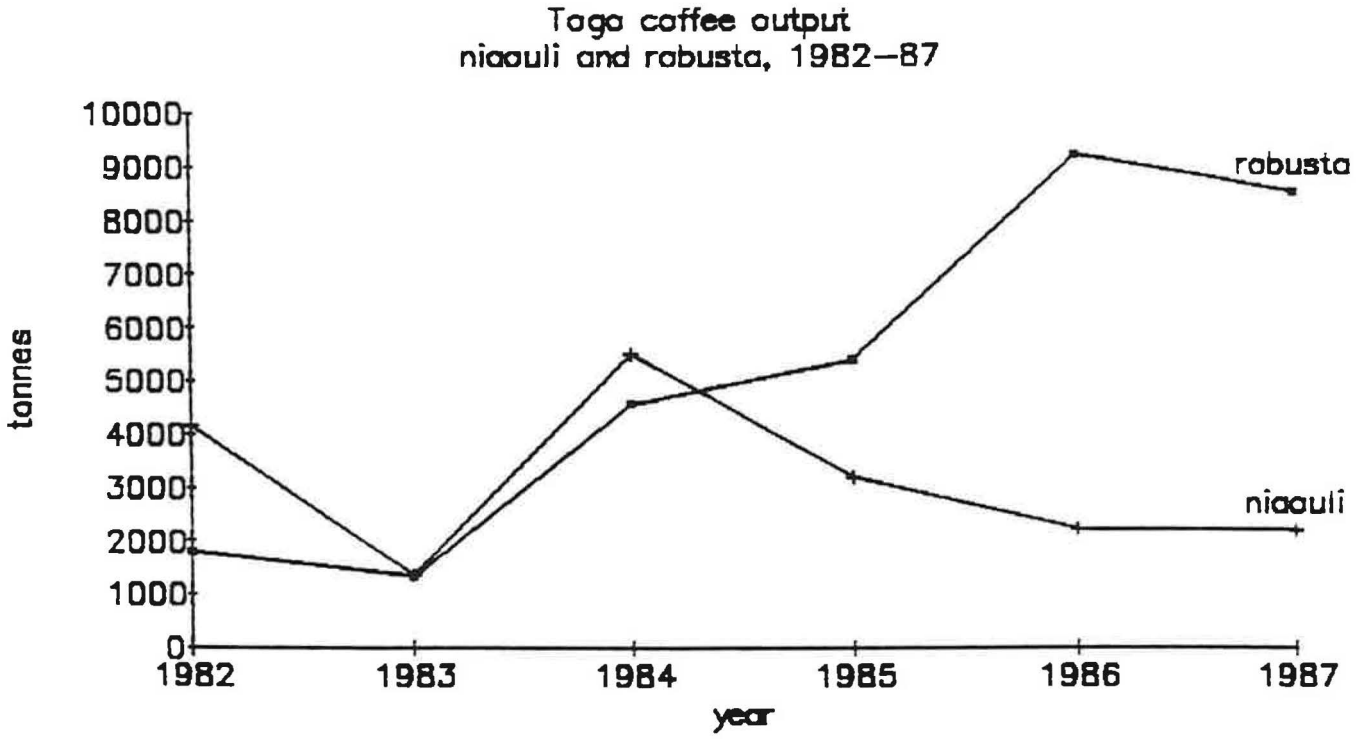

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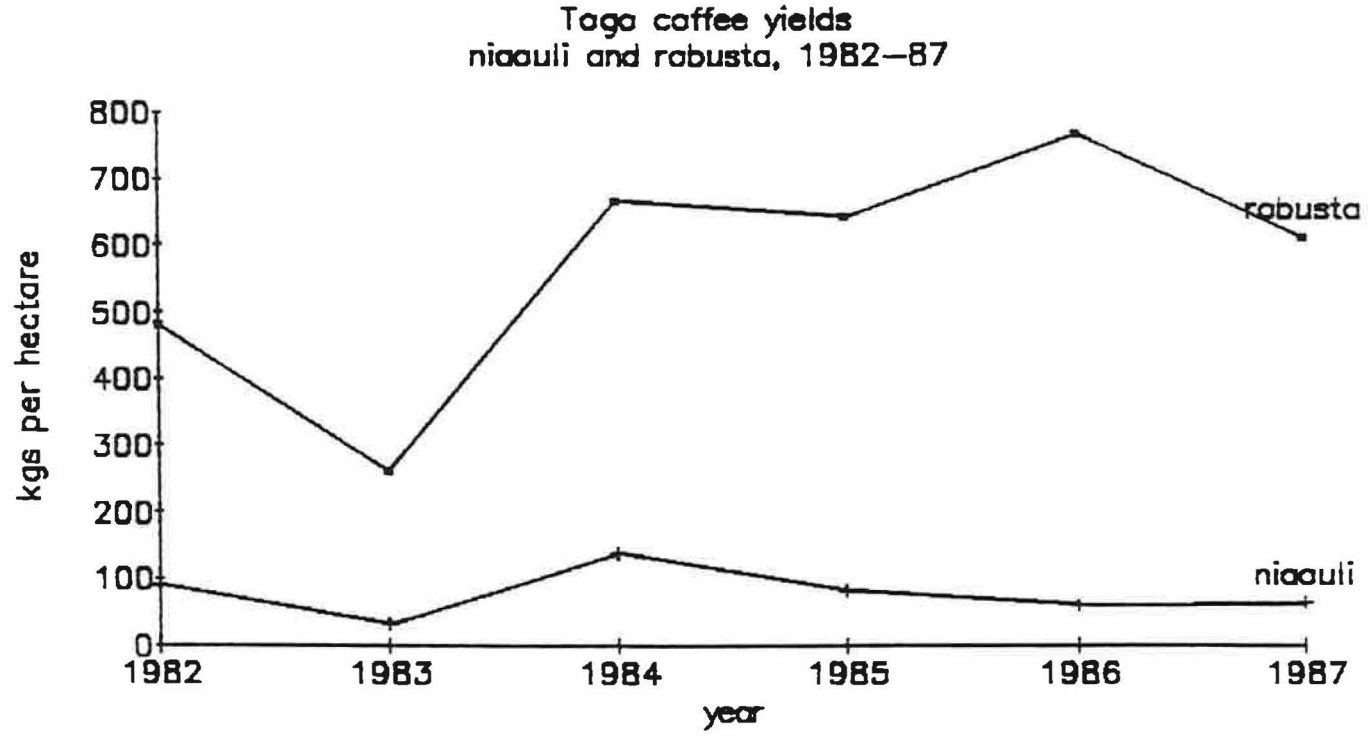

