

PART III

KORANSANG
1970 SURVEY

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1. KORANSANG 1904-1970

Possibly the most significant change in the cocoa industry in Ghana since its early beginnings is reflected in the change in the relative importance of the areas of production. The Eastern Region, formerly the largest cocoa producer, is now superseded by both Ashanti and Brong-Ahafo. The most important feature of this decline in the Eastern Region appears to have been swollen shoot disease, which, although attacking cocoa in the other regions, has been most virulent there. Nevertheless the Eastern Region is regarded as an area containing suitable land for cocoa growing and as such, is the area in which the Ghana Government has carried out and still is carrying out extensive cocoa rehabilitation. The history of Koransang farm, first surveyed in 1936/39, revisited in 1944 and again in 1970, reflects fully those changes in the cocoa industry in this region. Koransang farm is unique in that there is now continuous crop data for the farm from 1904 to 1970. Although one single farm cannot be said to represent an industry, certain aspects of the history of every farm reflect that of the industry as a whole and it is in this light that the 1970 survey was carried out.

It is worth noting that while the first survey was carried out to provide information on a 'typical cocoa farm' as distinct from an experimental station, since then, part of the Koransang farm has itself been used as an experimental station. Thus the Koransang farm did receive attention and assistance from government bodies although it was situated within the former 'devastated area' and therefore under normal circumstances not qualifying for government intervention for the purpose of surveying, cutting out and replanting. Government intervention is probably one of the more important aspects of cocoa farming in the Eastern Region and although few farms have been used for experimental purposes many have experienced some government participation in the production process.