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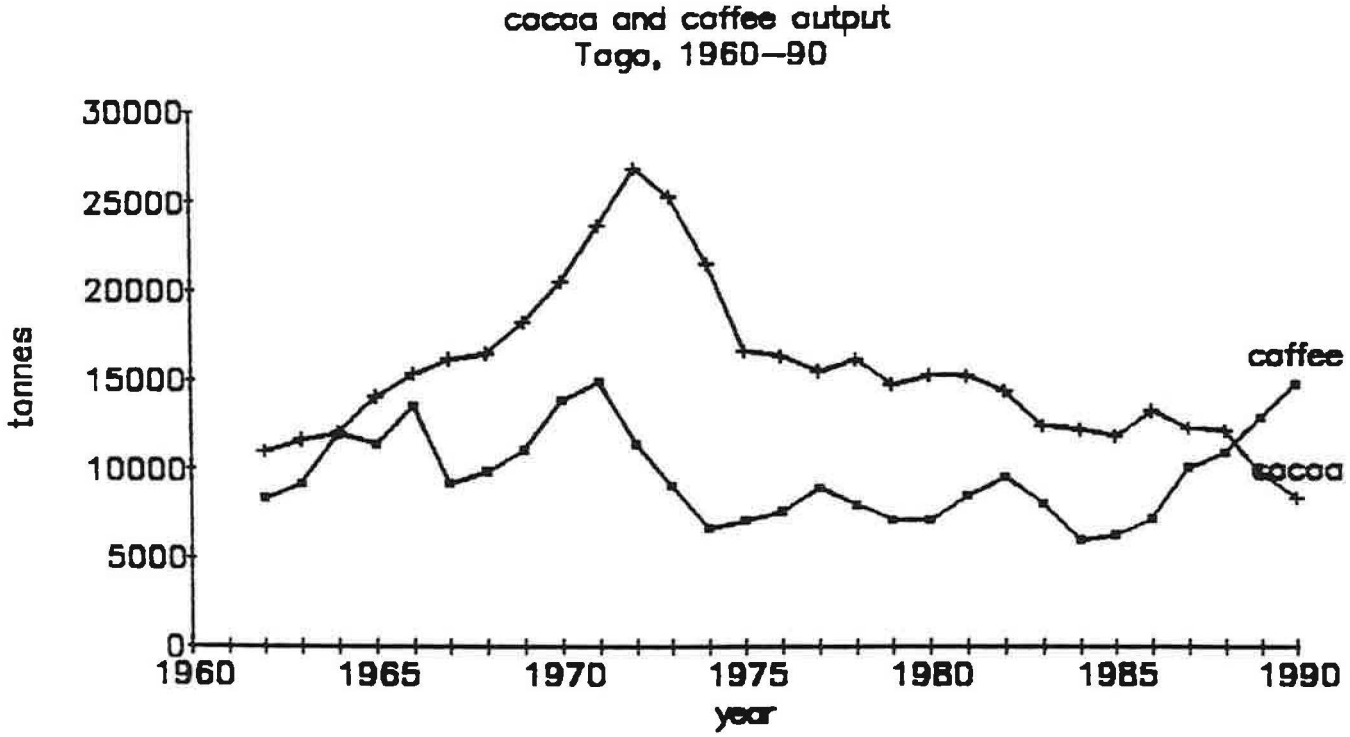

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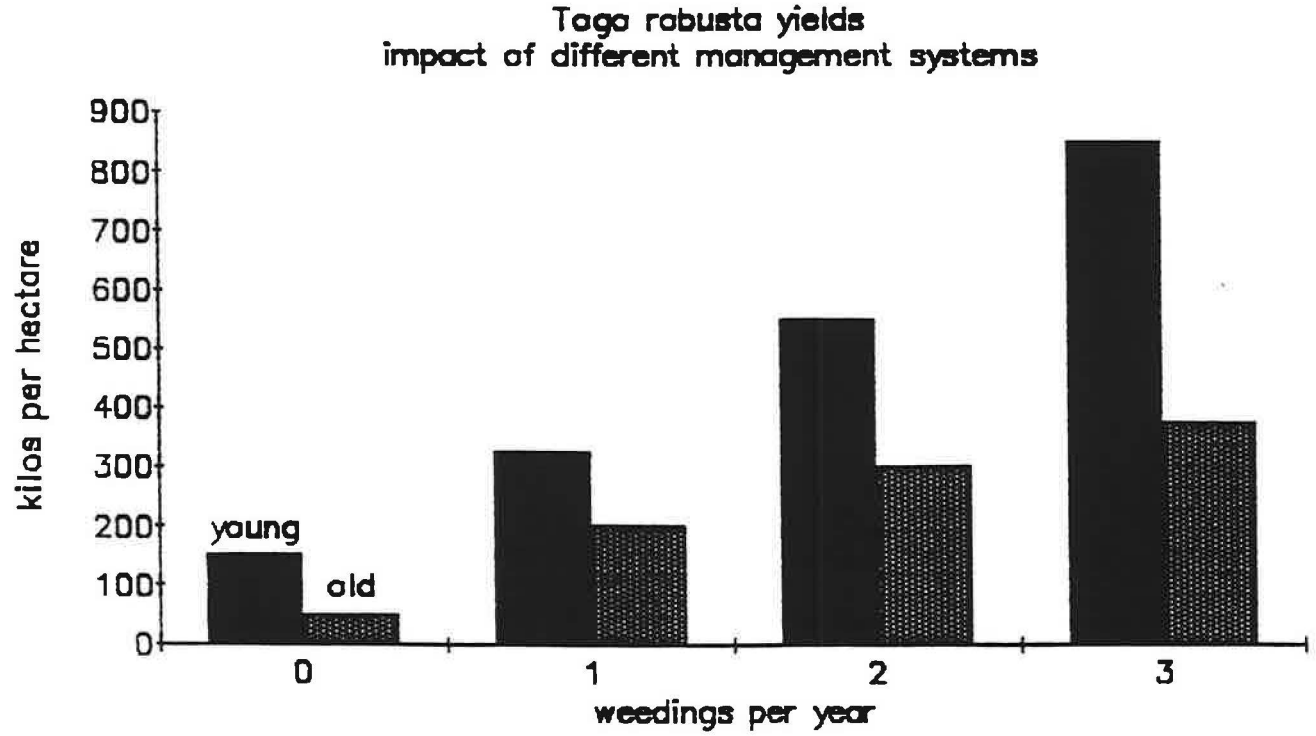

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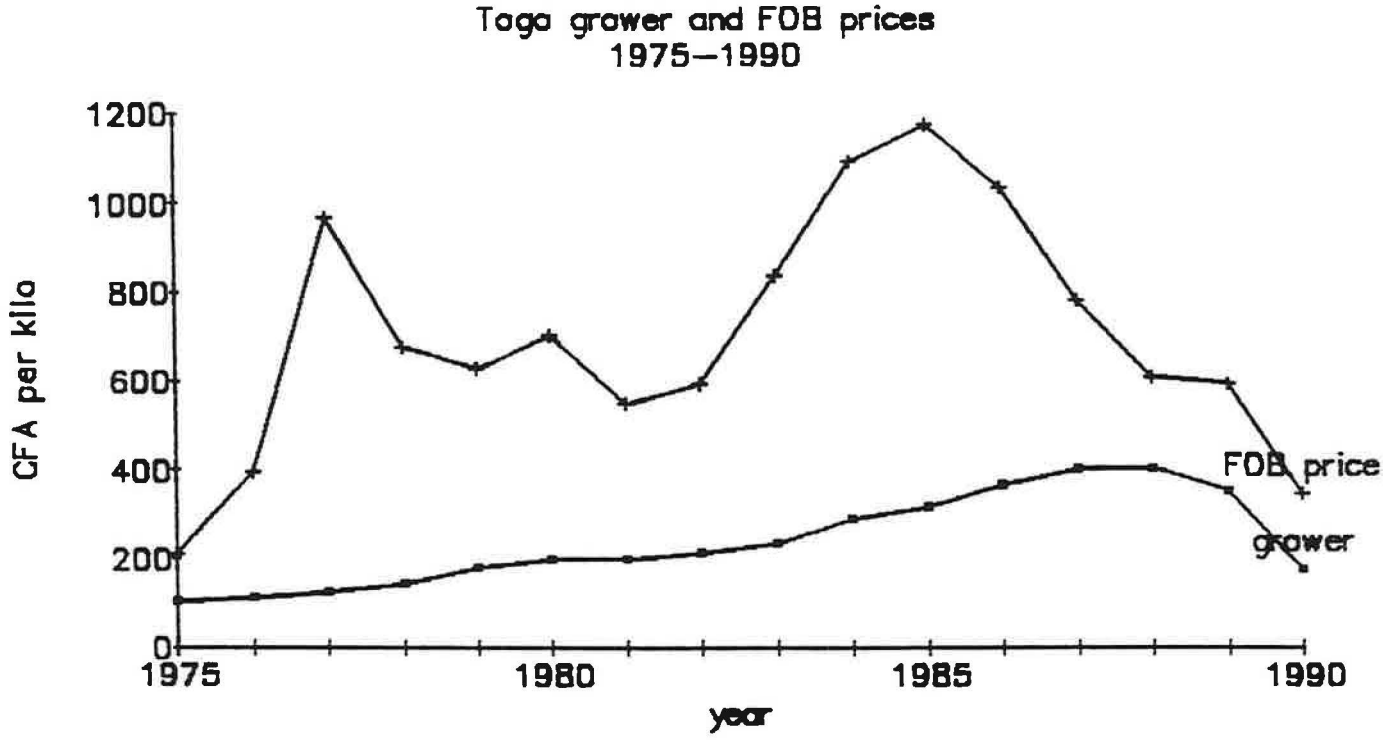

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