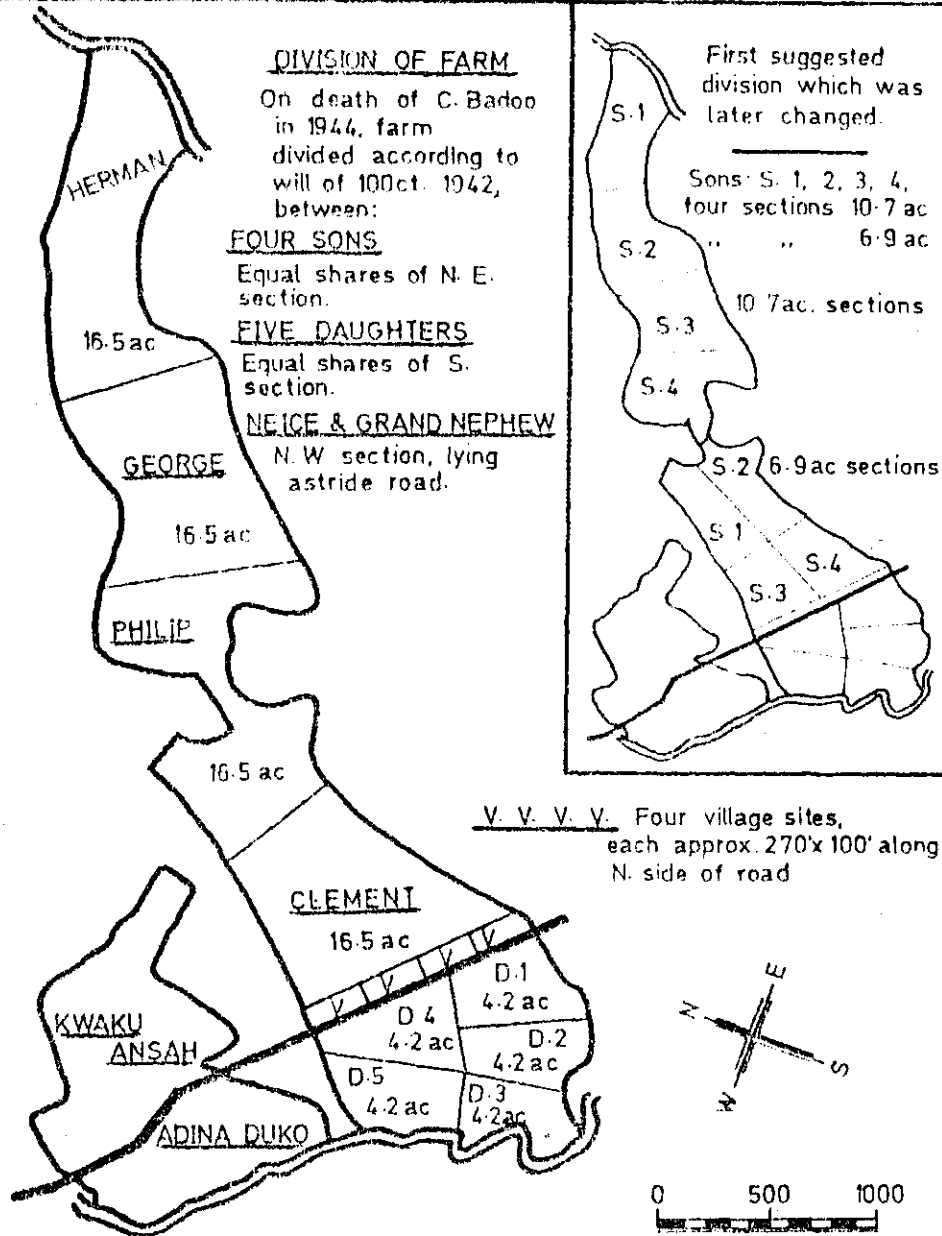
2. HISTORY

Koransang farm was purchased in 1904 and established over a period of 32 years. Before the farm was fully established, production had started to decline from a peak reached in 1928. Swollen shoot was first recorded in 1936 and an inspection in 1942 revealed that 45% of the cocoa was affected and 20% of the trees had died out. The first intervention from an outside body occurred in 1945 when the Agronomy Division of the West African Cocoa Research Institute (WACRI) acquired a twenty acre section of the farm at a rental of £6-13-4 per annum for experimental purposes, largely concerned with the eradication of swollen shoot virus. WACRI was set up as an International Research Institute in 1944 on taking over the Department of Agriculture's Central Cocoa Research Station which had been established at Tafo in 1938. It reverted to national status in 1963 when it became the Cocoa Research Institute of Ghana (CRIG) under the Ghana Academy of Sciences. In 1949, an agreement was signed between one owner and the Ministry of Agriculture to establish at Koransang a two acre Amazon seedling plot and in 1955 an agreement was signed between the owners of 88.6 acres of the farm and the Ministry of Agriculture to remove all Amelonado cocoa and plant Amazon. Thus Koransang was established as one of the Gentleman Agreement Plots which were to be used as demonstrations of improved planting material and establishment techniques. Koransang became one of the visiting centres used in the training of newly appointed Agricultural Survey Officers and other senior officers attending refresher courses at Bunsu Training School. Bunsu, a few miles from Tafo, formerly one of the very few commercial plantations in the Gold Coast, was given by the United Africa Company Ltd., first for the use of Achimota College and later to the Department of Agriculture.

In 1944, the original farm owner, Mr. Charles W. Badoo, died and ownership of the farm was divided among the various heirs (see Plate I). Four sons, five daughters, a niece and a grandnephew received sections of the farm. The niece and grandnephew acquired that section of the farm lying to the west which Mr. Charles Badoo himself inherited from a brother, the niece acquiring a life interest only. Only the senior son, Clement, had an active interest in farming at the time of the father's death and he became farm manager for all

PLATE I

INHERITANCE OF KORANSANG LAND



W. H. B. JULY 1970

the brothers and sisters for the first ten years. In 1970 he was still managing the sections belonging to two of the brothers and by this time he was also caretaking the niece's and grandnephew's section after the death of the grand-nephew. All the sons and daughters have acquired land or farms from uncles in addition to their sections of the farm at Koransang. Like that at Koransang, these lands had originally all been acquired through purchase. All the areas inherited are larger than their own portions at Koransang, some having been developed with cocoa beans harvested from Koransang. Some sections of these lands have been developed on abusa basis by local farmers, others remain undeveloped. Koransang is therefore now a number of separate farms managed by individuals with other farming interests elsewhere. It provides a good example of the complexity of the ownership - management - marketing structure in the large cocoa farm areas of Ghana. This complexity invalidates to a large extent information on the distribution of incomes, based on the records of purchases of the Cocoa Marketing Board or other central marketing organisations, which have been used in National Income Studies. Even in the areas of small cocoa farms, the registered farmer may be a part owner or simply a 'caretaker' on a cropsharing basis, or alternatively may for convenience be marketing another farmer's cocoa, delivering it with his own to the nearest official buying centre.

Only two owners of the estate at Koransang have actually worked on the farm themselves for an extensive period, the others having entered other professions. The situation is unlikely to change in the future. Charles Badoo's children have between them 42 surviving children of whom only two were active farmers at the time of the 1970 survey. Professions and occupations of the grandchildren include - the Church, Army, Police, Medicine, Merchant Navy, Teaching, Postmaster, the Government Service and Commerce. Clement Badoo has spent his whole working life in farming and the second son, Philip, has assumed the role of farmer after retiring from the Government Service. The other two sons who inherited, the Reverend George, a Minister and Herman, a Tailor, did not take any active part in farming. Charles Badoo had two other sons who died young and five daughters. Three daughters married farmers, one a non-farmer, and one died. It is interesting to note that of the eight spouses of the surviving sons and daughters, seven came from the same village, Mampong, the home of Charles Badoo and one from Akropong, a few miles away.

KORANSANG 1970

EXISTING COCOA AREAS

Acres	1936	1944	1970
Bearing	66.0	64	54 approx.
Non-bearing	22.6	-	5 "
total	88.6	64	59 "
Plantings	1904 -1936	up to 1944	1945 -1969

Of the original 88½ acres of cocoa existing in 1936, about 21½ acres had died out by 1944, and by 1953 only a few isolated patches remained.

The dates of planting are those as given by the farmer.

Non-cocoa areas in 1970.

	acres approx.
Oil palms in bush	7
Food farms	23
Forest & bush	15
Village & gaps	7
	<u>52</u>

The cocoa & non-cocoa areas shown on the plan were determined by pacing from the 1936 concrete pillars which demarked the original ago class fields, and are therefore not strictly to scale.