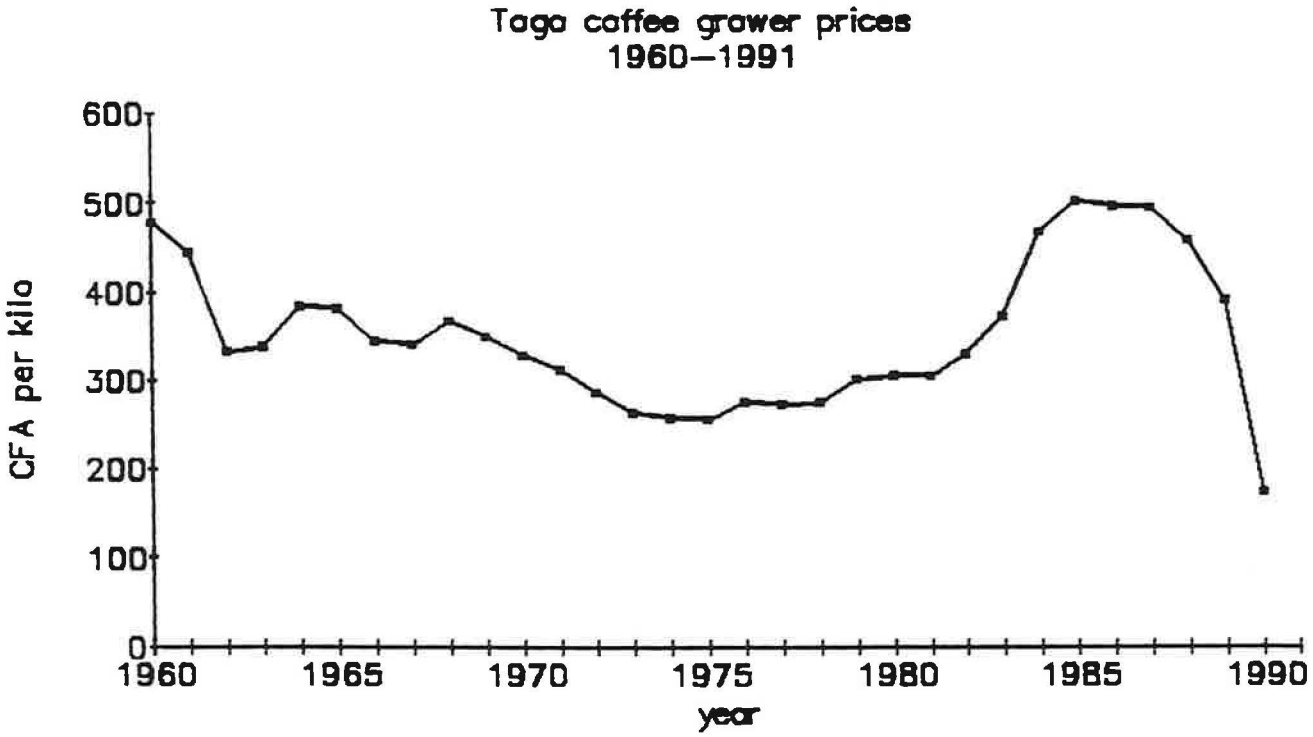

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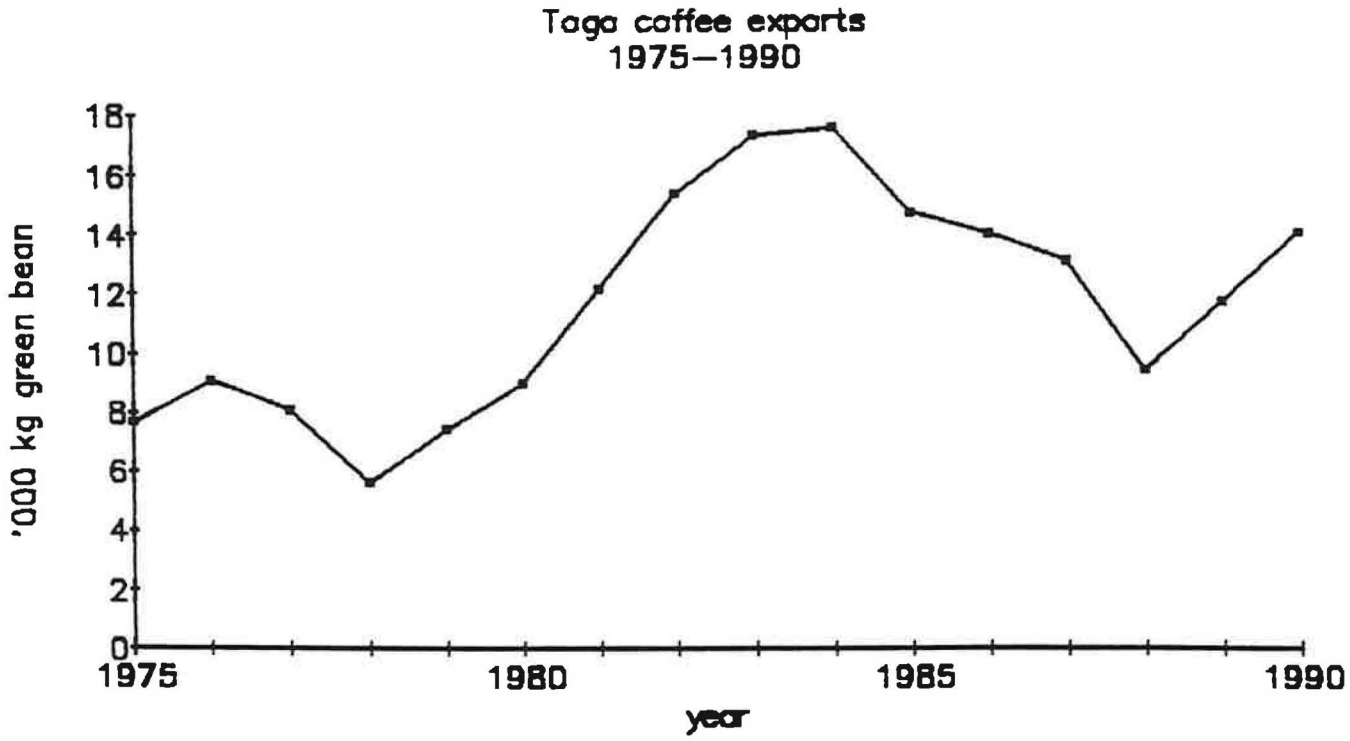

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