3. 1970 SURVEY

For the 1970 survey, the boundary of the farm was cleared to reveal concrete pillars laid for the first survey. All plots, that is areas of the farm planted in different years, were surveyed to determine the cover crop, health, age of the cocoa trees and size of the plot.

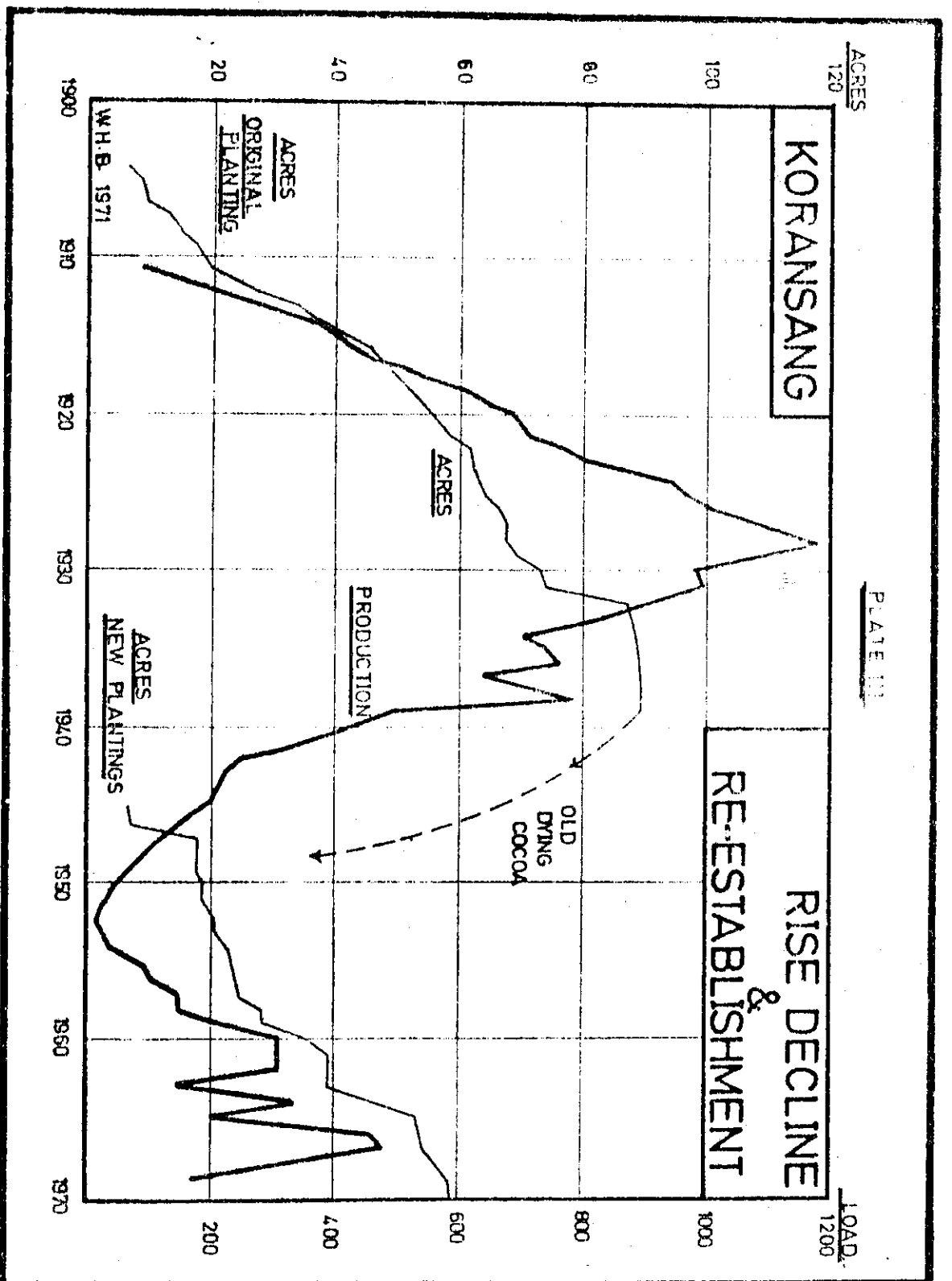
None of the cocoa planted previous to 1940 was still surviving in 1970 (see Plate II). The replanting of cocoa started in 1945 with the WACRI extension plot and the last cocoa planted to date was in 1969. Replanting began at the southern end of the holding which had originally been planted in 1916 to 1922, rather than the area established earlier to cocoa to the north which suffered first from swollen shoot. This latter area contains the present non-bearing sections. Plots planted the same year are now scattered, reflecting the different planting pattern resulting from divided ownership of the farm. However, the number of separate plots containing cocoa is almost the same, 38 in 1936, 35 in 1970 although the total acreage under cocoa is now reduced.

The present cocoa plots are also interrupted with non-cocoa areas reflecting again the less continuous planting pattern. Almost twenty-three acres of the farm are planted with **foodorops**. The most heavily cropped food area is that section of the farm lying to the west. The oil palm areas were established by WACRI on part of their experimental plot and not by the owners themselves.

4. COCOA PRODUCTION

The production figures for the years 1910 to 1944 were taken from the first survey, for the years 1944 to 1955 from the records of the farm manager and from 1955 to 1970 both from farm records and those of a cocoa buying agency at Mangoase. (See Table 1 and Plate III). There appear to be some discrepancies in the figures for the last ten years as no obvious reason could be found for the large fluctuations in production in these years. Some pods were used for replanting especially after the establishment of the two-acre plot of Amazon under the Gentleman's Agreement, and pods from this plot were used both at Koransang and on the other lands owned by the family. One of the owners complained of theft of crop by labourers and noted that this was one of the causes of apparent large fluctuations in production. It is worth noting that the two owners who were taking an active interest in the farm at the time of the 1970 survey are now aged and the supervision of work done on the farm is therefore minimal. The owners are therefore dependent to a large extent on the returns given to them by the labourers. In 1968/69 pilfering of cocoa was reported to the cocoa buying agency and to the headman of a small village where labourers and several Lagosian traders were staying. One labourer bolted. It was suspected that the traders provided the link which enabled a labourer to sell stolen cocoa, which in one year may have reached half of the crop on one section of the farm. With the Amazon type cocoa some of the theft may not have been by labourers but by farmers, for planting purposes.

Although the last plot planted during initial establishment was in 1936, production from the farm continued to decline from 1928 until the 1953/54 crop year. The rise and decline of production up until 1943 is discussed in Part I of this report. Swollen shoot is the dominant feature in the decline at least from 1940. The rise in production in the 1950's corresponds with the replanting of plots which occurred continuously from 1945. By the mid fifties, 20.6 acres might have been bearing pods, none of the trees however might have been considered mature (that is fifteen years of age and more). It appears as though by this date none of the original cocoa was surviving. The swollen shoot survey in 1942 revealed that 20% of the trees had died and 45% of the cocoa was affected. The resurvey in 1944 (Part II of this report) revealed that 74% of the trees in



the old field had died out as a result of the disease, 43% in the medium aged fields. Reports from WACRI, concerning their twenty acre experimental plot indicated that at take over, 39% of the mature surviving trees showed disease symptoms. ¹By 1950/51, only 206 of the old trees were still surviving on this plot. In 1970 only five of the total of fifty-nine acres were not bearing pods. Most of the cocoa planted since 1950 is of the Amazon variety and some of the latest plantings are of the hybrid type. Although a record had been kept of the total number of loads sold and the amounts credited to the separate owners, no records existed of the yields of any of the individual plots planted from 1945 onwards.

¹Information extracted from WACRI Annual Reports, 1945/6 - 1955/56.

Table 1. THE RISE, DECLINE AND RE-ESTABLISHMENT OF COCOA

YEAR	TOTAL ACRES UNDER COCOA	LOADS OF 60 LBS	YEAR	TOTAL ACRES UNDER COCOA	LOADS OF 60 LBS
1904	5.6	1	1937	88.7	622
1905	7.9	1	1938	88.7	788
1906	9.2	1	1939	88.7	485
1907	12.7	1	1940		432
1908	15.0	1	1941	(cocoa	530
1909	17.5	1	1942	dying	234
1910	19.1	50	1943	out)	208
1911	21.5	80	1944		200
1912	27.5	196	1945	6.7 ^a	171
1913	34.4	279	1946	7.1	148
1914	37.4	340	1947	17.1	107
1915	42.2	410	1948	17.1	98
1916	46.3	486	1949	17.1	73
1917	48.6	516	1950	19.0	47
1918	51.2	595	1951	19.0	32
1919	53.3	634	1952	20.6	20
1920	55.2	679	1953	20.6	26
1921	57.9	700	1954	23.5	42
1922	60.9	756	1955	24.6	98
1923	62.1	821	1956	24.9	116
1924	62.9	904	1957	24.9	150
1925	64.4	957	1958	28.3	148
1926	66.2	1,004	1959	28.3	189
1927	67.2	1,095	1960	36.3	304
1928	67.2	1,187	1961	39.2	309
1929	68.6	1,084	1962	39.2	307
1930	72.7	976	1963	39.2	137
1931	73.7	989	1964	54.2	336
1932	87.0	906	1965	54.2	198
1933	87.2	838	1966	54.7	448
1934	87.6	679	1967	56.3	469
1935	88.1	739	1968	58.2	318
1936	88.7	752	1969	58.6	168

^aNew plantings of cocoa from 1945 onwards.

5. BIOLOGICAL YIELD CURVE

In the absence of records of when the different age fields came into bearing, some inferences may be drawn from the long term data (see Table 2). The 50 loads of cocoa sold in 1910, when the oldest cocoa was six years old and the total area of the four, five and six year old fields was 9.2 acres, represents an average yield of 330 lbs. dry weight per acre. The yield per acre rose steadily and reached 1068 lbs. in 1914 when the oldest cocoa was ten years old and the weighted average of the fields four years old and over was 7.6 years. This is a high yield and it may be inferred that cocoa was well into bearing at six years old. In the customary method the seedlings would be planted out after clearing the forest, along with food crops, some of which would act as a nurse crop for the cocoa seedlings. After two or three years of harvesting the food crops, the farm would be allowed to revert to bush, only to be cleared again when the cocoa was coming into bearing.