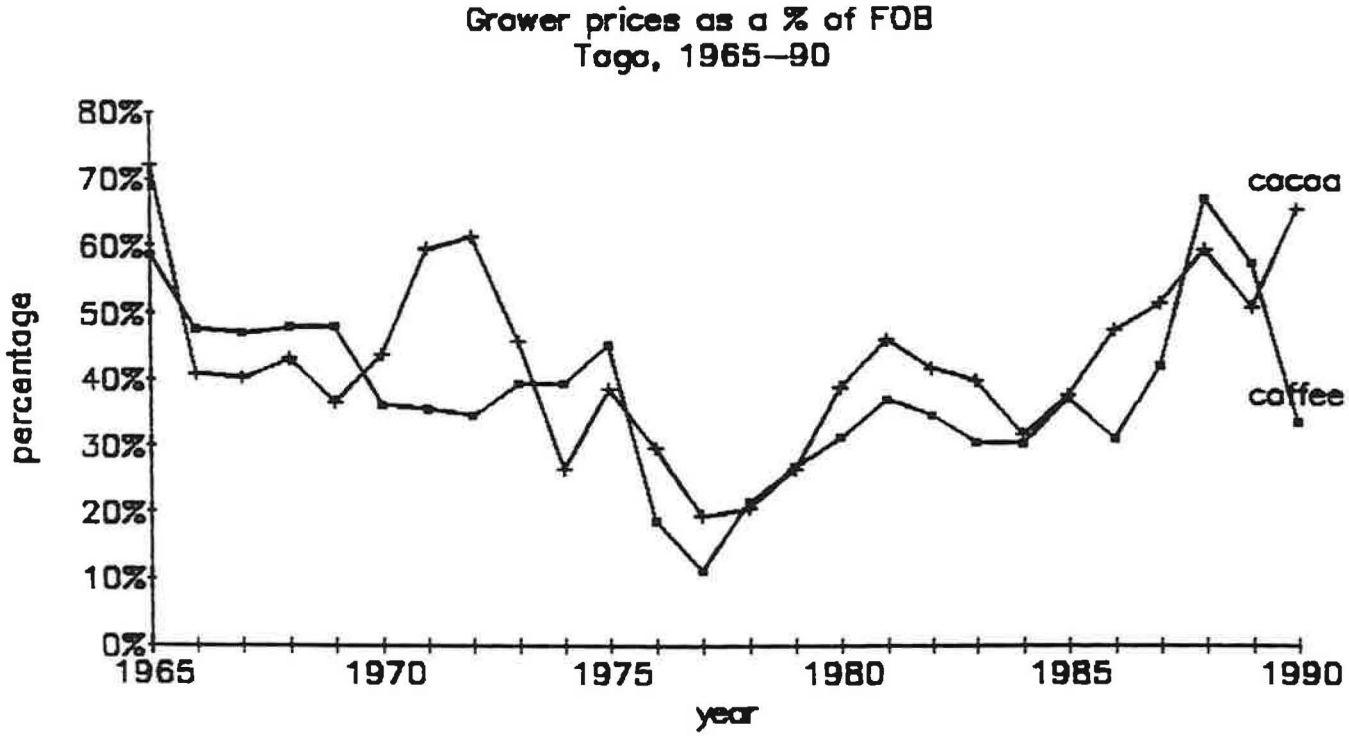

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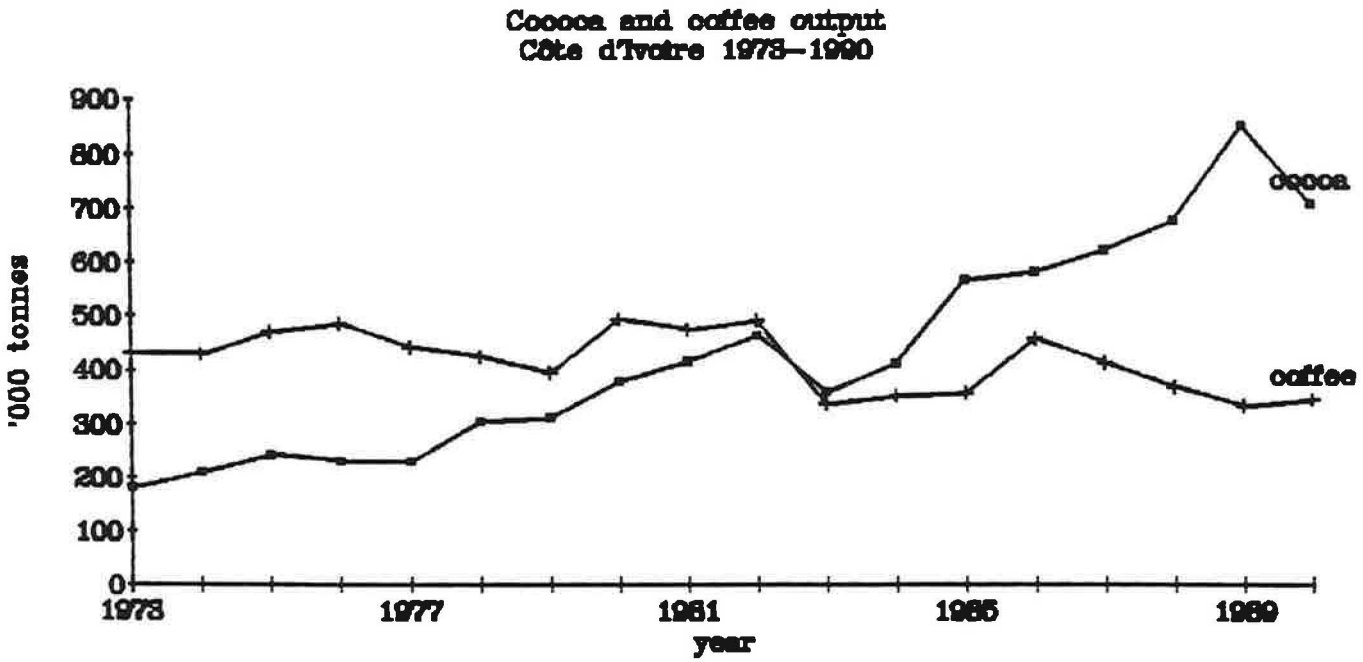

Figure 26. Ivory Coast

returns from coffee and cocoa, 1990/91

		grower price (CFA/kg)	average yield (kg/ha)	returns/ hectare (CFA '000)	returns/ man-day (CFA)
COCOA	improved	200	676	135	1,652
	traditional	200	366	73	1,560
COFFEE	improved	200	468	94	1,097
	traditional	200	165	33	935

source: Based on World Bank, 1986