Table 2. BIOLOGICAL YIELDS, 1910-1928

YEAR	ACREAGE 4 YEARS & OVER	AGE RANGE	WEIGHTED MEAN AGE	LOADS OF 60 LBS.	YIELD LBS. PER ACRE
1910	9.2	4- 6	5.4	50	330
1911	12.7	4- 7	5.8	80	370
1912	15.0	4- 8	6.4	196	784
1913	17.5	4- 9	6.8	279	923
1914	19.1	4-10	7.6	340	1068
....			...		
1927	62.1	4-23	14.0	1095	1058
1928	62.9	4-24	14.9	1187	1132

In the peak production period, around 1927/28, the average yield of fields planted from 1904 to 1923/24 was about 1100 lbs. per acre, with a weighted mean age of these fields of between fourteen and fifteen years. This would therefore represent approximately the level of yields of mature cocoa in this area in the early 1920's.

The decline in total farm production, as shown in Table 1 and Plate III began in the late 1920's. An inspection of Plate III in Part I of this report will show that in 1936 the earliest planted fields were giving lower yields than the medium aged fields. For the early days of cocoa in the Eastern Province, 1905 - 1920, it may be inferred that the biological yield curve would show bearing beginning about the fifth year, with a rapid rise to maturity at ten years or so, maintaining maximum yield for five years or more, before declining to a lower, but steady level. By this time the fertility built up during the long period of forest cover would have been depleted. How long the steady level of yield could have been held, in the absence of any form of manuring, before the advent of ageing and death, it is impossible to say as swollen shoot disease effectively killed off the old and young cocoa alike.

By 1936, when the first survey was made, no field under nine years old was in bearing and yields of any field under fifteen years old were very low. Differences in the inherent soil fertility levels in different parts of the farm and the inroads of diseases and *Sahlbergella* were contributory factors, but there had clearly been a shift in the biological yield curve.

The view commonly held in the 1920's and used in reports was that cocoa came into bearing at five years and was in full bearing at ten years old. This was based mainly on the experience of the experimental stations where the cultural methods were different from the customary practice, including wider spacing and regular weeding. In 1925 in the Central Province, in the days of itinerant instruction when Agricultural Officers spent three weeks of every month on trek, holding village meetings and running cocoa farm competitions, it was clear that a bearing farm less than ten years old was the exception. This was later confirmed from the data collected in the course of making crop valuations and from Observation Plots in native farms recorded in connection with crop forecasting. Bearing at ten years with maturity at fifteen years was nearer the facts.

It is equally clear from the current new plantings, particularly of the Amazon and hybrid types and with the level of husbandry on Block Planting Schemes carried out by the Ministry of Agriculture, that pods are produced

in the second or third year and that at five years a reasonable crop is being reaped. It is interesting to note in the WACRI reports that old trees which were coppiced in 1945 produced robust chupons with their own roots and in 1947/48 these chupons were carrying flowers and cherelles. Alternatively a block of Amelonado seedling cocoa planted in 1945 was producing only 61 lbs. dry weight per acre in 1950/51.

A change in Government Policy in 1971 heralded a massive replanting programme for the devastated areas of the Eastern Region using direct labour and supervision on the lines of the Block Planting Scheme. Long term forecasts and projections must necessarily take note of these changing parameters. The overriding constraint lies in the paucity and quality of the raw data and it is doubtful whether sophisticated statistical techniques, leading to elaborate production functions, can give any more reliable information than can be provided by cheap and simple graphical methods and the value judgements of the experienced staff of the Economic and Cocoa divisions of the Ministry of Agriculture. The biological yield curves of the new plantings have yet to be established, but if present trends in the other regions continue, the effect of new plantings in the Eastern Region could result in a mild production explosion. The biological yield curve over the life cycle of the tree is an important factor in crop forecasting. Another is the set of yield components - size of beans, number per pod, number of pods per tree and trees per acre. There was no evidence of the death of cocoa due to simple ageing, and in other cocoa countries these were commercial plantations older than any to be found in the Gold Coast. It was considered at the time therefore that the mass of detailed recording made during the 1936/39 survey might in time provide information which would enable management advice to be given to farmers as to when and which trees to replace (either by coppicing or replanting) after they had ceased to pay an adequate soil rent for the space they were occupying. This approach was neutralised, unhappily, by the advent of the killer disease, swollen shoot.

6. CARE AND MAINTENANCE OF THE FARM

Although the first owner of the farm died in 1944, that section of the farm transferred to his children was managed by Clement Badoo as a single unit until 1954 when Philip Badoo, on retiring from the Government Service, took over the management of his own, central, section of the farm. Throughout, the farm manager has reported annually to the farm owners. Replanting of cocoa has been done largely by the owners, but also by WACRI and the Ministry of Agriculture. WACRI established a portion of approximately 6.7 acres of amelonado cocoa on their twenty acre experimental plot in 1945 and this with the rest of the Koransang experimental area and other sub-stations at Akwadum, Nankese, Kukua and Adonquanta were transferred to the Department of Agriculture in 1956/57. The plot was finally handed back to the owner in 1961. Two acres of Amazon cocoa were established by the Ministry of Agriculture for seeding purposes and it was this plot that provided the pods for the replanting of the remainder of the farm after 1950.

It was noted during the first survey that owing to the decline in yields, little maintenance was carried out, cropping being the only operation done on the farm. This is reflected in the type of labour employed. From the beginning in 1904, annual and contract labour was employed for clearing planting and general maintenance until 1933, by which time the steady decline in production had set in. For the whole period since cropping began in 1910, up to 1970, the harvesting operations were carried out solely by Kotokuano labour but some of these labourers were also involved in planting during 1934/38 when new planting was taking place on a much smaller scale. From 1949 to 1958 daily labour was employed on replanting and maintenance, the cost of this daily labour being paid from the Government replanting grants. Since 1958 no daily labour has been regularly employed. Some replanting has been done by local farmers whose main interest was the growing of **foodcrops**. In return for planting cocoa they were allowed to grow and harvest **foodcrops** for two years on the cocoa plot. After this time they would move to another plot. Much of the central portion of the farm was established in this way and observations made in other areas of the Eastern Region indicate that this method of establishing cocoa is not uncommon in the region.

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At the time of the 1970 survey, all plots of ten years and under were in low bush although the Amazon and hybrid cocoa of two to three years of age were bearing odd pods. Two of the plots planted in 1964 and 1965 contained only sparse cocoa and the larger of these two plots, that planted in 1964, also contained some foodcrops.

7. THE WACRI PLOT

The twenty acres of old cocoa taken over by WACRI in 1944 contained about 6600 trees, the main aim being to preserve what remained of the mature healthy trees. Initially some 2600 infected trees were cut and month by month as reinfection occurred, the diseased trees were removed and the vacancies filled either by seed sown at stake or by seedlings grown in nursery beds. In 1946 an exceptional drought was experienced and over 500 mature trees died in addition to 631 diseased trees which were cut out. By the seventh year only 76 mature trees remained. There were however a further 130 coppiced trees. In 1946 the experiment had been carried out of coppicing unhealthy trees, and of 336 trees, 110 died without regeneration and 15 showed swollen-shoot symptoms on the first sucker growths and were destroyed. The next year further coppicing was done with similar results and over the next four years cutting out of coppiced trees reduced the number to 130. Flowers and cherelles were observed on the stool shoots two years after coppicing.

In contrast, the infection in the amelonado seedlings was very low, only 3 trees out of some 15,000 being infected in 1945 and under 200 in total were cut out because of disease in the subsequent eleven years. In 1953/54 it was reported "Infection would appear to have been eradicated at Koransang, where young cocoa was established concurrently with cutting out", but in 1955/56 it was reported that "At Koransang there has been a sudden increase in the number of infected trees discovered and cut out". There had been alongside the disease control, systematic thinning to reduce the cocoa tree population to 600-700 trees per acre and the shade trees, including the oil palms used as nurse plants, to a reasonable density.

The rapidly dying old cocoa is shown in the yield record of the twenty acres taken over. Within the block of 6.7 acres of new seedling cocoa planted by WACRI, an area of three acres was selected for yield recording based on pod counts converted to dry weight per acre using a standard pod-value of 12 to the pound.

Table 3. YIELDS OF OLD AND RE-ESTABLISHED COCOA

OLD COCOA
20 ACRES

YEAR	CWT.	LBS. PER ACRE
1944-45	25	140
1945-46	17½	98
1946-47	2	11

NEW AMELONADO COCOA
3 ACRE PLOT PLANTED IN 1945

YEAR	LBS. PER ACRE
1950-51	61
1951-52	no record
1952-53	106
1953-54	228
1954-55	297

Although no exact comparison can be made of yields on the twenty acres, the average yield of the bearing cocoa over the whole farm had come down from the peak of 1928 when it must have been over 1200 lbs. to about 700 lbs. in the 1936-38 period. In 1944-45 therefore yield had dropped to a very low level. The seedling cocoa was just coming into bearing at five years and giving only a low yield at nine years old.

In 1956-57 the WACRI plot was handed over to the Department of Agriculture and records for subsequent years are not available. In 1970 there was no one on the senior staff remaining at Tafo who had been actively associated with the work on the WACRI sub-station at Koransang.

8. FARM INCOME

The relationship of gross receipts at buying centre to the quantities marketed is shown in Plate IV. For cash receipts by the farmer the transport differential from farmstead to roadside and from roadside to buying centre must be deducted. From 1910 to 1915 the cocoa was headloaded to Pakro, about four miles away, and sold to F. & A. Swanzy Ltd., one of the early expatriate merchant family companies which later became part of the United Africa Company. From 1915 it was sold at Mangoase at the highest price offered by any of the various firms which had established buying centres there since the opening of the railway to Accra. After the road was completed, headloading from the roadside gave way to lorry transport. When war came in 1939, a system of Produce Control was operated, under which cocoa prices were fixed for delivery at registered buying centres, and the system has remained substantially the same under the Marketing Boards.

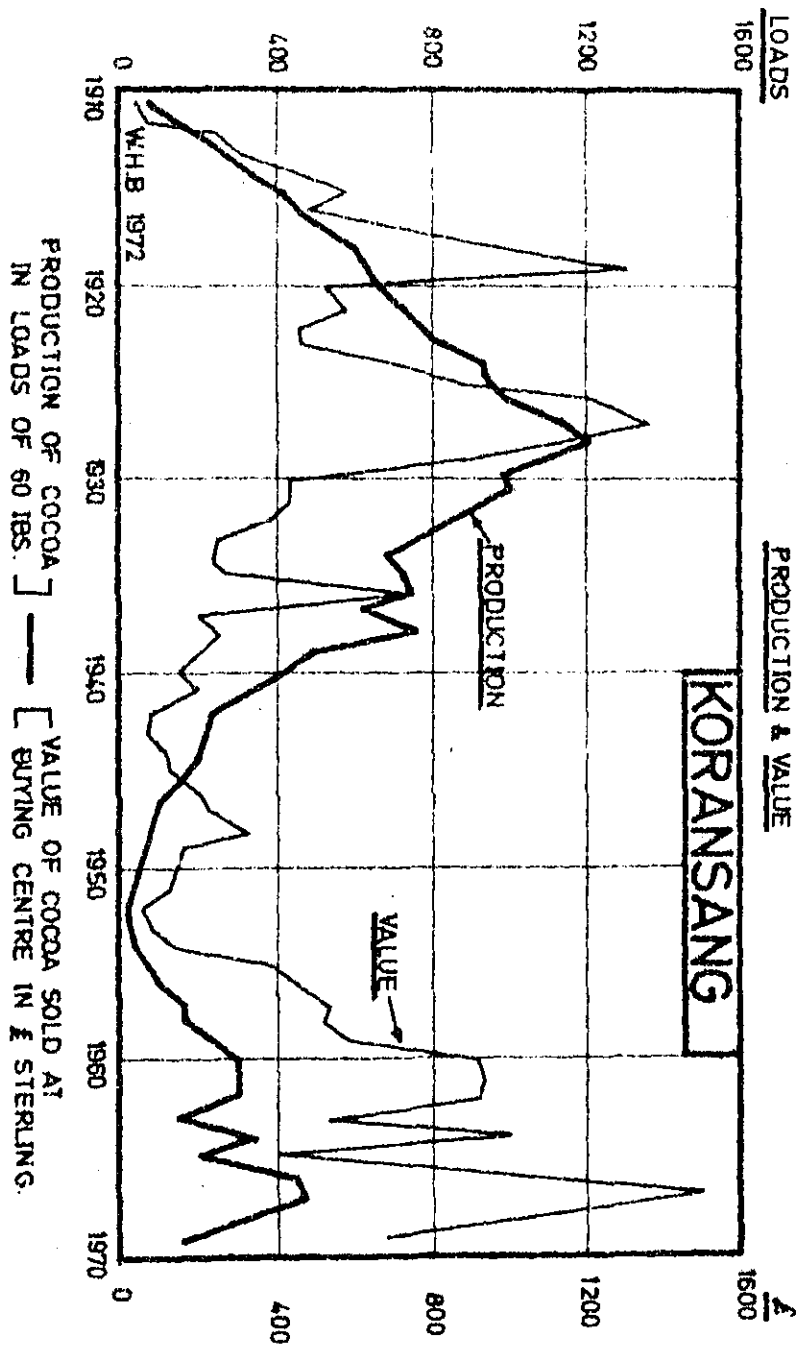
The costs of production are almost wholly labour. In 1904, six labourers were employed on contract, being paid a sum of 60/- each for clearing and planting an area of forest, which must have been the 1904 field of 5.6 acres. Each year until 1932 from two to four contract labourers were engaged. In addition, either one or two labourers on an annual contract were resident on the farm from 1906 to 1933. From the time of cropping in 1910 to the present time, the essential operations of 'brushing' the weeds, plucking, breaking the pods, fermenting and drying the beans ready for market, were performed by Nkotokuano labourers, who were paid a fixed agreed amount per load of cocoa produced, and certain other perquisites. The daily labour employed in the ten years to 1958 varied from six to two: on the average an aggregate of 375 mandays per year were worked at the rate of 4/- to 4/6 per day. It has already been noted that much of the central portion of the farm was re-established by local farmers with no outlay on the part of the farm owners.

The existing financial records of the farm are meagre, either of payments to the different types of labour employed or for transport of cocoa to the buying centre. An attempt was made to build up these records from the fragmentary evidence available, by calling on the memory of the farm owners and by questioning older men. By using estimates of the costs of annual, contract, daily and

PLATE IV

PRODUCTION & VALUE

KORANSANG



nkotokuano labour and headload and lorry charges to the buying centre, a computation was made of the gross margins for the whole period from 1910 to date, but this had to be abandoned as a critical examination of data revealed wide differences between the estimated rates and the few accurate records which could be used as checks.

The gross receipts, the product of the annual production and the buying centre prices, are reasonably accurate: prices for the earlier period had been compiled from series produced for the Gold Coast Department of Agriculture by the Statistical division of the U.A.C. Ltd. from the records of the buying firms which later amalgamated, which had been preserved in their archives in London. For the later period use was made of records kept by the Department of Agriculture and later the Marketing Boards.

The main cost, the nkotokuano labour, traditionally varied between about a fifth when prices were low to about an eighth when prices were high. In the first survey period, 1936-1938, the average rate was $1/8$ in an average price of $10/5\frac{1}{2}$. In 1970, when the price per load was 80/-, the rate was stated to be 15/-. Work elsewhere in the Eastern Region confirms this rate. (It is interesting to note that although the national currency, the Cedi, had been devalued from £2.00 to £2.40 to the £1 sterling in 1966, prices were commonly given in shillings, converted at the old rate of 10/- to the Cedi.)

Although it is not possible to compute gross margins, the gross receipts, shown in Plate IV plotted against the production data, serve to demonstrate the violent fluctuations in farm income. The peaks in 1919-20 and 1927-28, particularly when the value of money is taken into consideration, represent at today's values, high incomes indeed. Also at this period income could vary almost two to one in the space of a few years, price rather than production being the dominant factor.

A fall in gross receipts during the 1930's and early 1940's followed the declining production, with the exception of the year 1937-38 in which a relative high price stood out from the very low levels experienced during the period. It is unlikely that the gross margin was actually negative in any year as the major outgoing, labour costs were largely determined by the cocoa

price. The return on capital, however, must have been zero and the earnings of management very low in certain years. The steep rise in prices after the 1939-45 war took gross receipts to an all-time high in 1967-68 although this was on a production level little more than one third of the peak production of 1927-28.

Farm incomes everywhere are subject to fluctuation. They are particularly vulnerable when dependent on a single world commodity produced in various parts of the world, in which the good and bad years may not coincide: one country may enjoy high production/high world price years, but will suffer other low production/low world price years, the fluctuations in farm income being greatly increased.

From 1939 onwards local prices were divorced from world prices and controlled, but from 1947 to date, a period of high world cocoa prices, the local farmers' price varied as much as two to one. The low level of prices during the slump of the 1930's were continued under war-time control as a deliberate policy to offset inflationary pressures. The large paper balances built up were translated into actual balances after the war and transferred to the Marketing Board. Koransang suffered low income for a period of fifteen years, first as a result of world prices and then the war period. The Marketing Board balances came to be used, not only as a stabilisation reserve in the interest of the cocoa farmer and for development schemes for the benefit of the cocoa areas, but also for general rural development and for financing educational programmes. Rocketing world prices after the war fed the Marketing Board reserves and led to a position in which the Marketing Board, rather than the Government, held the power to direct the use of major resources. Cocoa had been subject to an export duty since early times and the anomalous position was resolved by the neat process of adjusting the export tax progressively so that it was levied at 100% on the excess of world price over a level fixed by Government, intended to represent a fair price for the producer.

As in many other countries, rapid and major developments in the cities and in the trunk roads by-passed the rural areas, the cocoa villages and small country towns showing little change. The earth road between Mangoase and

Suhum, which bisects the farm, was in a worse condition at one period in 1970 than ever before the war. The farmstead itself, an earth compound with simple swish and wooden buildings which had not been rebuilt or improved, also contrasted markedly with the huge expenditure on modern buildings and roads in the capital city, Accra. Koransang was exceptional in being used for experimental purposes and although compensation was not paid initially for trees cut out, a payment of £700 was later made under the Cocoa Rehabilitation (ex-gratia) Grant Scheme. The cost of the replanting of the Amazon cocoa was also borne by Government. Large sums of money were certainly devoted to the control and eradication of swollen shoot in the less heavily affected areas, but this flow largely by-passed the devastated areas of the Eastern Region which were too far gone for the remedial measures of cutting out to be effective.

However under the new Government planting schemes for these areas, the Ministry of Agriculture undertakes the clearing, planting of cocoa seedlings and food crops, supplying the supervision and labour without cost to the farmer. Even the food crops are harvested and handed over to the farmer for disposal, and finally the new cocoa farm. His contribution is his land. Koransang is within this area and the next decade may transform the picture.

GLOSSARY OF TERMS

ABUSA: This is a Twi word meaning tripartite division. It came to mean the system under which an 'abusa' labourer plucks the cocoa and is paid a one-third share of the value of the cocoa. Plucking includes harvesting the pods, breaking and fermenting, drying and preparing for market.

In special cases, as for a member of the family, the share may not be a third, but perhaps a half.

CARETAKER: A semi-permanent arrangement under which an owner hands over a farm on an abusa crop-sharing basis, the caretaker undertaking all the farm work and receiving one-third of the proceeds of cocoa sales. He will have made some customary gifts to the owner when making the contract, and may be provided with accommodation, or live in a homestead, take foodcrops, etc., and give some additional services in exchange.

ABUSA PLANTING: A landowner may hand over a piece of land to a tenant who will clear, plant cocoa and foodstuffs, and act in the same way as a caretaker. He harvests the foodcrops and hands over one-third to the landlord. When the cocoa comes into bearing, he manages the farm and hands over two-thirds of the prepared cocoa. Some of the Badoo lands are being developed under this system.

A variant is found under which the landowner conveys one-third of the farm, at his choice, to the farm worker after the whole area has been developed.

KOTOKUANO: (Plural KOTOKUAN) - a bag; 'Kotoku' meaning bag, and 'ano' meaning amount. The mouth of the bag signified the price of the bag. The kotokuano labourer receives an agreed fixed cash payment per load of 60 lbs. of cocoa he plucks.